



Rocla Materials Pty Ltd

**CALGA SAND QUARRY
INDEPENDENT
ENVIRONMENTAL
COMPLIANCE AUDIT**

March 2015

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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Rocla Materials Pty Ltd

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1.0 Introduction

Rocla Materials Pty Limited (Rocla) undertakes sand extraction operations throughout greater Sydney and several regional areas in New South Wales (NSW). The Kurnell and Calga quarry operations are suppliers of fine washed sand, specifically graded for blending in premixed concrete.

The Calga Sand Quarry is located approximately 40 kilometres north of Hornsby via the F3 Freeway and services both the Sydney and Central Coast markets. Calga produces washed sands for use in premixed concrete and concrete products as well as yellow and off-white brick laying (mortar) sands. The current development consent for the Calga Sand Quarry (known as the Stage 3 expansion) was granted by the NSW Minister for Planning on 28 October 2005 (including a modification approved 2 July 2012) and has been operating since February 2006. This development consent replaced the initial development consent No. 10604 issued by the NSW Land and Environment Court on 15 July 1991 and which expired on 1 January 2005. More recently Project Approval (PA06_0278) was granted by the NSW Minister for Planning on 23 December 2013 for the Calga Quarry Extension Project; with works related to this approval not commenced at the time of the audit.

Rocla commissioned Umwelt (Australia) Pty Limited (Umwelt) to conduct an independent environmental audit of its Calga Sand Quarry. The audit was conducted in accordance with Schedule 5 Condition 5 of the Development Consent for the Stage 3 expansion of the quarry (DA 94-4-2004) and, as per the audit scope determined by the Department of Planning and Environment (DP&E), also considered performance against the recently granted Project Approval (PA06_0278). The audit assessed the compliance status of the Calga Sand Quarry against the development consent, project approval and other relevant environmental approvals and licences, for operations occurring between 28 October 2008 and 9 April 2014.

It is noted that in regard to the recently granted project approval, works under this approval had not commenced at the time of the site audit as the approval was subject to challenge in the NSW Land and Environment Court. Therefore a full audit against the requirements of PA06_0278 was not possible as it was not in force, no works permitted by it had commenced and the specific compliance and environmental management requirements (e.g. new management plans etc) were not triggered and/or were not yet due.

The site component of the environmental audit was conducted on 20 February and 9 April 2014, with further nearby landholder interviews conducted after this time. This report provides an outline of the audit methodology and results, and provides recommended actions for achieving full compliance with environmental approvals. **Appendix 1** includes a detailed checklist of the status of compliance with the conditions of the 2004 development consent (DA 94-4-2004).

The audit was led by John Merrell, Umwelt's Group Manager Environment and Community NSW with the assistance of Elliot Holland, Environmental Scientist. Two technical specialists were also part of the audit team as required by the audit scope agreed with DP&E being Lange Jorstad, Senior Hydrogeologist at Geosyntec Consultants (groundwater) and Tim Procter, Manager Engineering at Umwelt (noise).

As required by Condition 5 of Schedule 5 of the Development Consent and Condition 11 of Schedule 4 of the Project Approval, the audit team was approved by DP&E to undertake the audit on 14 January 2014 and 14 March 2014.

1.1 Audit Objectives

The key objectives identified for the 2014 Independent Environmental Audit for Calga Sand Quarry were as follows:

- to undertake an independent environmental audit as required by Condition 5 of Schedule 5 of the conditions of the Development Consent;
- to review compliance with the conditions of the Project Approval to the extent practical noting that the approval had not yet commenced; and
- to assess the environmental performance of the Calga Sand Quarry operations and the ability of the Calga Sand Quarry environmental management systems and controls to provide for sustainable management of the operations.

1.2 Audit Scope

As part of the Development Consent conditions, the Calga Sand Quarry operations are required to be audited independently to determine compliance to the satisfaction of the Secretary (formerly the Director-General) of the DP&E. In order to assess the level of compliance with the terms of the consent, Condition 5 of Schedule 5 of Development Consent 94-4-2004 requires that an independent environmental audit be carried out. Specifically, Condition 5 of Schedule 5 of the Development Consent states:

Within 3 years from the date of this Consent, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:

- a) be conducted by a suitably qualified, experienced and independent person whose appointment has been endorsed by the Director-General;*
- b) be consistent with ISO 19011:2002 Guidelines for Quality and/or Environmental Systems Auditing, or updated versions of this guideline;*
- c) assess the environmental performance of the development, and its effects on the surrounding environment;*
- d) assess whether the development is complying with the relevant standards, performance measures and regulatory requirements;*
- e) review the adequacy of the Applicants Environmental Management Strategy and environmental management plans/protocols; and if necessary*
- f) recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.*

Condition 2 of Schedule 2 of Development Consent 94-4-2004 provides the Terms of Approval for the development, which identifies that the development shall be carried out generally in accordance with the:

- a) DA 94-4-2004;*
- b) EIS titled Environmental Impact Statement for the Proposed Calga Sand Quarry Extension, dated May 2004;*
- c) Amendment Report titled Amendment to a Proposal Submitted as Development Application (DA 94-4-2004) for an Extension to the Calga Sand Quarry, dated June 2005;*
- d) Modification application DA 94-4-2004 – MOD 1 and the accompanying Environmental Assessment prepared by Rocla Materials Pty Ltd and dated January 2012; and*
- e) conditions of this development consent.*

The audit also included a review against the requirements of Project Approval 06_0278, noting that no works under this approval had commenced at the time of the audit. Condition 11 of Schedule 4 of Project Approval 06_0278 requires that an independent environmental audit be carried out. Specifically, Condition 11 of Schedule 4 of the Project Approval states:

By 30 June 2014 and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

- a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;*
- b) include consultation with the relevant agencies;*
- c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or necessary water licences for the project (including any assessment, strategy, plan or program required under these approvals);*
- d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and*
- e) recommend measures or actions to improve the environmental performance of the project and/or any strategy, plan or program required under these approvals.*

Condition 2 of Schedule 2 of Project Approval 06_0278 provides the Terms of Approval for the development, which identifies that the development shall be carried out generally in accordance with the:

The Proponent shall carry out the project generally in accordance with the:

- a) EA;*
- b) Statement of commitments; and*
- c) Conditions of this approval.*

1.3 Audit Criteria

The audit assessed the level of compliance and the environmental performance of the quarry against the following approvals and licences:

- the Development Consent (DA 94-4-2004), including the associated modification approval;
- the Project Approval (PA06_0278) to the extent practical noting that this approval had not commenced at the time of the audit;
- the Calga Sand Quarry Environment Protection Licence (EPL) 11295;
- the Environmental Impact Statement (EIS), associated Amendment Report, and including the Environmental Assessment (EA) supporting MOD 1 related to the Development Consent;
- the EA related to the Project Approval; and
- any strategy, plan or program which has been prepared for the Development/Project.

Plans and programs required to be prepared by the Development Consent for the development that were assessed as part of the audit included:

- Environmental Monitoring Program;

- Groundwater Contingency Strategy;
- Erosion and Sediment Control Plan;
- Surface Water Monitoring Program;
- Groundwater Monitoring Program;
- Noise Monitoring Program;
- Air Quality Monitoring Program;
- Site Water Management Plan;
- Rehabilitation and Landscape Management Plan; and
- Environmental Management Strategy.

It is noted that a number of strategies, plans and/or programs are required by the Project Approval 06_0278. However, as these documents were not yet required at the time of the audit and had not yet been produced, they were not able to be audited. It noted that the date of submission for approval of these documents is the end of June 2014 which is outside the period covered by this audit.

1.4 Limitations

The findings of the compliance audit are based upon visual observations of the site and its vicinity, interviews with site personnel and our interpretation of documentation provided by Rocla.

Opinions presented herein apply to the site as it existed at the time of the audit and from information provided by site personnel and government agencies. Any changes to this information of which Umwelt is not aware and has not had the opportunity to evaluate therefore cannot be considered in this report.

The auditors have taken due care to consider all reasonably available information provided during the undertaking this audit and have taken this information to represent a fair and reasonable characterisation of the environmental status of the site, but recognise that any site assessment program is necessarily limited in scope and true site conditions may differ from those inferred from the available data.

2.0 Audit Methodology

The audit process involved the interview of personnel, a review of documentation and samples of records provided by Rocla and a site inspection of the quarry operations to determine the level of environmental performance and compliance of the development. The audit process is described in more detail in **Sections 2.1 to 2.5**.

2.1 Preliminary Document Review

Prior to the audit, environmental documentation associated with the Calga Sand Quarry was reviewed by the auditors. This involved a review of the Development Consent, Project Approval and EIS/EAs for the site and the management plans that have been prepared in accordance with the Development Consent. As noted in **Section 1.3**, management plans required by the Project Approval have not yet been produced or submitted for approval by the Secretary of DP&E and are therefore unable to be audited.

2.2 Site Interviews and Inspections

2.2.1 Opening Meeting

The opening meeting was held at the Calga Sand Quarry main office commencing at 8 am on 20 February 2014. The list of participants is provided in **Table 2.1**.

Table 2.1 – Opening Meeting Attendees

Opening Meeting	Organisation	Title
Paul Slough	Rocla Quarry Products	Production Manager – Calga Quarry
Pat McCue	Rocla Quarry Products	Quarry Superintendent
Alex Echt	Rocla Quarry Products	Resource Development Manager – East
John Merrell	Umwelt	Lead Auditor
Elliot Holland	Umwelt	Assistant Auditor

The audit team was introduced and the scope of their responsibilities was conveyed to the auditees. The purpose, depth and scope of the audit were outlined. The methods to be used by the team to conduct the audit were explained. It was stated that the audit team would be interviewing personnel, reviewing site management plans, examining records and conducting a site inspection in order to address specific compliance requirements, particularly those related to the relevant consents and licences for Calga Sand Quarry.

2.2.2 Audit Interviews

During the on-site component of the audit, interviews were conducted with the Calga Sand Quarry staff and contractors identified in **Table 2.2**.

Table 2.2 – Personnel Interviewed During Audit

Name	Area of Operations
Paul Slough	Production Manager – Calga Quarry
Pat McCue	Quarry Superintendent
Alex Echt	Resource Development Manager – East

In addition, as per the audit scope agreed with DP&E, the audit team (John Merrell and Lange Jorstad) also visited several nearby private properties with groundwater bores and interviewed the landowners in regard to any concerns they may have related to groundwater impacts. Further information regarding these landowner interviews is provided in **Appendix 3**.

2.2.3 Data Collection and Verification

Where possible, documents and data collected during the audit process were reviewed whilst on site. A number of documents were provided to the audit team prior to the on-site component of the audit. Several documents that were not available during the on-site component of the audit were provided following the audit.

All information obtained during the audit process was verified by the audit team where possible. For example, statements made by site personnel were verified by viewing documentation and/or site inspections where possible. Where suitable verification could not be provided, this has been identified in the audit findings.

2.2.4 Site Inspection

A detailed site inspection of Calga Sand Quarry was undertaken on 20 February and 9 April 2014. The following locations were inspected:

- extraction area (refer to **Plate 1** of **Appendix 2**);
- acoustic and visual bunds (refer to **Plates 2** to **3** of **Appendix 2**);
- fixed wash plant and mobile plant;
- weighbridge, access road, workshop and store area;
- rehabilitation areas (refer to **Plates 4** to **5** of **Appendix 2**);
- haul road; and
- dams.

2.2.5 Closing Meeting

The list of participants is provided in **Table 2.3**.

Table 2.3 – Closing Meeting Attendees

Closing Meeting	Organisation	Title
Paul Slough	Rocla Quarry Products	Production Manager – Calga Quarry
Pat McCue	Rocla Quarry Products	Quarry Superintendent
John Merrell	Umwelt	Lead Auditor
Elliot Holland	Umwelt	Assistant Auditor
Lange Jorstad	Umwelt	Technical Specialist – Groundwater

The objectives of this meeting were to discuss any outstanding matters, present preliminary findings and outline the process for finalising the audit report.

2.3 Reporting

Following the completion of the site audit, the Development Consent, Project Approval and EPL compliance checklists were completed and audit notes were reviewed in order to compile a list of outstanding matters to be noted in the audit report. This report was prepared to provide an overview of the status of compliance by reference to the relevant compliance documentation and any other observations of the auditors during the site inspections and interviews. This report has been prepared on an exception basis, highlighting any areas where action or improvement is required.

A draft copy of the report was provided to Rocla to review and to provide Rocla with an opportunity to identify additional evidence that would address any of the potential non-compliance issues identified following the site audit. In March 2015 Rocla subsequently requested the auditors attend a meeting to discuss its additional evidence. This meeting was held on 12 March 2015 at which some additional evidence was provided. The additional evidence was considered in the finalisation of this audit report.

2.4 Definitions

The reporting of results from the compliance audit was determined based on the following definitions.

Compliance

The intent and explicit requirements of the condition have been met. This includes meeting all requirements with respect to consultation (agency or otherwise), timing of actions or activities, the preparation of management plans or other specific requirements of the condition.

The failure to meet any or all of the specific requirements of the condition would result in non-compliance.

Non-Compliance

A non-compliance occurs when any of the specific requirements of the condition have not been met.

Administrative Non-Compliance

A technical non-compliance with a condition of the consent that is administrative in nature and that would not result in material harm to the environment (e.g. where a report required to be prepared has been completed but was submitted after the due date in the condition).

Verification

The inability to provide formal written verification (letter, fax, email, meeting minutes, etc.) that a requirement has been met does not necessarily result in a non-compliance. If the auditor is able to verify by other demonstrable means (visual inspection, personal communication, etc.) that a condition has been met then, in most cases, the operation should be considered to be in compliance for that condition.

Observation

A finding which:

- is not likely to significantly affect the operations;
- does not strictly relate to the scope of the audit of compliance; and
- could lead to performance improvement.

Not Triggered

A condition or requirement has an activation or timing requirement which had not been triggered or completed at the time of the audit and therefore a determination of compliance could not be made. It is recommended that future audits assess compliance of any conditions or requirements that were found to have not been triggered during this audit.

3.0 Audit Findings

The key findings of the audit are presented in this section. A detailed assessment of compliance with the 2004 development consent DA 94-4-2004 is provided as a checklist in **Appendix 1**.

A review of the status of actions from the 2009 compliance audit is provided in **Section 3.1**. Specific findings of the audit in relation to the 2004 development consent (DA 94-4-2004), recent Project Approval (PA06_0278) and the EPL are discussed in **Sections 3.2 to 3.4**. The results of the site inspections undertaken for the development and any other issues identified during the audit are provided in **Section 4.0**.

3.1 Previous Compliance Audit 2009

In February 2009, Umwelt undertook an inspection of the Calga Sand Quarry to evaluate compliance of the quarry's operations with the 2004 development consent. The inspection focused primarily on the consistency of the operations with the consent, general environmental management, dust management, surface water and groundwater management and noise management. This audit made a number of recommendations to improve the compliance status and environmental performance of the operation.

Where previous non-compliances relate to ongoing operations at the site, these have been reviewed by Umwelt as part of the 2014 audit. Recommendations from the previous audit report are detailed in **Table 3.1**. The table includes Rocla's response latest formal response to the non-compliant conditions from the 2009 audit (as at 2012) and provides the compliance status at the time of the audit.

Table 3.1 – Status of Recommendations from 2009 Audit

Schedule and Condition Number	Recommendation from the 2009 Audit	Rocla's Response to Non-compliant Conditions (Rocla, 2012)	Status as of 2014 Audit
Schedule 3, Condition 2	Ensure any landholder agreements relating to noise impacts are forwarded to EPA and DP&E.	Rocla respectfully requests that compliance can still be achieved through verbal agreements with its neighbours.	No change. No evidence was provided that evidence of agreements has been provided.
Schedule 3, Condition 9 (note)	Obtain a Part 5 licence for the quarry pit from NOW as a matter of high priority.	No response provided.	Licences are now in place.

Table 3.1 – Status of Recommendations from 2009 Audit (cont.)

Schedule and Condition Number	Recommendation from the 2009 Audit	Rocla's Response to Non-compliant Conditions (Rocla, 2012)	Status as of 2014 Audit
Schedule 3, Condition 15 (note)	Amend the Groundwater Monitoring Program to: 1) Include commitments for evaluating long term impacts of the final void on regional groundwater resources; and 2) Develop a closure and post closure groundwater management plan at least 5 years prior to closure of the quarry, to the satisfaction of DP&E.	Rocla respectfully requests the DP&E express its satisfaction with the updated Groundwater Monitoring Program prepared by Aquaterra.	No change, refer to Section 3.2 for discussion.
Schedule 3, Condition 16	Ensure the document title reflects the condition of approval requirement. Locate evidence that consultation was undertaken with NOW or finalise impact assessment criteria with NOW and potentially affected landholders and obtain approval for these from the Director-General. Formalise agreements with potentially affected landholders regarding impact assessment criteria. Locate evidence that consultation was undertaken with NOW regarding long-term water supply mitigation measures for potentially affected landholders or finalise long-term water supply mitigation measures for potentially affected landholders in consultation with the landholders and NOW. Formalise agreements with potentially affected landholders regarding long-term water supply mitigation measures. Locate evidence that confirms that the Director-General is satisfied with the strategy or obtain the Director-General's satisfaction of the measures detailed in the strategy. If required, update the SWMP to include the impact assessment criteria and water supply mitigation measures in a section titled 'Groundwater Contingency Strategy' so that this information is easily identified in the future.	Rocla respectfully requests the Director-General's satisfaction with the submitted document.	No change, refer to Section 3.2 for discussion.
Schedule 3, Condition 22	Ensure required consultation timeframes are met. Locate evidence that the Director-General is satisfied with the plan or provide a copy of the plan to the Director-General seeking their satisfaction with the plan.	Rocla respectfully requests the Director-General's satisfaction with the submitted document.	No change, refer to Section 3.2 for discussion.

Table 3.1 – Status of Recommendations from 2009 Audit (cont.)

Schedule and Condition Number	Recommendation from the 2009 Audit	Rocla's Response to Non-compliant Conditions (Rocla, 2012)	Status as of 2014 Audit
Schedule 3, Condition 27	Locate evidence that the RMS is satisfied with the painted seagull arrangement or seek confirmation that the RMS is satisfied with the painted seagull arrangement.	No response provided.	No change, refer to Section 3.2 for discussion.
Schedule 3, Condition 28(a)	Locate evidence that the RMS and the Director-General are satisfied with the access arrangements or seek confirmation that the Director-General and RMS are satisfied with the access arrangements to the site.	Rocla respectfully requests the Director-General's satisfaction with the heavy vehicle turning paths at the entrance to the quarry.	No change, refer to Section 3.2 for discussion.
Schedule 3, Condition 28(b)	Locate evidence that the DP&E and the Director-General are satisfied with the access arrangements or seek confirmation that DPI and the Director-General are satisfied with the vehicular access arrangements to the pit floor of the quarry.	Rocla respectfully requests the Director-General's satisfaction with the internal access arrangements.	No change, refer to Section 3.2 for discussion.
Schedule 3, Condition 29	Locate evidence that the on-site parking is in accordance with Council codes and to the Director-General's satisfaction or seek confirmation that on-site parking facilities are designed and constructed in accordance with relevant Council parking codes and the Director-General is satisfied with the on-site parking facilities.	Rocla respectfully requests the Director-General's satisfaction with the on-site parking arrangements.	The audit found that there was appropriate parking and that Council's Development Control Plan did not have any specific requirements. No evidence of DP&E satisfaction was provided.
Schedule 3, Condition 39(b)	Locate evidence or ensure annual production data is provided to DPI using the standard reporting form and ensure a copy of this form is kept on file at the quarry. Locate evidence or provide a copy of the standard reporting form submitted to DPI in each AEMR.	No response provided.	The audit sighted the DPI standard reporting form; however, this form was not included in AEMRs for the reporting period

3.2 2004 Development Consent (DA 94-4-2004)

The 2004 development consent (DA 94-4-2004) was the primary consent operating during the audit period. All quarry operations undertaken during the audit period were regulated by this development consent.

Calga Sand Quarry was found to be operating broadly in compliance with the terms of the 2004 development consent; however, 13 non-compliances and 12 administrative non-compliances were identified where action is required to ensure full compliance is achieved. A number of verifications were also identified, where full compliance with a condition/requirement could not be determined as insufficient evidence was available but the auditor felt that the requirement had likely been met. A number of performance observations were also made.

A full compliance checklist against the requirements of the 2004 development consent is included in **Appendix 1**. A summary of the non-compliance issues related to the Development Consent is provided in the following sections.

Schedule 2, Condition 2(b) and (e) – Non-compliance

The Applicant shall carry out the development in accordance with the:

- b) EIS titled Environmental Impact Statement for the Proposed Calga Sand Quarry Extension, dated May 2004;**
- e) Conditions of this development consent.**

While the operations at Calga Sand Quarry are in a manner that is broadly consistent with the operations described in the EIS and associated modification, non-compliances with the conditions DA 94-4-2004 have been identified; as described in this report. A key issue identified was the periodic operation of a primary crusher at the site which is not consistent with the development as outlined in the EIS. Rocla noted that it submitted a modification that would provide for use of this crusher that has not been determined and that it has also discussed an application to vary the EPL with the Environment Protection Authority (EPA) to provide for the use of this crusher. Rocla also noted that this non-compliance will be rectified by the commencement of Project Approval (PA06_0278), which is currently subject to an appeals process.

Schedule 2, Condition 4(b) – Non-compliance

The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:

- b) the implementation of any actions or measures contained in these reports, plans or correspondence.**

It is noted that in correspondence to the DP&E, dated 18 November 2013, Rocla committed to undertake a census of all groundwater bores within 500 metres of the extraction area. This census was to form the basis of consultation with those nearby landholders that had groundwater bores as part of this audit. The census has not been completed.

Recommendation:

It is recommended that Rocla undertake the census of all groundwater bores within 500 metres of the extraction area as committed.

Schedule 3, Condition 2 – Non-compliance

The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 1.

Noise exceedances for the noise impact assessment criteria have been recorded during the period covered by the audit. The review of noise monitoring results identified the following noise exceedances:

2010

- April 2010 Continuous Monitoring BarnOwl Report (Walkabout Wildlife Park):
 - Exceedances of 35 dB(A) day time criteria when processing the coarsest-grade sandstone.
- August 2010:
 - 2 dB(A) exceedance at King residence (CN-2) for day time.

The 2010 AEMR reported:

- *'The criteria relevant for attended monitoring were complied with on all occasions with the exception of CN-2 where the noise level exceeded the noise criterion by 2dB(A). A marginal exceedance of 2dB(A) is generally considered to be within the acceptable tolerance for compliance purposes';*
- *'There are no noise-related issues requiring follow up during 2011'; and*
- *'The annual return covering the reporting period (i.e. 24 July 2009 to 23 July 2010) reported no non-compliances.'*

2011

- August 2011
 - 2 dB(A) exceedance at Gazzana residence (CN-1) for day time.
- December 2011
 - 3 dB(A) exceedance at Gazzana residence (CN-1) for day time;
 - 6 dB(A) exceedance at King residence (CN-2) for day time;
 - 1 dB(A) exceedance at Kashouli residence (CN-3) for day time;
 - 1 dB(A) exceedance at Townsend residence (CN-4) for day time.

The 2011 AEMR reported:

- *'The criteria relevant for attended monitoring were complied with at all monitoring locations except at two locations on 16 December 2011. On that occasion, the criteria were exceeded by between 3dB(A) and 6dB(A) for the period of time whilst the muffler on a pump operating in Cell 3/2b was not fully effective. A new muffler was purchased and subsequent testing has shown that noise compliance levels are now being met. It is noted that during the period of time when the defective muffler was in use, no complaints were received.'*
- *'Compliance with noise criteria continued throughout 2011 with the exception of the incident on 16 December 2011. The cause of this short term non-compliance has since been remedied with the installation of a new muffler on the water pump which caused the exceedances.'*; and
- *'The annual return covering the reporting period (i.e. 24 July 2010 to 23 July 2011) reported no non-compliances.'*

2012

- June 2012
 - 3 dB(A) exceedance at Gazzana residence (CN-1) for day time;
 - 1 dB(A) exceedance at Kashouli residence (CN-3) for day time.
- July 2012
 - 7 dB(A) exceedance at King residence (CN-2) for day time.

The 2012 AEMR reported:

- *'Exceedences were recorded at CN-1 and CN-3 on 27 June 2012 and at CN-2 on 6 July 2012. With these exceedences being between 1 dB(A) and 7 dB(A). These exceedences were attributed to a pump operating in Cell 3/2b which supplies water to the wash plant. Following this monitoring acoustic insulation was installed around the pump which resulted in subsequent monitoring indicating that compliance levels are now being met.'*
- *'Compliance with noise criteria continued throughout 2012 with the exception of the incident on 27 June and 6 July. The cause of this non-compliance has since been remedied with the installation of acoustic insulation on the water pump which caused the exceedances.'*; and
- *'The annual return covering the reporting period (i.e. 24 July 2011 to 23 July 2012) reported no non-compliances.'*

2013

- February 2013
 - 1 dB(A) exceedance at Walkabout Wildlife Park for day time.
- March 2013
 - 2 dB(A) exceedance at King residence (CN-2) for day time.

- July 2013
 - 2 dB(A) exceedance at Gazzana residence (CN-1) for day time.

The 2013 AEMR has not been sighted.

Discussion

Section 11 of the NSW *Industrial Noise Policy* (EPA, 2000) notes that: 'A development will be deemed to be in non-compliance with a noise consent or licence condition if the monitored noise level is more than 2 dB above the statutory noise limit specified in the consent or licence condition.' A breach of a noise consent or licence condition occurs if the noise from the development results in a sustained non-compliance that is not addressed or rectified.

During the site inspection it was noted that noise exceedances were reported through the AEMR in accordance with Schedule 4, Condition 1 of DA 94-4-2004. While the AEMRs report on the action taken to address the noise exceedances, no evidence was provided to indicate the EPA, Secretary, or the affected residence were notified of the exceedances.

In addition to the quarterly noise monitoring program, it was noted that Rocla had initiated, and reported on, supplementary monitoring that had been undertaken on a number of occasions to specifically investigate potential noise issues associated with complaints.

In terms of its operational performance, Rocla has responded to both noise complaints and monitoring that has indicated noise levels that exceed relevant criteria. The Quarry Manager indicated a good understanding of the quarry operations and equipment that did, or had the potential to, result in adverse noise impacts and managed the operation as required to respond to the identified issues (e.g. fixing or replacing noisy equipment).

However, in terms of its compliance management, Rocla need to review how it records and reports exceedances of both consent and EPL limits. It is noted that many of the exceedances are small (1 to 2 dB), however, they are still exceedances of limits and need to be responded to and reported as such. It is recommended that Rocla develop a procedure that provides site personnel with information with how to deal with exceedances of noise limits from a compliance management perspective.

Rocla noted that the noise impact assessment criteria for Walkabout Wildlife Park in the new Project Approval (PA06_0278) have been updated to 43 dB(A) and that recent monitoring results indicate compliance with this criteria.

Recommendation:

It is recommended that Rocla develop a noise compliance management procedure to assist site personnel to appropriately report and respond to exceedances of noise limits on both the development consent and EPL.

Schedule 3, Condition 9 (note) – Administrative Non-compliance

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.

The lack of water access licenses (WALs) was originally raised as a non-compliance during the 2009 independent environmental audit (IEA). In response to this non-compliance, Rocla provided evidence of WALs as attachments to a response letter prepared by R.W. Corkery & Co. (dated 23 January 2012). Evidence of two WALs (issued 14 January 2010) was included

in the attachments. This means that during the audit period (28 October 2008 to 9 April 2014) there were insufficient WALs for the original modelled pit inflow for a 14 month period between 28 October 2008 and 14 January 2008. It is noted however that Rocla now hold sufficient WALs for the operation of the Calga Sand Quarry (refer to **Appendix 3**).

Schedule 3, Condition 15 (c) – Non-compliance

Site Water Management Plan....

(c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and

Impact assessment criteria for groundwater dependent ecosystems (GDEs) are not included in the Site Water Management Plan (SWMP). Reference is made to annual inspections of vegetation as part of a Rehabilitation and Landscape Management Plan; however, this plan does not include impact assessment criteria for GDEs (or even identify GDEs that require monitoring) and does not consider impacts to groundwater dependent surface water bodies. Accordingly, only partial compliance with this condition was demonstrated.

Recommendation:

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.

Schedule 3, Condition 15(note) – Non-compliance

Note: The Groundwater Monitoring Program shall 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 Director-General.

The 2009 audit noted this condition as being a non-compliance and made the recommendation to:

Ensure Groundwater Monitoring Program or SWMP is amended to include commitments for evaluating long term impacts of the final void on regional 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.

The auditor is not aware of any amendments to the SWMP since the 2009 audit to incorporate a commitment to evaluate the long-term impact of the quarry void on regional groundwater resources or to develop a post closure groundwater management plan.

Recommendations:

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.

Schedule 3, Condition 16 – Non-compliance

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

The 2009 audit made several recommendations in regard to this condition including making changes to the SWMP to address this condition and to demonstrate that the Groundwater Contingency Strategy had been prepared in consultation with the NSW Office of Water (NOW) and landowners. No evidence was provided that actions have been undertaken to address these recommendations.

The auditor sighted a document entitled 'Rocla's response to Non-Compliant Conditions with Development Consent DA 94-4-2004' (January 2012), in which Rocla's response was indicated as '*Rocla respectfully requests the Director-General's satisfaction with the submitted document*'. No evidence was available during the audit that the Director-General had responded to this request. Additionally, it is unclear if the 'submitted document' referred to in this response is the SWMP, or another document. Accordingly, it was unable to be determined whether this condition has been complied with.

Further detail regarding the compliance status of this condition is provided in **Appendix 3**.

Recommendation:

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.

Schedule 3, Condition 19 – Non-compliance

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 shall commission a suitably qualified hydrogeologist, whose appointment has been approved by the Director-General, 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 shall:

- a) be prepared in consultation with the NOW, 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 Director-General.

Commencement of initial sand extraction in Stage 3/6 commenced in April 2011 (refer to Section 2.1 of the 2011 AEMR). The auditor reviewed a groundwater modelling report prepared for the southern extension environmental assessment (EA), that include a 200 year recovery simulation that could be considered as an assessment of the potential long term impact of the final void on groundwater resources.

No evidence was provided that either a quarry closure or post-closure groundwater management plan have been prepared.

Rocla has noted that work by its groundwater consultant (Peter Dunden) reports that groundwater impacts for the quarry are less than predicted for the modelling completed for DA94-4-2004, with groundwater monitoring continuing for all bores in the area.

Recommendation:

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.

Schedule 3, Condition 22 – Administrative Non-compliance

Within 6 months of the date of this consent, the Applicant shall 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 Director-General: This plan must:

No evidence of DP&E's satisfaction with the Rehabilitation and Landscape Management Plan was sighted. Rocla has indicated that DP&E have advised that no reply is an approval; however, there was no written evidence provided to confirm that the plan was approved or to confirm this advice. Letter of submission of the plan to DP&E was not sighted. Assuming it was submitted as outlined in the letter from RW Corkery dated 17 Aug 2006, it was outside the required timeframe. Due to the above, this condition has not been fully satisfied.

Recommendation:

It is recommended that Rocla obtain written confirmation from DP&E that it is satisfied with the Rehabilitation and Landscape Management Plan.

Schedule 3, Condition 23 – Administrative Non-compliance

Within 4 years of providing the Rehabilitation and Landscape Management Plan to the Director-General, and every 5 years thereafter, the Applicant shall review and update the plan to the satisfaction of the Director-General.

As the Rehabilitation and Landscape Management Plan was completed in August 2006, a review was required to be completed by August 2010. It was noted during the site inspection that a review was not undertaken; instead Rocla advised that a review was being undertaken at the time of the audit.

Recommendation:

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.

Schedule 3, Condition 25 – Administrative Non-compliance

Within 4 years of lodging the rehabilitation bond with the Director-General, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall review, and if necessary revise, the sum of the bond to the satisfaction of the Director-General. This review must consider:

The date of the bank guarantee for the rehabilitation bond was 18 September 2007, with a review and revision of the bank guarantee due by 18 September 2011. However, the rehabilitation bond was not revised until 21 February 2012.

It is noted that Rocla has indicated the bond was in place by 28 October 2006; however, negotiations with DP&E and Council to merge the bond commenced 12 October 2006, with Council's response delayed until 13 March 2007 before Rocla could commence preparation of the final bond to its requirements.

Recommendation:

It is recommended that Rocla ensure that future reviews, and if necessary revision, of the rehabilitation bond are completed by the due date.

Schedule 3, Condition 27 – Administrative Non-compliance

Prior to carrying out any development, the Applicant shall 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 RTA.

Evidence of the Roads and Maritime Services' (RMS) (formerly the Roads and Traffic Authority (RTA)) satisfaction with a painted seagull arrangement was not provided during the audit. This finding is the same as that for the 2009 audit with no road works or other changes occurring during the period covered by this audit. It is noted that the works would have required a s138 authority under the *Roads Act 1993* from the relevant roads authority. Rocla advised that this work was undertaken by a contractor and therefore Rocla do not have the records relating to the approval from the road authority or any discussion with RMS.

While verification of RMS's satisfaction with the works was not provided, it is expected that approval would have been given by the relevant roads authority in order for the work to have been completed.

Recommendation:

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.

Schedule 3, Condition 28 – Non-compliance

The Applicant shall ensure that the long term access road is designed to:

- (a) accommodate heavy vehicle turning paths for the left hand turn from Peats Ridge Road into the access road, to the satisfaction of the RTA and the Director-General; and**

(b) provide for vehicular access to the pit floor, to the satisfaction of the DPI and the Director-General.

Evidence of the DP&E and the RMS's satisfaction with the road sealing activities was not provided during the audit. These findings are the same as those for the 2009 audit with no road works or other changes occurring during the period covered by this audit.

Recommendation:

It is recommended that Rocla confirm DP&E and RMS are satisfied with the works undertaken to ensure compliance with this condition.

Schedule 3, Condition 28 (b) – Administrative Non-compliance

The Applicant shall ensure that the long term access road is designed to:

(b) provide for vehicular access to the pit floor, to the satisfaction of the DPI and the Director-General.

No evidence was provided of DPI's or the Secretary's satisfaction with access to the pit floor. These findings are the same as those for the 2009 audit. Rocla noted that regular inspections are undertaken of the quarry by DPI and no issues regarding the roads have been raised. Rocla also noted that all roads have been designed to relevant safety guidelines.

Recommendation:

It is recommended that Rocla confirm DP&E and DPI are satisfied with the works undertaken to comply with this condition.

Schedule 3, Condition 29 – Administrative Non-compliance

The Applicant shall provide sufficient parking on-site for all quarry-related traffic, in accordance with Council's parking codes, and to the satisfaction of the Director-General.

Sighted the parking area adjacent to administration buildings, with it noted that there are fifteen (15) spaces provided for light vehicles; 10 staff and 5 visitors. It is considered there is adequate parking space, with the Council code for parking (Development Control Plan) not having any specific controls that would relate to the quarry). However, it is noted that evidence of the Director-General's satisfaction was not provided during the audit; resulting in a non-compliance.

Recommendation:

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.

Schedule 4, Condition 1 – Non-compliance

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 shall notify the Director-General 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.

No evidence was provided to demonstrate that this condition was satisfied when noise exceedances were identified during the routine quarterly noise monitoring program (refer to commentary for Schedule 3, Condition 2).

Recommendation

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.

Schedule 5, Condition 1(f) – Administrative Non-compliance

Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:

- e) be updated within 3 months of the completion of each Independent Environmental Audit.**

The EMS was not updated within 3 months of the last IEA and there was no evidence provided that a review of the need to make changes was undertaken. It is noted that the previous IEA did not make any specific recommendations for the update of the EMS.

Recommendation:

It is recommended that as Rocla is required 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.

Schedule 5, Condition 6A – Administrative Non-compliance

Within three months of:

- a) the submission of an AEMR under condition 4 above;**
- b) the submission of an incident report under condition 12 above;**

- c) the submission of an audit under condition 5 above; or
- d) any modification to the conditions of this consent (unless the conditions require otherwise),
- e) The Applicant shall review, and if necessary revise, the strategies, plans and programs required under this consent to the satisfaction of the Director-General.

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

No evidence was provided that these required reviews were undertaken. No formal process for this required review process is in place. It was stated during the site inspection that review of strategies, plans and programs is discussed; however, there was no process in place and no evidence that a review occurred could be provided. It is noted that Rocla indicated the review of some management plans was discussed in a meeting of the CCC and it was decided that those management plans didn't need updating; however, no evidence could be provided to verify this and Rocla advised that not all plans were discussed.

Unless otherwise agreed with DP&E, all plans should be reviewed within 3 months of this audit as required by this condition. The outcomes of this review should be documented.

Recommendation:

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.

Schedule 5, Condition 10 – Administrative Non-compliance

Following the commencement of development on site under this consent the Applicant shall:

a) Make the following information publicly available on its website:

- Approved strategies, plans or programs;
- A complaints register, updated on a quarterly basis;

b) Keep this information up to date.

Strategies, plans and programs required by DA 94-4-2004 are available on the Rocla website; however, it is noted that the Air Quality Monitoring Program (AQMP) and Environmental Monitoring Program (EMP) have been updated but the updated versions are not on the web site.

In addition, the complaints register available on the Rocla website is for the start of 2011 to the end of 2012; with complaints for 2009, 2010 and 2013 not available.

Recommendations:

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.

3.3 Project Approval (PA06_0278)

Works under Project Approval (PA06_0278) had not commenced at the time of the site audit as the approval was subject to challenge in the NSW Land and Environment Court. Therefore a full audit against the requirements of the project approval was not possible as it was not in force, no works permitted by it had commenced and the specific compliance and environmental management requirements (e.g. new management plans etc) were not triggered and/or were not yet due. However, as requested by DP&E with regard to the audit scope, a general review was undertaken of the Project Approval conditions to identify if any of the performance aspects would potentially not be satisfied by the current level of performance on the site.

It is noted that there are a number of new requirements in the Project Approval that have not previously applied to the site. The majority of these would require new actions to be implemented to achieve compliance. Rocla will need to address these new requirements once the Project Approval is commenced.

Most of the compliance issues noted above in regard to management plans also apply to the Project Approval. The new plans prepared to satisfy the requirements of the Project Approval should address these requirements.

Other compliance issues related to the 2004 development consent that would also apply to the Project Approval if currently in force included:

- reporting of annual production data not being done using the relevant DPI form;
- the past noise criteria exceedances and associated lack of compliance notifications and reporting would also be issues under the new Project Approval conditions; and
- the provision of publically available material; specifically the update of complaints data on the website.

In addition, potential issues were identified in relation to the following conditions:

Condition 15 of Schedule 3 – The Proponent shall not discharge any water from the quarry or its associated operations, except as may be expressly provided by an EPL.

As discussed in **Section 3.4** below, during higher rainfall periods water from the site water management system overflows off site. This is consistent with the water management system as outlined in the SWMP. Sufficient evidence was not provided during the audit to

demonstrate that sufficient control over site water quality is maintained at all times so that any overflows from the site water management system would comply with Section 120 of the *Protection of the Environment Operations Act 1997*. No evidence of an overflow of the system exceeding Section 120 was identified, however, the water quality in the dam which forms the overflow point was noted on occasion to have water quality that would not comply. There is no active discharge and no discharge approved under the EPL.

As recommended in **Section 3.4**, the SWMP should be revised to address this issue.

Condition 18 of Schedule 3 - The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of extraction operations on site to match its available water supply, to the satisfaction of the Director-General.

As discussed in **Appendix 3**, Rocla has obtained several groundwater licences for the Calga Quarry and has sufficient water allocated for most stages of the operation. However, the need for further licences for the peak inflow stage of the quarry will need to be monitored to ensure that sufficient allocation is held for all periods, or the operation adapted to suit the available allocations.

3.4 Environment Protection Licence

Rocla is required to and does hold an EPL for its Calga Sand Quarry operation as it conducts an activity that requires a licence under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPL outlines Rocla's responsibilities and the environmental performance standards it is required to meet, being:

- limit conditions;
- operating conditions;
- monitoring and recording conditions; and
- reporting conditions.

Generally, Rocla demonstrated that it was complying with the conditions of its EPL; however, several non-compliances were identified and an observation made related to management of water on site. A summary of issues identified is provided below.

Condition A4.1 – Non-compliance

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.

Rocla could not provide a copy of the licence application material and therefore this could not be audited. It is noted that a primary crusher was being used periodically on the site and that this was not part of the development approved under the consent and was therefore unlikely to be covered by the EPL application.

Condition L1 – Observation

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.

During higher rainfall periods water from the site water management system overflows off site. This is consistent with the water management system as outlined in the SWMP, however, sufficient evidence was not provided during the audit to demonstrate that appropriate control over site water quality is maintained at all times so that any overflows from the site water management system would comply with Section 120 of the *Protection of the Environment Operations Act 1997*. No evidence of an overflow of the system exceeding Section 120 was identified, however, the water quality in the dam which forms the overflow point was noted on occasion to have water quality that would not comply if an overflow occurred at this time. There is no active discharge and no discharge approved under the EPL.

Recommendations:

It is recommended that the SWMP be 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.

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.

Condition L6.1 – Non-compliance

Noise from the premises must not exceed the following limits at the locations and times specified:

Location (As shown on Figure 4.5 of the EIS for the Calga Sand Quarry Extension dated May 2004)	Noise Limit (L _{Aeq} , 15 minute)			Noise Limit (L _{A1} , 1 minute)
	Day (7am-6pm)	Evening (6pm-10pm)	Night (10pm-7am)	Night (10pm-7am)
Residence 3	41	35	35	45
Residence 4	40	35	35	45
Residence 5	39	35	35	45
All Other Residences	35	35	35	45

Noise exceedances for the noise impact assessment criteria have been recorded during the period covered by the audit. The review of noise monitoring results identified the following noise exceedances:

- April 2010 Continuous Monitoring BarnOwl Report (Walkabout Wildlife Park)
 - Exceedances of 35 dB(A) day time criteria when processing the coarsest-grade sandstone.
- August 2010
 - 2 dB(A) exceedance at King residence (CN-2) for day time.

The 2010 AEMR reported:

- *'The criteria relevant for attended monitoring were complied with on all occasions with the exception of CN-2 where the noise level exceeded the noise criterion by 2dB(A). A marginal exceedance of 2dB(A) is generally considered to be within the acceptable tolerance for compliance purposes.'*;
- *'There are no noise-related issues requiring follow up during 2011'; and*
- *'The annual return covering the reporting period (i.e. 24 July 2009 to 23 July 2010) reported no non-compliances.'*
- August 2011
 - 2 dB(A) exceedance at Gazzana residence (CN-1) for day time.
- December 2011
 - 3 dB(A) exceedance at Gazzana residence (CN-1) for day time;
 - 6 dB(A) exceedance at King residence (CN-2) for day time;
 - 1 dB(A) exceedance at Kashouli residence (CN-3) for day time;
 - 1 dB(A) exceedance at Townsend residence (CN-4) for day time.

The 2011 AEMR reported:

- *'The criteria relevant for attended monitoring were complied with at all monitoring locations except at two locations on 16 December 2011. On that occasion, the criteria were exceeded by between 3dB(A) and 6dB(A) for the period of time whilst the muffler on a pump operating in Cell 3/2b was not fully effective. A new muffler was purchased and subsequent testing has shown that noise compliance levels are now being met. It is noted that during the period of time when the defective muffler was in use, no complaints were received.'*;
- *'Compliance with noise criteria continued throughout 2011 with the exception of the incident on 16 December 2011. The cause of this short term non-compliance has since been remedied with the installation of a new muffler on the water pump which caused the exceedances.'*; and
- *'The annual return covering the reporting period (i.e. 24 July 2010 to 23 July 2011) reported no non-compliances.'*
- June 2012
 - 3 dB(A) exceedance at Gazzana residence (CN-1) for day time;
 - 1 dB(A) exceedance at Kashouli residence (CN-3) for day time.
- July 2012
 - 7 dB(A) exceedance at King residence (CN-2) for day time.

The 2012 AEMR reported:

- *'Exceedences were recorded at CN-1 and CN-3 on 27 June 2012 and at CN-2 on 6 July 2012. With these exceedences being between 1 dB(A) and 7 dB(A). These exceedences were attributed to a pump operating in Cell 3/2b which supplies water to the wash plant. Following this monitoring acoustic insulation was installed around the pump which resulted in subsequent monitoring indicating that compliance levels are now being met.'*;
- *'Compliance with noise criteria continued throughout 2012 with the exception of the incident on 27 June and 6 July. The cause of this non-compliance has since been remedied with the installation of acoustic insulation on the water pump which caused the exceedences.'*; and
- *'The annual return covering the reporting period (i.e. 24 July 2011 to 23 July 2012) reported no non-compliances.'*
- February 2013
 - 1 dB(A) exceedance at Walkabout Wildlife Park for day time.
- March 2013
 - 2 dB(A) exceedance at King residence (CN-2) for day time.
- July 2013
 - 2 dB(A) exceedance at Gazzana residence (CN-1) for day time.

The 2013 AEMR has not been sighted.

The above noise exceedances were non-compliances with the limits in the EPL. As discussed in **Section 3.2**, although Rocla responded to these exceedances by implementing a range of on-site management controls and these responses were appropriate, these non-compliances were not appropriately managed from a compliance perspective. For example, the EPL Annual Returns for the respective reporting periods did not identify the noise exceedances as non-compliances with the EPL conditions and no evidence was provided that the EPA was notified at any stage that these exceedances occurred. The exceedances were reported in the AEMRs.

Recommendation:

It is recommended that Rocla develop a noise compliance management procedure to assist site personnel to appropriately report and respond to exceedances of noise limits on both the development consent and EPL.

Condition M5.2 – Non-compliance

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.

While Calga Sand Quarry operates a telephone complaints line no evidence was provided of Rocla having advertised this complaints line. Searches of both the white pages and yellow pages did not identify the listing of the Calga Quarry Complaints line.

Recommendation:

It is recommended that Rocla ensure the telephone complaints line is listed and advertised, to ensure the community knows how to make a complaint.

Condition R1.1(b) – Non-compliance

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

(a) a Monitoring and Complaints Summary.

Condition R1.8 – Non-compliance

Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed

While the EPL Annual Returns sighted (2008/2009, 2009/2010, 2010/2011, 2011/2012, and 2012/2013) included a complaints summary, they did not include a summary of monitoring results. As noted above, the Annual Returns did not identify that the EPL noise limits had been exceeded on occasion.

Recommendations:

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.

4.0 Site Environmental Management Plans

Rocla has developed a number of environmental management strategies, plans and monitoring programs for the development in accordance with the relevant requirements of the Development Consent. These documents address specific impacts associated with the development, such as air quality, and reflect the requirements detailed in the Development Consent. The strategies, plans and programs required to be prepared include:

- Environmental Monitoring Program;
- Noise Monitoring Program;
- Air Quality Monitoring Program;
- Site Water Management Plan, including:
 - Surface Water Management Plan;
 - Groundwater Monitoring Program;
 - Groundwater Contingency Strategy; and
 - Erosion and Sediment Control Plan.
- Rehabilitation and Landscape Management Plan; and
- Environmental Management Strategy.

Condition 5(c) of Schedule 5 of the Development Consent requires that the audit assess the environmental performance of the development against any strategy, plan or program made under the Development Consent or other approval. Condition 5(e) of Schedule 5 of the Development Consent also requires that the audit review the adequacy of any strategy, plan or program made under an approval document.

The audit found that the management strategies, plans and programs that had been prepared for the development were generally adequate and prepared in accordance with the relevant compliance requirements. Rocla was found to be generally operating in accordance with those management plans and monitoring programs. However, the key non-compliance issues in relation to the Calga Sand Quarry relate to the review of management plans and monitoring programs. It is noted that several of the recommendations made in regard to the previous audit have not been addressed.

Condition 10(a) of Schedule 5 of the Development Consent requires Rocla to ensure that a copy of any approved management plans, programs or strategies for the site are made publicly available on the Rocla website. It was noted during the audit that all strategies, plans and programs required by the Development Consent are publicly available on the Rocla website. Condition 10(b) of Schedule 5 of the Development Consent requires Rocla to keep this information up to date. It was noted during that the Air Quality Monitoring Program (AQMP) and Environmental Monitoring Program (EMP) had been subject to updates and the versions available on the Rocla website are out of date.

Condition 6A of Schedule 5 requires that all plans are reviewed, and updated as required, within 3 months of the completion of the independent environmental audit and of lodgement of an AEMR. There was no evidence provided that this was completed following the last audit or following lodgement of the AEMRs. The review following this audit should coincide with the finalisation of the management plans required under the new Project Approval so that the issues identified in this audit can be addressed as part of preparing the new management plans.

As previously noted, PA06_0278 requires the preparation of a number of management plans, programs and/or strategies. However, as these documents have not been produced and the due date for submission for approval of these documents is the end of June 2014; these documents could not therefore be assessed as part of this audit.

The content and implementation of the management plans was assessed and reported as part of the audit of the 2004 development consent. Various issues relating to the management plans were discussed in **Section 3.2** as part of the audit against the 2004 development consent. The audit findings relating to the Noise Monitoring Program (NMP) and groundwater related plans are discussed in **Sections 4.1** and **4.2** respectively. Other key audit findings in relation to management plans included:

- the dust management controls and monitoring programs described in the Air Quality Management Plan were observed to be being implemented during the site inspection;
- it was noted on site that erosion and sediment controls had been implemented. Observations made by the auditors during the site inspection did not identify any significant areas of erosion or sedimentation on site;
- monitoring is being undertaken in accordance with the approved monitoring program and management plans;
- rehabilitation was being undertaken generally following the Rehabilitation and Landscape Management Plan noting that only small areas of rehabilitation have been completed to date. Rocla has implemented a program of weed management and planting of native species to improve rehabilitation quality; and
- no significant pest issues were observed during the site inspection.

With regard to the Calga Sand Quarry Environmental Management Strategy (EMS), it was prepared in February 2006 and the newly granted Project Approval provides a timely opportunity to undertake a full review of this strategy to ensure it remains current and appropriately reflects current requirements and expectations.

4.1 Noise Monitoring Program

The NMP was prepared in 2005 in accordance with DA 94-4-2004: *Schedule 3 – Specific Environmental Conditions, Condition 7*. The NMP satisfies the requirements of *Schedule 3 – Specific Environmental Conditions, Condition 7* with respect to the preparation of the NMP.

The NMP addresses the assessment criteria for the site, the monitoring program (including in the event of exceedances or complaints), and the reporting procedures (for both monitoring results and incidents). The NMP provides specific information on:

- the noise impact assessment criteria for the quarry (Sections 3.2 and 4.1);
- the measures which will be employed to mitigate the environmental effects of noise from the mine on surrounding neighbours (Section 3.3);
- the proposed attended noise monitoring program (Sections 4.2 to 4.5); and
- the mechanism whereby noise complaints will be dealt with quickly and effectively (Section 3.7).

In Section 3.3 of the NMP, Rocla proposed the implementation of a range of design features to minimise the potential for noise impacts at residential receivers. Based on the site inspection, it is understood all of these actions have been implemented.

Section 3.3 of the NMP also outlines operational procedures that Rocla has adopted to control noise at surrounding residences. As with the design features, it is understood all of these actions have been implemented, however, the effectiveness of the operational procedures is dependent on the ongoing maintenance of each noise management/mitigation strategy. Specifically, no evidence has been sighted to demonstrate operational procedure (iii) 'ensure sound power levels of each item [of equipment] are at or below the level nominated in Table 3.2.' has been addressed.

Recommendation

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.

In the case of an exceedance of noise criteria Section 3.7 of the NMP states that following confirmation of an exceedance (i.e. ensuring no errors in recording or analysing the result) the affected landowner, Secretary of the DP&E and the EPA (noted as OEH in the plan) will be notified of the exceedance. In addition, exceedance of noise criteria will require the preparation of a corrective action plan, with the affected landowner, Secretary of the DP&E and the EPA to be provided detailed information as to the proposed corrective actions to be undertaken. General corrective actions to be undertaken in the event of an exceedance of noise criteria are outlined in Section 3.7 of the NMP.

The noise monitoring has been undertaken on a quarterly basis in accordance with the Development Consent and the NMP. However, the reporting requirements outlined in Schedule 4, Condition 1 of the Development Consent and measures outlined in Section 3.7 of the NMP have not been undertaken in the event of exceedances. It is noted that the majority of exceedances were between 1 to 3 dB above the noise impact assessment criteria. An exceedance of 1 to 2 dB is generally considered marginal and lies within acceptable tolerances outlined in Section 11 of the NSW *Industrial Noise Policy* (EPA, 2000). Nevertheless, an exceedance of 1 to 2 dB should be reported to ensure compliance with Schedule 4, Condition 1 of the Development Consent.

A number of the exceedances recorded were 3 dB or more above the noise impact assessment criteria. Section 3.7 of the NMP outlines the following response protocol:

- confirmation of the exceedance;
- two notification process are provided, one for exceedances less than 5 dB over criteria and one for exceedances more than 5 dB over criteria;
- corrective actions including re-monitoring to confirm non-compliance and the preparation of a comprehensive plan of action to return the operation to compliance;
- reassessment, ongoing consultation and the development of appropriate agreements with affected parties;
- notification of the affected land owner;

- initiation of acquisition proceedings; and
- reporting.

During the audit there was no evidence provided to demonstrate that this protocol was followed as a result of a reported noise exceedances.

Recommendation

It is recommended Rocla review the response protocol and ensure the protocol is used every time a noise exceedance is identified.

Section 3.5 of the NMP includes details on the Management of Complaints. During the period covered by the audit, Rocla investigated and/or implemented the management and control measures identified in the NMP in accordance with the Complaints Management Protocol. This was demonstrated through documentation of the activities undertaken in the Complaints Register. For example, during the 2011/2012 period, all 18 complaints received were about noise, and subsequently the actions taken by Rocla were recorded in the Complaints Register.

Section 4 of the NMP provides a detailed procedure for the attended noise surveys including the monitoring parameters, the frequency of monitoring and the data recording and reporting requirements. Notwithstanding this, the auditor identified there is opportunity for improvement in the presentation of the monitoring data to improve the transparency of the noise monitoring and reporting processes to assist in the community understanding of noise impacts. This is due to the fact that while the NMP outlines the methodology for conducting the attended noise monitoring, it does not provide any information on the format of, and the information to be contained within, the noise monitoring report. Typically, attended noise monitoring collections information on:

- the time and duration of noise events, noise sources, instantaneous noise levels and the frequency range of identified site noise sources;
- extraneous noise sources so that they can be filtered from the measured signal;
- weather conditions (generic, not specific in location of data);
- monitoring locations and times of measurement; and
- details regarding the plant configuration.

Other relevant information that would be collected, but is not specified in the NMP, includes:

- meteorological data (wind speed and wind direction 10 metres above ground level) from the relevantly located weather station plus local data on wind direction, wind speed, air temperature and relative humidity;
- measured noise levels (LA1, LA90 and LAeq) measured in A- and C-weighting over a 15 minute interval (Refer to EPL 11295 Clauses L6.1 and L6.2); and
- field notes identifying quarry related sources that may lead to sleep disturbance.

Recommendation

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 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.

The noise monitoring reports provide simple tables of noise monitoring results and information on the operational noise sources and extraneous or dominant noise sources. The information is concise and reasonably informative. The noise monitoring reports do not provide information on the overall ambient noise level or underlying background noise level. The NMP does not call for the collection of the time and duration of noise events, the details of individual noise sources, and instantaneous noise levels or noise parameters to be collected other than the LAeq,15minute and LA1,1minute noise levels.

Recommendation

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.

Following the review of the NMP, the auditor concluded that the NMP satisfies the requirements of *Schedule 3 – Specific Environmental Conditions, Condition 7 Noise Monitoring Program*. It was noted that the NMP does not include a review process for the Plan.

Recommendation

It is recommended Rocla review the NMP and include a regular review process for the NMP.

4.2 Groundwater

4.2.1 Groundwater Monitoring Program

The Groundwater Monitoring Program is outlined in Section 6.0 of the SWMP and outlines:

- a program to collect detailed baseline data;
- groundwater impact assessment criteria for monitoring bores and privately-owned bores; and
- a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater impact assessment criteria.

However, as noted in **Section 4.2**, impact assessment criteria for GDEs are not included in the Groundwater Monitoring Program. Reference is made to annual inspections of vegetation as part of a Rehabilitation and Landscape Management Plan; however, this plan does not include impact assessment criteria for GDEs (or even identify GDEs that require monitoring) and does not consider impacts to groundwater dependent surface water bodies.

Recommendation:

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.

4.2.2 Groundwater Contingency Strategy

As noted in **Appendix 3**, it remains unclear whether the requirement to develop a Groundwater Contingency Strategy has been fully complied with. While the elements of a groundwater contingency strategy are present in the SWMP, the outcome of the 2009 IEA was that the contingency strategy was pending approval. The auditor sighted a document, dated January 2012, entitled 'Rocla's response to Non-Compliant Conditions with Development Consent DA 94-4-2004', in which Rocla's response to this non-compliance was indicated as 'Rocla respectfully requests the Director-General's satisfaction with the submitted document'. No evidence was provided during this audit that DP&E had responded to this request. Additionally, it is unclear if the 'submitted document' referred to in this response is the SWMP, or another document. Accordingly, while the intent of the condition is considered to be present in the SWMP, no evidence has been provided that it has been approved. It is noted that a nearly identical condition is included in PA06_0278, Schedule 3, Condition 20(b)(iv) and it is therefore considered likely that this issue will be resolved as part of the development of the new management plans under the new Project Approval.

Recommendation:

Prepare and obtain approval for an appropriate Groundwater Contingency Strategy as part of the development of management plans required by the Project Approval.

5.0 Environmental Performance

The audit found that overall, there was a generally good level of environmental performance at the Calga Sand Quarry. In terms of on-site environmental management, site management indicated a good understanding of the key environmental issues and were focussed on implementing measures that would minimise impacts. A wide range of environmental management measures were in place at the quarry, including the key controls that would be expected at a modern quarry site relating to air quality, noise, vegetation management, water management, waste management, equipment maintenance and chemical storage.

Appropriate management responses were implemented to issues that arose during the period covered by the audit including to community complaints regarding noise and groundwater. Site personnel indicated a sound practical understanding of these issues from a quarry operator's perspective and a genuine intent to implement appropriate measures.

The audit also found, however, that the approach to technical compliance management could be improved at the site. The audit identified a number of 'technical/paperwork' related compliance issues which demonstrate that whilst the quarry personnel are actively managing environmental impacts, they are not as focussed on managing technical compliance aspects of the quarry operations. This is likely to be in part related to resource availability as the quarry manager has a very broad role which includes overall management of the quarry in addition to day to day environmental management.

In regard to implementing environmental compliance management systems as part of implementing the recently approved quarry extension, it is recommended that Rocla clearly identify the resources required to implement a practical and streamlined management system that will assist site personnel to provide for future compliance. Appropriate resources will need to be provided to assist site personnel to effectively manage environmental compliance.

6.0 Conclusion

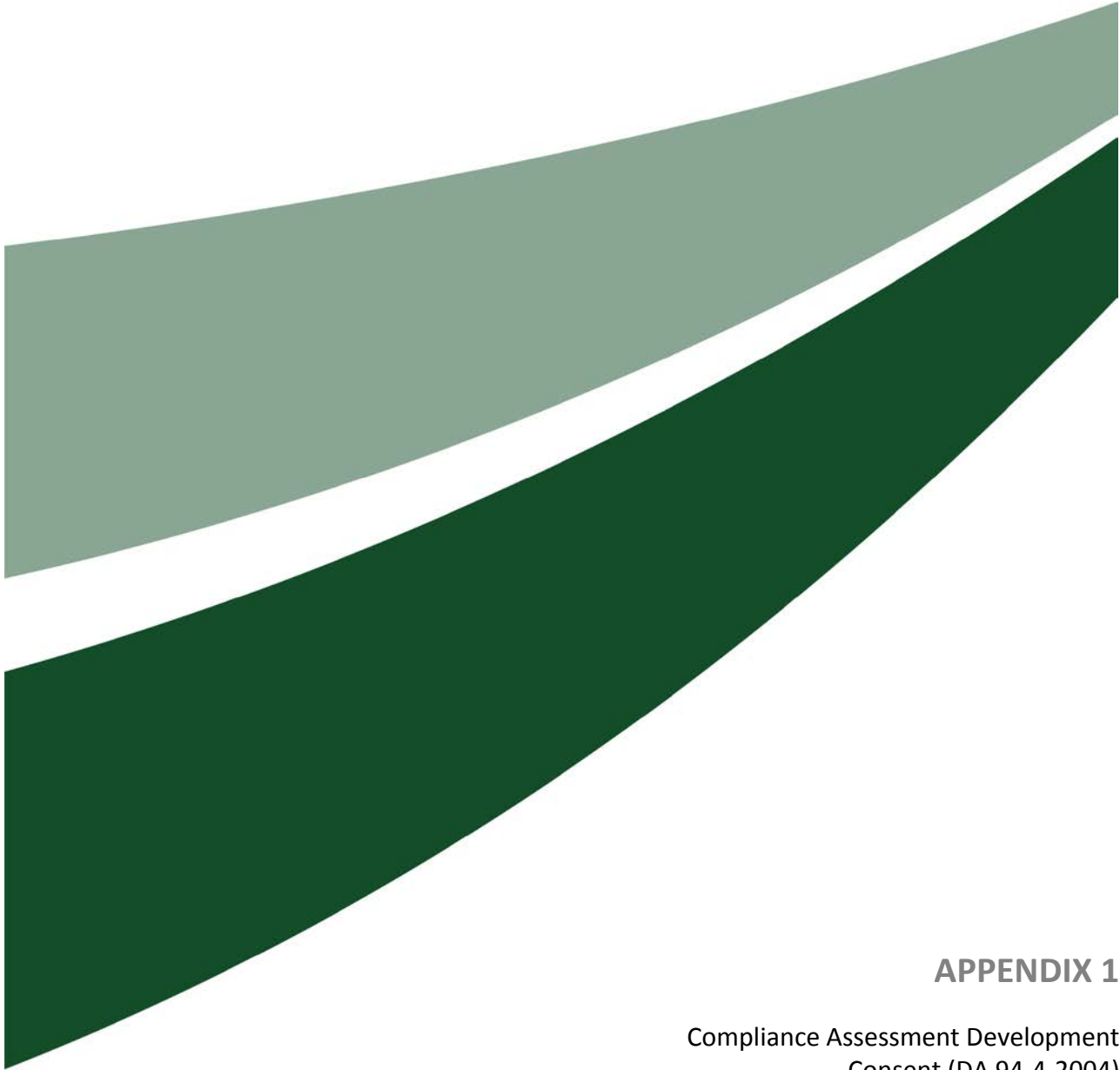
The audit found several non-compliances with the relevant approvals and licences that apply to the Calga Sand Quarry. Many of these issues were of a more technical nature relating to formal compliance management whilst the overall on-site environmental management performance of the site was found to be generally good.

The audit included technical specialists that assessed groundwater and noise related performance at the quarry as these are both key issues for the site and have been the subject of community complaints.

In general, groundwater impacts were found to be consistent with those predicted; however, several technical non-compliances were identified relating to groundwater management plans and programs.

In terms of noise performance, periodic exceedances have occurred of noise limits over the past five years with site personnel found to understand the key drivers for adverse impacts and focussed on managing these impacts. Many of these issues appear to have been resolved through relocation of the quarry wash plant and management of site equipment. Ongoing vigilance will be required to continue to effectively manage noise impacts. The audit also found that noise exceedances were not appropriately managed from a compliance reporting perspective and recommendations have been made to address this issue in the future.

The audit also found that the implementation of the recently granted Project Approval and accompanying new environmental management systems and approaches provides the opportunity to upgrade the overall environmental compliance system for the site. Effective implementation of these new systems and provision of appropriate resources by Rocla to implement these systems will allow full compliance to be achieved for the new approval.



APPENDIX 1

Compliance Assessment Development
Consent (DA 94-4-2004)

Development Consent No. 94-4-2004						
Approval Dated 28 October 2005						
Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments	
2	GENERAL ADMINISTRATIVE CONDITIONS					
	Obligation to Minimise Harm to the Environment					
	1	The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	C	The environmental controls in place to minimise harm to the environment are generally appropriate.		
	Terms of Approval					
	2	The Applicant shall carry out the development in accordance with the:		C		
		(a) DA 94-4-2004;		NC	Primary crusher operating at the site as noted in the site inspection.	Primary crusher operating at the site. This is not consistent with the development as outlined in the EIS. Rocla has noted that it submitted a modification that would provide for use of this crusher that has not been determined and that it has also discussed an application to vary the EPL with the EPA. Rocla has also noted that this non-compliance will be rectified by the commencement of Project Approval (PA06_0278), which is currently subject to an appeals process.
		(b) EIS titled <i>Environmental Impact Statement for the Proposed Calga Sand Quarry Extension</i> , dated May 2004;				
		(c) Amendment Report titled <i>Amendment to a Proposal Submitted as Development Application (DA 94-4-2004) for an Extension to the Calga Sand Quarry</i> , dated June 2005; and				
		(d) modification application DA 94-4-2004 - MOD 1 and the accompanying Environmental Assessment prepared by Rocla Materials Pty Ltd and dated January 2012; and		C		
	(e) conditions of this development consent.		NC	Non-compliances as noted below	See comments against relevant Development Consent Conditions below.	
	3	If there is any inconsistency between the above, the most recent document or the conditions of this consent shall prevail to the extent of the inconsistency.		Noted		
	4	The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:				
		(a) any reports, plans or correspondence that are submitted in accordance with this development consent; and		C	An independent operational noise assessment was undertaken in 2013 following the receipt of a complaint in relation to the operations at DP&E and the formal directive from DP&E requesting an independent operational noise assessment be completed. In addition a letter in relation to groundwater from a community group was provided to Calga Quarry by DP&E, with a response from Rocla provided to DP&E 2 October 2013	Correspondence from the DP&E requesting the independent noise assessment was not provided during the audit for verification. However, an email was sighted from Kane Winwood, Team Lead of Mining Projects at the DP&E, approving Renzo Tonin to complete the independent noise assessment.
		(b) the implementation of any actions or measures contained in these reports, plans or correspondence.		NC	Independent noise assessment undertaken as outlined above. In correspondence dated 18 November 2013, Rocla committed to undertake a census of all groundwater bores within 500 metres of the extraction area. This audit has not been completed.	It is recommended that Rocla undertake the census of all groundwater bores within 500 metres of the extraction area as committed.
	Limits on Approval					
	5	This consent shall lapse on 1 July 2030.		N/T		
		<i>Note: Conditions of this consent may require activities to be carried out by the Applicant beyond the period of approval for extraction, processing and rehabilitation on the site.</i>		N/T		
	6	This consent is granted for Stage 3 only, as described in the Amendment Report, and shown conceptually on the plan in Appendix 1.		C		
	7	The Applicant shall not transport more than 400,000 tonnes of product per year from the site.		C	2008-2012 AEMR's indicate compliance with this condition.	The 2013 AEMR was not available at the time of the audit as it is in the process of being prepared.
	Structural Adequacy					
	8	The Applicant shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.		C	Construction certificates for a new wash plant and three electricity enclosures sighted. Interim occupation certificates sighted. However, it was stated during the site inspection that final occupation certificates would not be provided until completion of works in the Stage 2 area.	
		<i>Notes:</i>		N/T		
		<ul style="list-style-type: none">Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of development.				
	Demolition					
	9	The Applicant shall ensure that all demolition work is carried out in accordance with AS 2601-2001: <i>The Demolition of Structures</i> , or its latest version.		C	During the site inspection it was stated that the original quarry occupiers house was demolished in 2010. Approval from Gosford City Council was obtained through a Demolition Application and using a licenced contractor. Letter from Bliss Demolition, a fully licenced and insured contractor, sighted for demolition of the old wash plant and asbestos removal.	
	Protection of Public Infrastructure					
	10	The Applicant shall:				
		(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and		N/T	P. Slough pers. Comm.	Not triggered.
		(b) relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.		N/T	P. Slough pers. Comm.	Not triggered.
	Operation of Plant and Equipment					
	11	The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are:				
		(a) maintained in a proper and efficient condition; and		C	Daily pre-start checklist was sighted during the site inspection for equipment. A repair schedule was also sighted detailing the equipment, date reported, the problem/issue, action required, the reference document, date due, any comments, supervisor sign off and the date completed. During the sight inspection it was indicated that machinery undergo general maintenance every 250 hours.	It was noted that the maintenance program was still being developed for the new plant (P. Slough pers. Comm.)
		(b) operated in a proper and efficient manner.		C	Sighted certificates of attendance in training, company/site induction, as well as training records for use of excavators, front end loaders, dump trucks and dozer.	
3	GENERAL EXTRACTION AND PROCESSING PROVISIONS					
	Identification of Boundaries					
	1	Prior to carrying out any development, the Applicant shall:				
		(a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction;		C	Boundary marked by Barry Hunt and Associates 2/2/06. Sighted DP&E letter of 13/1/06 stating that this condition had been satisfied. Sighted survey plans (3052LOE and 3052CELLS, Prepared by Barry Hunt and Associates 2005).	
		(b) submit a survey plan of these boundaries to the Director-General; and		C	DP&E letter of 13/1/06 stating that this condition had been satisfied during previous audit	
		(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.		C	Sighted boundary markers during site inspection on 27 February 2014	
		<i>Note: The limit of extraction includes the area described in the documents listed in condition 2 of schedule 2, and shown conceptually on the plan in Appendix 1.</i>		Noted		

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments																									
NOISE																														
Impact Assessment Criteria																														
2	The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 1.		NC	A number of exceedances were recorded during the audit period, these include: - Quarter 3, 2010: Exceedance of 2 dB at the King residence; - 24 August 2011: Exceedance of 2 dB at the Gazzana residence; - Quarter 4, 2011: Exceedance of 3 dB at the Gazzana residence; - Quarter 4, 2011: Exceedance of 6 dB at the King residence; - Quarter 4, 2011: Exceedance of 1 dB at the Kashouli residence; - Quarter 4, 2011: Exceedance of 1 dB at the other residences. - 27 June 2012: Exceedance of 3 dB at the Gazzana residence; - 27 June 2012: Exceedance of 1 dB at the Kashouli residence; - 6 July 2012: Exceedance of 7 dB at the King residence. - Quarter 1, 2013: Exceedance of 2 dB at the King residence; and - Quarter 2, 2013: Exceedance of 2 dB at the Gazzana residence. - power screen has since been moved from it's site in Cell 3/6 into the Stage 2 area.	It was noted during the site inspection that the water transfer pump 5 (TP5) and the power screen were driving exceedances.																									
	<p><i>Table 1:-Noise impact assessment criteria dB(A) LAeq (15 min)</i></p> <table><thead><tr><th>Residential Location</th><th>Day</th><th>Evening</th><th>Night</th><th>Night- (LAeq (1min))</th></tr></thead><tbody><tr><td>Gazzana (Residence-3)</td><td>41</td><td>35</td><td>35</td><td>45</td></tr><tr><td>King</td><td>40</td><td>35</td><td>35</td><td>45</td></tr><tr><td>Kashouli</td><td>39</td><td>35</td><td>35</td><td>45</td></tr><tr><td>Other residences</td><td>35</td><td>35</td><td>35</td><td>45</td></tr></tbody></table>				Residential Location	Day	Evening	Night	Night- (LAeq (1min))	Gazzana (Residence-3)	41	35	35	45	King	40	35	35	45	Kashouli	39	35	35	45	Other residences	35	35	35	45	To manage noise impacts TP5 was fitted with an acoustic exhaust, was enclosed in a shed, and acoustic soundproofing. Use of TP5 was ceased in November 2013.
	Residential Location	Day			Evening	Night	Night- (LAeq (1min))																							
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Kashouli	39	35	35	45																										
Other residences	35	35	35	45																										
			To manage the impacts of the power screen, it was relocated to the former Stage 2 area.																											
			Rocla consider that noise issues are now under control and have indicated that at commencement of extraction Cell 3/5 (in proximity of private residence) dozer use will be avoided.																											
			In response to a complaint from the owner of Walkabout Park, an investigation was undertaken between 26 February to 5 March 2010, to determine the quarry's compliances with noise emissions. The investigation concluded that at most times during the quarry's operational hours, the level of LA90 background noise at the Barnard residence is already higher than the 35dB(A) criterion of development consent DA 94-4-2004. However, the level of ambient noise at the Barnard residence is dictated by traffic carried on the F3 Motorway and not by noise from the direction of the quarry.																											
			Rocla noted that the noise impact assessment criteria for Walkabout Wildlife Park in the new Project Approval (PA06_0278) have been updated to 43 dB(A) and that recent monitoring results indicate compliance with this criteria.																											
			It is recommended that Rocla develop a noise compliance management procedure to assist site personnel to appropriately report and respond to exceedances of noise limits on both the development consent and EPI																											
Notes:																														
• These criteria do not apply if the Applicant has an agreement with the affected land owner/s to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement																														
• Noise generated by the Calga Sand Quarry is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.																														
Land Acquisition																														
3	If the noise generated by the development exceeds the criteria in Table 1 by more than 5 dB(A), then the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8-10 of schedule 4, unless there is a valid noise agreement between the Applicant and an affected landowner.		C	No requests for acquisition received. P. Slough pers.com.																										
Noise Mitigation																														
4	Prior to carrying out any extraction, the Applicant shall construct an acoustic barrier in accordance with the quarry design in the Amendment Report (as reproduced in Appendix 1), to the satisfaction of the Director-General. The construction of the acoustic barrier must be completed within 5 working weeks.		C	It is noted that the previous audit indicated DP&E have indicated compliance with this condition - the site inspection confirmed the these bunds remain in place. In addition, the eastern bund has been extended down to the southern boundary to assist in noise mitigation.																										
Operating Hours																														
5	The Applicant shall comply with the operating hours in Table 2:		C	It was noted during the site inspection that in the past, on occasion, trucks were allowed to enter the site before 5 am. However, no truck loading or delivery of product occurred before 5am and therefore this has been recorded as compliant. Rocla has since put a stop to this practice. It is noted that during the site inspection an email was sighted to Calga Sands Quarry customers stipulating the quarry's hours of operation and requesting customers/truck drivers adhere to the 'no stopping' signage at the entrance to the quarry (i.e. arrive as close to 5 am as possible, but not beforehand).																										
	<p><i>Table 2: Operating Hours</i></p> <table><thead><tr><th>Activity</th><th>Days</th><th>Times</th></tr></thead><tbody><tr><td rowspan="3">Extraction and processing</td><td>Monday – Friday</td><td>7:00 am to 6:00 pm</td></tr><tr><td>Saturdays</td><td>7:00 am to 4:00 pm</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>5:00 am to 10:00 pm</td></tr><tr><td>Saturday</td><td>5:00 am to 4:00 pm</td></tr><tr><td>Sunday and Public Holidays</td><td>Nil</td></tr><tr><td>Maintenance (if inaudible at neighbouring residences)</td><td>Any day</td><td>Anytime</td></tr></tbody></table>				Activity	Days	Times	Extraction and processing	Monday – Friday	7:00 am to 6:00 pm	Saturdays	7:00 am to 4:00 pm	Sunday and Public Holidays	Nil	Delivery and distribution	Monday – Friday	5:00 am to 10:00 pm	Saturday	5:00 am to 4:00 pm	Sunday and Public Holidays	Nil	Maintenance (if inaudible at neighbouring residences)	Any day	Anytime						
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Maintenance (if inaudible at neighbouring residences)	Any day	Anytime																												
<p><i>Note: Construction activities, such as the construction of the acoustic barrier, shall 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.</i></p>		C																												
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		N/T	N/A																										
	(b) emergency work to avoid the loss of lives, property and/or to prevent environmental harm.		N/T	N/A																										
In such circumstances the Applicant shall notify EPA and affected residents prior to undertaking the works, or within a reasonable period in the case of emergency.		N/T	N/A																											
Noise Monitoring Program																														
7	Prior to carrying out any development, the Applicant shall prepare, and subsequently implement, a Noise Monitoring Program for the development, in consultation with EPA, and to the satisfaction of the Director-General. This program must include a combination of attended and unattended noise monitoring, and a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this consent.		C	Sighted Noise Monitoring Program (Report No. 264/26b) prepared by RW Corkery. Sighted DP&E letter of 13/3/06 indicating its satisfaction with this plan.	It was noted during the site inspection that 'quackers' (reversing alarms) have been installed on all gear on site. It is also noted that the noise mgt plan instead says that 3 level alarms will be used. It is recommended that the noise management plan is updated to reflect actual practice on site.																									
				Supplementary information provided 7 May 2009 confirmed compliance with this condition has been achieved:	Section 3.3 of the NMP Operational Procedure (iii) states " ensure sound power levels of each item [of equipment] at or below the level nominated in Table 3.2." . The NMP should be revised to include a schedule for the routine monitoring of the sound power levels of the major items of equipment used on the site																									
				A record of consultation activities undertaken during preparation of the Noise Monitoring Program was provided (compiled by RW Corkery Ref. No. 264/28), which included the following:																										
				• email to Hamish Rutherford of DEC from Alex Irwin of RW Corkery dated 21 November 2005 providing draft Noise and Air Quality Monitoring Programs and requesting the Department's review; and																										
		• letter from Rebecca Scrivener of DEC dated 25 November 2005 stating that DEC is a regulatory authority and as such does not undertake review of management plans.																												
		As this condition requires Rocla to consult with DEC during preparation of the Noise Monitoring Program and evidence of this has been sighted, and the plan has been approved by DP&E, it is considered that Rocla are compliant with this condition.																												

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	Air Quality				
	Impact Assessment Criteria				
	8	The Applicant shall ensure that all reasonable and feasibly 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.	V	The 2008, 2009, 2010, 2011, and 2012 AEMR indicate that all deposited dust levels were within the nominated criteria. Dust controls including water sprays etc noted on site.	It is noted that monitoring at CD-2b ceased after January 2010 due to contamination from motorcycle activity, with CD-2c location replacing CD-2b. It is noted that the AQMP was updated in 2009, with an approval date of 14 October 2009. However, a copy of the updated AQMP was not provided during the audit for verification.
		Notes to Tables:			
		a Total impact (i.e. Incremental increase in concentrations due to the development plus background concentrations due to all other sources):			
		b Incremental impact (i.e. Incremental increase in concentrations due to the development on its own):			
		c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method			
	d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with EPA.				
	Air Quality Monitoring Program				
	9	Prior to carrying out any development, the Applicant shall prepare, and subsequently implement, an Air Quality Monitoring Program for the development, in consultation with EPA, and to the satisfaction of the Director-General. This program must include an air monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.	V	Sighted Air Quality Monitoring Program (Report No. 264/26c, Dec 05) prepared by RW Corkery. Sighted DP&E letter of 13/3/06 approving this plan.	It is noted that the AQMP was updated in 2009, with an approval date of 14 October 2009. However, a copy of the updated AQMP was not provided during the audit for verification.
Supplementary information provided 7 May 2009 confirmed compliance with this condition has been achieved:					
A record of consultation activities undertaken during preparation of the Air Quality Monitoring Program was provided (compiled by RW Corkery Ref. No. 264/28), which included the following: <ul style="list-style-type: none">email to Hamish Rutherford of DEC from Alex Irwin of RW Corkery dated 21 November 2005 providing draft Noise and Air Quality Monitoring Programs and requesting the Department's review; andletter from Rebecca Scrivener of DEC dated 25 November 2005 stating that DEC is a regulatory authority and as such does not undertake review of management plans. As this condition requires Rocla to consult with DEC during preparation of the Air Quality Monitoring Program and evidence of this has been sighted, and the plan has been approved by DP&E, it is considered that Rocla are compliant with this condition.					
Note: Initially, this program should concentrate on monitoring the dust deposition impacts of the development. However, in time, it may be expanded to include other pollutants.	Noted				
SURFACE AND GROUNDWATER					
	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.	ANC	An EPL is held for the quarry A Part 5 Water Access Licence (WAL) (No. 20WA211660) was issued for Calga Sand Quarry 6 July 2011. In addition, WALs 20AL205777, 20AL212213, 20AL211011, and 20AL100254 were sighted during the site inspection. However, it is noted that the lack of WALs was originally raised as a non-compliance during the 2009 IEA. In response to this non-compliance, Rocla provided evidence of WALs as attachments to a response letter prepared by R.W. Corkery & Co. (dated 23 January 2012). Evidence of two WALs (issued 14 January 2010) were included in the attachments. This means that during the audit period (28 October 2008 to 9 April 2014) there was insufficient WALs for the original modelled pit inflow for a 14 month period between 28 October 2008 and 14 January 2008.	It is noted that Rocla now hold sufficient WALs for the operation of the Calga Sand Quarry	
Impact Assessment Criteria					
10	The Applicant shall provide compensatory water supply, in accordance with the Groundwater Contingency Strategy and to the satisfaction of the Director-General, where the development results in a reduction of pumping yield in privately-owned groundwater bores of 10 percent or greater.	NT	Refer to Appendix 4		
	Notes:				
	<ul style="list-style-type: none">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 Director-General, then the Applicant may exceed the groundwater impact assessment criteria in accordance with the negotiated agreement.	C	Refer to Appendix 4		
	<ul style="list-style-type: none">The Applicant must establish the basis for determining development-related impact in the Groundwater Monitoring Program (see condition 15).	C	Refer to Appendix 4		
	<ul style="list-style-type: none">The Applicant shall 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.	C	Refer to Appendix 4		
Monitoring and Management					
11	Prior to carrying out any development, the Applicant shall prepare and subsequently implement a Water Management Plan for the development, in consultation with the NOW, and to the satisfaction of the Director-General. This plan must be prepared by a suitably qualified hydrogeologist/hydrologist whose appointment/s have been approved by the Director-General, and shall include:	C	Sighted Site Water Management Plan (Ref No. 264/26 – Feb 2006). Sighted DP&E letter of 13/3/06 approving this plan.		
	Supplementary information provided 7 May 2009 confirmed compliance with this condition has been achieved:				
	A record of consultation activities undertaken during preparation of the Water Management Plan was provided (compiled by RW Corkery Ref. No. 264/28), which included the following:				
	<ul style="list-style-type: none">email from Alex Irwin to Phil Jones of DP&E dated 15 November 2005 requesting approval for GSS Environmental, RW Corkery and CM Jewell and Associates to prepare the Water Management Plan; andletter from Vicki McBride of DNR (now NSW Office of Water (NOW)) to Alex Irwin of RW Corkery dated 6 February 2006 stating that DNR is satisfied that the Site Water Management Plan fulfils the intent of the general terms of approval granted under the <i>Water Management Act 1912</i>. We note that approval from the Director-General for the appointment of a 'suitably qualified hydrogeologist has not been received. We note however that DP&E have approved the Management Plan and therefore it is assumed they were comfortable with the hydrogeologist.				
	(a) a Water Balance;	C	Section 3 of the Site Water Management Plan.		
	(b) an Erosion and Sediment Control Plan;	C	Section 4 of the Site Water Management Plan.		
(c) a Surface Water Monitoring Program; and	C	Section 5 of the Site Water Management Plan.			
(d) a Groundwater Monitoring Program.	C	Section 6 of the Site Water Management Plan.			

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	12	The Water Balance shall:	C	Section 3 of the Site Water Management Plan.	
		(a) include details of all water extracted (including water make), dewatered, transferred, used and/or discharged by the quarry; and	C	Section 3 of the Site Water Management Plan.	
		(b) describe measures to minimise water use by the development.	C	Section 3.4 of the Site Water Management Plan.	
	13	The Erosion and Sediment Control Plan shall:	C	Section 4 of the Site Water Management Plan.	
		(a) be consistent with the requirements of the Department of Housing's <i>Managing Urban Stormwater: Soils and Construction</i> manual;	C	Section 4 of the Site Water Management Plan.	
		(b) identify activities that could cause soil erosion and generate sediment;	C	Section 4.2 of the Site Water Management Plan.	
		(c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;	C	Section 4.4. of the Site Water Management Plan.	
		(d) describe the location, function, and capacity of erosion and sediment control structures; and	C	Sections 4.4.3 to 4.4.6 of the Site Water Management Plan.	
		(e) describe what measures would be implemented to maintain the structures over time.	C	Section 4.4.7 of the Site Water Management Plan.	
	14	The Surface Water Monitoring Program shall include:	C	Section 5 of the Site Water Management Plan.	
		(a) detailed baseline data on surface water flows and quality in waterbodies that could potentially be impacted by the quarry;	C	Section 5.2 of the Site Water Management Plan.	
		(b) surface water impact assessment criteria;	C	Section 5.2 of the Site Water Management Plan.	
		(c) a program to monitor surface water flows and quality;	C	Section 5.3 of the Site Water Management Plan.	
		(d) a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria; and	C	Section 5.4 of the Site Water Management Plan.	
		(e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.	C	Section 5.5 of the Site Water Management Plan.	
	15	The Groundwater Monitoring Program shall 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;	C	Refer to Appendix 4	
		(b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;	C	Refer to Appendix 4	
		(c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and	NC	Refer to Appendix 4	Rocla should developed a suitable program to identify and monitor potential impact to GDEs that could potentially be affected by quarrying impacts to the groundwater resource. This information should be prepared by a suitably qualified hydrogeologist and/or ecologist and included as a revision to the SWMP.
		(d) a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater impact assessment criteria.	C	Refer to Appendix 4	
		<i>Note: The Groundwater Monitoring Program shall 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 Director-General.</i>	NC	Refer to Appendix 4	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, irrespective of the omission of wording in the project approval.
	Groundwater Contingency Strategy				
	16	Within 6 months of the date of this consent, the Applicant shall prepare a Groundwater Contingency Strategy for the development, in consultation with the NOW, and landowners within the predicted drawdown impact zone identified in the Amendment Report, and to the satisfaction of the Director-General. The strategy shall include:	ANC	Refer to Appendix 4	Carry forward of the previous audit's recommendation to amend the SWMP to include the noted commitments, or provide evidence that this condition has been satisfied. This condition, with the exception of the note below, are essentially identical in the recent project approval (PA06_0278).
		(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	NC	Refer to Appendix 4	Carry forward of the previous audit's recommendation to amend the SWMP to include the noted commitments, or provide evidence that this condition has been satisfied. This condition, with the exception of the note below, are essentially identical in the recent project approval (PA06_0278).
		(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.	NC	Refer to Appendix 4	Carry forward of the previous audit's recommendation to amend the SWMP to include the noted commitments, or provide evidence that this condition has been satisfied. This condition, with the exception of the note below, are essentially identical in the recent project approval (PA06_0278).
		<i>Note: The strategy shall 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 Director-General.</i>	NC	Refer to Appendix 4	The requirements in this note do not appear to have carried over to the recent project approval (PA06_0278).
	Annual Independent Groundwater Audit				
	17	Each year from the date of this consent, or as otherwise directed by the Director-General, the Applicant shall 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 Director-General. The audit shall be conducted by a suitably qualified and independent hydrogeologist whose appointment has been approved by the Director-General.	C	Refer to Appendix 4	No timeframe for issue of the AEMR or annual independent groundwater audit reports is included in the approval conditions. The auditor notes that as of September 2014, the 2013 AEMR was not available on the Rocla website and only a draft version of the 2013 annual independent groundwater audit report was available. It is recommended that these reports are completed and made available on the website within a reasonable timeframe (e.g. by 31 March of the following year).
	Reporting				
	18	Each year from the date of this consent, the Applicant shall:			
		(a) review, and if necessary update, the Water Management Plan; and	C	It was noted during the site inspection that the SWMP is reviewed in annual groundwater audits and that no amendments have been required as yet.	
		(b) report the results of this review in the AEMR, including:	C	Groundwater audits appended to AEMRs for 2008, 2009, 2010, and 2011.	A summary of the SWMP review was not included in AEMRs, consider including.
		• details of the review for each sub-plan;	C	Contained in groundwater audits which are appended to the AEMRs.	
		• the results of monitoring;	C	Monitoring results discussed in Section 4.0 of AEMRs.	
		• the results of the independent groundwater audit (including a copy of the report); and	C	Monitoring results for all monitoring provided in appendices of AEMR (including the results of the annual groundwater audit.	
	19	• the results of the independent groundwater audit (including a copy of the report); and	C	Groundwater monitoring and water table depth results provided in Section 4.1 of the AEMRs, with the independent groundwater audit provided as an Annexure to the AEMR.	
		• details of the measures undertaken/proposed to address any identified issues.	C	Discussed if relevant in Section 4.1 of AEMRs	
		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 shall commission a suitably qualified hydrogeologist, whose appointment has been approved by the Director-General, 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 shall:	NC	Refer to Appendix 4	This requirement does not appear to have carried over to the southern extension project approval (PA 06_0278), which will supersede this development consent upon surrender by Rocla. It is possible that this is due to the assessment of a 200-year post-extraction recovery period in the modelling for the southern extension environmental assessment, and the associated requirement to hold water access licences for long-term groundwater inflow to the pit void. Good groundwater resource management practice dictates that a closure and post closure groundwater management plan be developed, which may incorporate elements of recent modelling and WAL requirements. The plan should be prepared by a suitably qualified hydrogeologist, and should identify commitments to mitigate or reduce unacceptable long term impacts to the groundwater resource (if any). Rocla has noted that work by its groundwater consultant (Peter Dunden) reports that groundwater impacts for the quarry are less than predicted for the modelling completed for DA94-4-2004, with groundwater monitoring continuing for all bores in the area.
		(a) be prepared in consultation with the NOW, 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 Director-General.			

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	METEOROLOGICAL Monitoring				
	20	Prior to carrying out any development, the Applicant shall establish and subsequently maintain a meteorological station in the vicinity of the development, to the satisfaction of the EPA and the Director-General. The station shall as a minimum, unless otherwise authorised by the Director-General, monitor daily rainfall and evaporation in accordance with the requirements in <i>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW</i> .	C	Review of monitoring reports indicates that meteorological monitoring is undertaken in accordance with this condition.	
	Rehabilitation and Landscaping				
	Rehabilitation				
	21	The Applicant shall progressively rehabilitate the site to the satisfaction of the Director-General, 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.	C	No parts of the quarry are at final extraction level and there are therefore limited opportunities for rehabilitation. Stage 2 extraction is complete, but has not yet commenced rehabilitation due to the presence of admin buildings. It can commence once these are relocated. During the site inspection rehabilitation on the southern boundary was observed. It was young rehabilitation, with a variety of native species sighted. Rocla has obtained specialist advice and assistance with this rehabilitation.	
	Rehabilitation and Landscape Management Plan				
	22	Within 6 months of the date of this consent, the Applicant shall 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 Director-General. This plan must:	ANC	Sighted Rehabilitation and Landscape Management Plan 2006 (Doc No. 264/30). Sighted letter from John Gardiner to DP&E (undated) advising that a final draft of the plan had been submitted to DP&E, DEC and Gosford Council. Sighted letter from Alex Irwin (RW Corkery) to Paul Slough (Rocla) dated 17 Aug 2006, stating that the plan had been submitted to DP&E, DEC and GCC on 8 August 2006. August submission of this plan is also outside the 6 month timeframe required by the condition. No evidence of DP&E's satisfaction was sighted.	Rocla has indicated that DP&E have advised that no reply is an approval, however, there was no written evidence provided to confirm that the plan was approved or to confirm this advice. Letter of submission of the plan to DP&E was not sighted. Assuming it was submitted as outlined in the letter from RW Corkery, it was outside the required timeframe. Due to the above, this condition has not been fully satisfied. It is recommended that Rocla obtain written evidence from DP&E indicating their satisfaction with the Rehabilitation and Landscape Management Plan after an updated plan is submitted following its next scheduled review.
		(a) identify the areas likely to be disturbed by the development;	C	Described in Section 2.3 of the Rehabilitation and Landscape Management Plan.	
		(b) describe in general the short, medium, and long-term measures that would be implemented to rehabilitate the site;	C	Described in Section 3 of the Rehabilitation and Landscape Management Plan.	
		(c) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site;	C	Described in Section 3.3 of the Rehabilitation and Landscape Management Plan.	
		(d) describe how the performance of these measures would be monitored over time;	C	Described in Section 4.2.5 of the Rehabilitation and Landscape Management Plan.	
		(e) set completion criteria for the rehabilitation of the site;	C	Described in Section 4.1 of the Rehabilitation and Landscape Management Plan.	
		(f) include a Vegetation Clearing Protocol, a Pest and Weed Management Plan, and a Landscape Plan; and	C	Described in appendices 2, 3 and 4 of the Rehabilitation and Landscape Management Plan.	
		(g) include a program to monitor the development's effects on vegetation, including threatened species and groundwater dependent ecosystems.	C	Described in Section 4.2.5. Groundwater Dependent Ecosystem monitoring not specifically mentioned, however <i>Darwinia glaucophylla</i> and <i>Hibertia procumbens</i> and surrounding vegetation monitoring is included. These species are identified as groundwater dependent.	
	23	Within 4 years of providing the Rehabilitation and Landscape Management Plan to the Director-General, and every 5 years thereafter, the Applicant shall review and update the plan to the satisfaction of the Director-General.	ANC	A review was due to be undertaken in 2010, however was not undertaken. A review is currently being undertaken.	It is recommended that Rocla complete the review of the RLMP and ensure any requirements in the new Project Approval are met.
	Rehabilitation Bond				
	24	Within 12 months of the date of this consent, the Applicant shall lodge a rehabilitation bond for the development with the Director-General. The sum of the bond shall be calculated at \$2.50/m ² for the total additional area to be disturbed in each 5 year review period, or as otherwise directed by the Director-General.	C	Bank Guarantee dated 18 September 2007, with the Bank Guarantee revised 21 February 2012, with M. Moore, Senior Environmental Planning Officer of the then Department of Planning CC'd on this correspondence.	
		Notes:	Noted		
		<ul style="list-style-type: none"> If the rehabilitation is completed to the satisfaction of the Director-General, the Director-General will release the rehabilitation bond. If the rehabilitation is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the rehabilitation bond, and arrange for the satisfactory completion of these works. 			
	25	Within 4 years of lodging the rehabilitation bond with the Director-General, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall review, and if necessary revise, the sum of the bond to the satisfaction of the Director-General. This review must consider:	ANC	Bank Guarantee dated 18 September 2007, with the Bank Guarantee not revised until 21 February 2012, with M. Moore, Senior Environmental Planning Officer of the then Department of Planning CC'd on this correspondence. Required 4 year review timeframe was not met.	4 year review was required by 18 Sept 2011 but was not undertaken until 21 February 2012. It is noted that Rocla has indicated the bond was in place by 28 October 2006; however, negotiations with DP&E and Council to merge the bond commenced 12 October 2006, with Council response delayed until 13 March 2007 before Rocla could commence preparation of the bond to their requirements. It is recommended that Rocla ensure that a review, and if necessary revision, of the rehabilitation bond is completed prior to 18 September 2016 to ensure compliance with the Project Approval.
	Traffic and Transport				
	Site Access				
	26	Prior to the commencement of extraction in the applicable quarry stages, the Applicant shall:			
		(a) seal the internal access road from the site entrance to the Stage 3 extraction limit for Stages 3/1 and 3/2; and	C	This condition was reviewed and found to be compliant in the previous IEA, with photos sighted of road sealing activities in Section 2.5 of the 2006 AEMR; with the sealed road sighted during the inspection. It is noted that the road is partially obscured by covering of sand.	
		(b) seal the internal access road from the site entrance to the administration area for Stages 3/3 onwards,	O	Access road is sealed but is covered by sand and is therefore not operating as planned. Road should be cleaned.	It is noted that the internal access road is sealed; however, during the site inspection the road was covered in sand up to the wheel wash.
		to the satisfaction of the Director-General.	V	Evidence of DP&E's satisfaction with the road sealing activities was not provided.	
		Note: The access road and quarrying stages are as shown in Appendix 1	Noted		
	27	Prior to carrying out any development, the Applicant shall 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 RTA.	ANC	The previous IEA sighted the purchase order for road sealing dated 10 January 2006 and noted the road works have been completed. However, evidence of the RTA's satisfaction with a painted seagull arrangement was not provided during the previous audit or this audit. It is noted that the works would have required a s138 authority under the Roads Act from the relevant roads authority. Rocla advised that this work was undertaken by a contractor and therefore Rocla do not have all records available.	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. While verification of RMS's satisfaction with the works was not provided, it is expected that approval would have been given by the relevant roads authority in order for the work to have been completed.
	28	The Applicant shall ensure that the long term access road is designed to:			
		(a) accommodate heavy vehicle turning paths for the left hand turn from Peats Ridge Road into the access road, to the satisfaction of the RTA and the Director-General; and	NC	Evidence of the DP&E's and the RTA's satisfaction with the road sealing activities was not provided.	Confirm the DP&E and RMS (formerly RTA) is satisfied with the works undertaken.
		(b) provide for vehicular access to the pit floor, to the satisfaction of the DPI and the Director-General.	ANC	Evidence of the DP&E's and the DPIs satisfaction vehicular access to the pit floor was not provided.	Confirm the DP&E and DPI is satisfied with the works undertaken. Rocla notes that regular inspections are undertaken of the quarry by DPI and no issues regarding the roads have been raised. Rocla also noted that all roads have been designed to relevant safety guidelines.
	Parking				
	29	The Applicant shall provide sufficient parking on-site for all quarry-related traffic, in accordance with Council's parking codes, and to the satisfaction of the Director-General.	ANC	Sighted parking area adjacent to administration buildings. There are fifteen (15) spaces provided for 10 staff and 5 visitors. Heavy vehicles would be stopped for short durations (e.g. Use of toilets) (P. Slough pers. Comm.). It is considered there is adequate parking space, with the Council code for parking (development control plan) not having any specific controls that would relate to the quarry).	Previous audit noted the need to provide evidence of DP&E's satisfaction with parking and compliance with Council's code. This was not provided during the audit. It is recommended that Rocla confirm the Director-General of the DP&E is satisfied with the parking arrangements at Calga Sand Quarry to ensure compliance with this condition.

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	31	The Applicant shall 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.	C	Sighted wheel wash adjacent to site entry/exit point. Operators trained to observe/notify truck drivers of any excess/spilt sand on their vehicles. In addition, induction documentation and signage was sighted which states that all trucks leaving the site must use the wheel wash.	
Visual Impact					
	32	The Applicant shall (a) implement all practicable measures to minimise the visual impacts of the development;	C	The Eastern, North-Eastern, Northern, Western and Internal acoustic bunds have been substantially constructed and vegetated with native species. In addition, the eastern bund was extended further south to the start of the southern boundary, assisting in the minimisation of visual impact. In addition, dump trucks and the wash plant which were previously located in the Stage 3/6 extraction area have been relocated to the former Stage 2 area, assisting in management of visual impact	
		(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	The Eastern, North-Eastern, Northern, Western and Internal acoustic bunds have been substantially constructed and vegetated with native species.	
		(c) include a progress report on the re-vegetation and maintenance of the acoustic barrier in the AEMR,	C	Construction, maintenance and revegetation activities associates with acoustic bund are briefly discussed in the 2008, 2010 and 2011 AEMRs. A Rehabilitation Assessment Report, prepared by T.R.E.E.S, is included with the 2008, 2010 and 2011 AEMRs as an Annexure; reporting on the progress of the: - Eastern Acoustic Bund; - North-Eastern Acoustic Bund; - Northern Acoustic Bund; - Western Acoustic Bund; and - Internal Acoustic Bund.	
		to the satisfaction of the Director General.	C	Although no formal correspondence was provided that DP&E was satisfied with the information provided in the AEMR, no issues were raised and reasonable information was provided. It is assumed that DP&E was satisfied with the information provided.	
	33	The Applicant shall take all practicable measures to prevent and/or minimise any off-site lighting impacts from the development.	C	During the site inspection it was stated that the only lighting that comes on is the carpark light which in the morning turns on from 4.30 am and at night goes off from 6.00 pm. It was stated that no night works are currently undertaken (P. Slough pers. comm.).	
	34	All external lighting associated with the development shall comply with <i>Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting</i> .	V	Construction certificate sighted for the new wash plant that states the design is in accordance with the Development Consent and the Building Code of Australia. No direct reference to compliance with AS4282 was provided. There is minimal other lighting on the site with the only fixed lighting associated with the office. The lights are downward facing.	
Waste Management					
	35	The Applicant shall: (a) monitor the amount of waste generated by the development;	C	Waste streams identified and briefly discussed in 2008, 2009, 2010, 2011 and 2012 AEMRs. Monitoring of quarry waste undertaken through quarry operations. Monitoring of general waste occurs through contractor. Monitoring of recycling (batteries/oil/steel) occurs as required. The 2013 AEMR is currently being prepared and as such review could not be undertaken. However, waste pickup records were sited for 13 June 2013, 16 May 2013, 13 November 2013, 21 November 2013.	
		(b) investigate ways to minimise waste generated by the development;	C	Oil rags and oil filters are separated and disposed of separately to other waste. A cardboard and paper bin for recycling in available. All putrescible and non-putrescible waste are disposed of separately.	
		(c) implement reasonable and feasible measures to minimise waste generated by the development; and	C	Waste minimisation measures include recycling of oil, batteries and steel. Beneficial re-use of overburden (stockpiled for later use and some is sold) and recycling of process water.	
		(d) report on waste management and minimisation in the AEMR.	C	Waste management discussed in the AEMRs in the following Sections: 2.4 (2008, 2009, 2010 and 2012), and 2.3 (2011).	2013 AEMR is in the process of being prepared.
Hazard Management					
Dangerous Goods					
	36	The Applicant shall ensure that the storage, handling, and transport of dangerous goods is conducted in accordance with the relevant Australian Standards, particularly <i>AS1940</i> and <i>AS1596</i> , and the <i>Dangerous Goods Code</i> .	C	During the site inspection it was stated that diesel is the only applicable dangerous goods kept on site. It was considered that the storage, handling and transport of diesel is in compliance with this condition.	
Safety					
	37	The Applicant shall secure the development to ensure public safety to the satisfaction of the Director-General.	C	The Calga Sands Quarry is completed fenced on all sides, with barbed-wire fencing on the southern and western boundaries and cyclone/colourbond fencing on the northern and eastern boundaries around the acoustic bunds.	
BUSHFIRE MANAGEMENT					
	38	The Applicant shall: (a) ensure that the development is suitably equipped to respond to any fires on site; and	C	Sighted fire fighting measures during site inspections including 12,000L water cart and fire extinguishers. Fire suppression units is installed on all quarry equipment (P Slough pers. comm.). In addition, a certificate of training for first response fire awareness for P. Slough was sighted (dated 21 January 2010).	
		(b) assist the Rural Fire Service and emergency services as much as possible if there is a fire on site.	N/T	Rocla will assist the RFS in anyway possible if there is a fire on-site (P Slough pers. comm.). There have been no fires on site.	

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	PRODUCTION DATA				
	39	The Applicant shall:			
		(a) provide annual production data to the DPI using the standard form for that purpose; and	C	Production records and DPI standard forms sighted.	
		(b) include a copy of this data in the AEMR.	C	Annual production data provided in Section 2.0 of AEMRs. It is noted that this is not included in the standard DPI annual data submission form.	
	QUARRY EXIT STRATEGY				
	40	At least 3 years prior to the cessation of quarrying, the Applicant shall prepare a Quarry Exit Strategy for the development, in consultation with the Council, and to the satisfaction of the Director-General. The plan must:	N/T	Not yet triggered.	
		(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.				
4	ADDITIONAL PROCEDURES				
	Notification of Landowners				
	1	If the results of monitoring required in schedule 3 identify that impacts generated by the development are greater than the relevant impact assessment criteria in schedule 3, then the Applicant shall notify the Director-General 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.	NC	Noise exceedances were reported through the AEMR. However, there were no direct notifications made or provision of monitoring results	It is recommended that Rocla finalise development of a procedure to investigate potential exceedances and where an exceedance is confirmed, report the exceedance to the Director-General, affected landowners and/or existing or future tenants. It is recommended that Rocla ensure noise exceedances are reported to the Director-General, affected landowners and/or existing or future tenants in accordance with Schedule 4, Condition 1 of DA 94-4-2004.
	Independent Review				
	2	If a landowner considers that the operations of the quarry are exceeding the impact assessment criteria in schedule 3, then he/she may ask the Applicant in writing for an independent review of the impacts of the development on his/her land.	C	An environmental complaint in regard to the Calga Sand Quarry was made to the DP&E by the owner of the Australia Walkabout Wildlife Park located approximately 1 kilometre south of the quarry. In response to this complaint a noise audit was conducted by Wilkinson Murray (February 2013) and Renzo Tonin (June 2013). The Wilkinson Murray assessment concluded that the quarry operations are generally in compliances with the NSW Industrial Noise Policy. The resident requested a second noise assessment of the quarry operations be conducted. The Renzo Tonin assessment concluded that the noise levels from the quarry are not loud enough to cause sleep disturbance in the early morning at the Australia Walkabout Wildlife Park. It also concluded that the Development Consent for the quarry currently applies a 35dB(A) noise criterion for AWWP, suggesting that a more appropriate noise criteria would be Day (7.00pm-6.00pm) = 43 dBLAeq,15m, and Shoulder (5.00pm-7.00am) = 38dBLAeq,15min.	
		If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:			
		(a) consult with the landowner to determine his/her concerns;			
		(b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to determine whether the development is complying with the relevant criteria in schedule 3, and identify the source/s and scale of any impact on the land, and the development's contribution to this impact; and			
		(c) give the Director-General and landowner a copy of the independent review.			
	3	If the independent review determines that the quarrying operations are complying with the relevant criteria in schedule 3, then the Applicant may discontinue the independent review with the approval of the Director-General.	V	No evidence was provided to assess compliance with this condition, however, it is understood that the above reports addressed the concerns raised.	
	4	If the independent review determines that the quarrying operations are not complying with the relevant criteria in schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Applicant shall:	N/T		
		(a) take all practicable measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and	N/T		
		(b) conduct further monitoring to determine whether these measures ensure compliance; or	N/T		
		(c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in schedule 3; or	N/T		
		(d) in the case of an exceedance of the groundwater impact assessment criteria, implement compensatory water supply measures in accordance with the Groundwater Contingency Strategy (condition 16 of schedule 3), to the satisfaction of the Director-General.	N/T		
		If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in schedule 3, then the Applicant may discontinue the independent review with the approval of the Director-General.	N/T		
		If the Applicant is unable to finalise an agreement with the landowner, then the Applicant or landowner may refer the matter to the Director-General for resolution.	N/T		
		If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).	N/T		
	5	If, following the Independent Dispute Resolution Process, the Director-General is satisfied that the noise generated by the development is exceeding the noise impact assessment criteria in schedule 3 by more than 5 dBA, then the Director-General may grant land acquisition rights to the affected landowner.	N/T		
		If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution.	N/T		
	6	If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).	N/T		
		If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 3).	N/T		
	7	If, following an Independent Dispute Resolution Process, the Director-General is satisfied that the quarry is causing an exceedance of the groundwater impact assessment criteria, and that compensatory water supply would not provide an acceptable alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to quarrying related impacts, then the Director-General may grant land acquisition rights to the affected landowner.	N/T		
	Land Acquisition				
	8	Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:	N/T	No written requests for acquisition have been received.	
		(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:			
		• existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and			
		• 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;			
		(b) the reasonable costs associated with:			
	9	• relocating within the Gosford local government area, or to any other local government area agreed to by the Director-General; and	N/T		
		• obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and			
	10	(c) reasonable compensation for any disturbance caused by the land acquisition process.	N/T		
		The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred above.			
	10	If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.	N/T		

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
5	ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING				
	environmental management strategy				
	1	Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:	C	As noted during the previous audit, the DP&E did not confirm their satisfaction with the EMS until 13 March 2006 and therefore compliance with the timeframe was not achieved, however as the condition requires the EMS to be prepared and implemented and this has been done, it is considered compliant.	
		a) provide the strategic context for environmental management of the development;	C	Outlined in Section 2.0 of the EMS.	
		b) identify the statutory requirements that apply to the development;	C	Outlined in Section 3.0 of the EMS.	
		c) describe in general how the environmental performance of the development would be monitored and managed during the development;	C	Outlined in Section 4.0 of the EMS.	
		d) describe the procedures that would be implemented to:	C	Outlined in following section of EMS:	
		• keep the local community and relevant agencies informed about the operation and environmental performance of the development;		• Section 6.0	
		• receive, handle, respond to, and record complaints;		• Section 7.0	
		• resolve any disputes that may arise during the course of the development;		• Section 8.0	
		• respond to any non-compliance;		• Section 9.0	
		• manage cumulative impacts; and		• Section 10.0	
		• respond to emergencies; and		• Section 11.0	
		• accountability and responsibility.		• Section 12.0	
		e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development; and	C	Outlined in Section 12.0 of the EMS	
		f) be updated within 3 months of the completion of each Independent Environmental Audit.	ANC	The EMS was not updated within 3 months of the last IEA and there was no evidence provided that a review for the need to make changes was undertaken. It is noted that the previous IEA did not make any specific recommendations for the update of the EMS.	It is recommended that as Rocla is required to prepare plans, programs and strategies for the December 2013 Project Approval (PA06_0278) by the end of June 2014, 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. Note that Rocla advised at a meeting in March 2015 that DP&E has provided an extension to the end of 2015 for submission of plans due to ongoing court action relating to the 2013 Project Approval.
	Environmental monitoring program				
	2	Within 3 months of the date of this consent, the Applicant shall prepare an Environmental Monitoring Program for the development, to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in schedule 3 of this consent into a single document.	C	As noted during the previous audit, the DP&E did not confirm their satisfaction with the EMS until 13 March 2006 and therefore compliance with the timeframe was not achieved, however as the condition requires the EMS to be prepared and implemented and this has been done, it is considered compliant.	
	3	Within 3 months of the completion of each Independent Environmental Audit (see below), the Applicant shall review, and if necessary update, the Environmental Monitoring Program to the satisfaction of the Director-General.	C	The EMP was updated in September 2009 and approved by the Director-General 14 October 2009	
	Incident reporting				
	3A	The Applicant shall notify the Director-General and any other relevant agencies of any incident associated with the development as soon as practicable after the Applicant becomes aware of the incident. Within seven days of the date of the incident, the Applicant shall provide the Director-General and any relevant agencies with a detailed report on the incident.	C	During the site inspection P. Slough stated that there have been no reportable environmental incidents which have occurred on-site during the audit period. It is noted that the Pollution Incident Response Procedure for fuel or oil spills was sighted, this procedure detailed the purpose, scope, responsibilities and the procedure to follow in the event of a fuel or oil spill. In addition, spill kits are kept on-site. It is noted that training is undertaken every 6 months for the response in the event of an emergency or incident (e.g. a major spill) (P Slough pers. comm.).	
	Annual reporting				
	4	Each year, following the date of this consent, the Applicant shall prepare and submit an AEMR to the Director-General and the relevant agencies. This report must:	C	Sighted AEMRs for 2008, 2009, 2010, 2011, and 2012	The 2013 AEMR was not available at the time of the audit as it is in the process of being prepared.
		a) identify the standards and performance measures that apply to the development;	C	Outlined in Sections 4.1.2 (Groundwater), Section 4.2.2 (Surface Water), 4.3.2 (Noise), and 4.4.2 (Air Quality) of the AEMRs	
		b) describe the works carried out in the last 12 months;	C	Outlined in Section 2 of AEMRs.	
		c) describe the works that will be carried out in the next 12 months;	C	Outlined in Section 6 of AEMRs.	
		d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;	C	Complaints listed in AEMR's, with a comparison of the number of complaints received in the previous year noted.	
		e) include a summary of the monitoring results for the development during the past year;	C	Outlined in Section 4.0. Detailed results provided in appendices.	
		f) include an analysis of these monitoring results against the relevant:	C	Discussed in Sections 4.1 (Groundwater), 4.2 (Surface Water), 4.3 (Noise), and 4.4 (Air Quality) of the AEMRs.	
		• impact assessment criteria;			
		• monitoring results from previous years; and			
		• predictions in the EIS and Amendment Report;			
		g) identify any trends in the monitoring results over the life of the development;	C	Discussed in Sections 4.1 (Groundwater), 4.2 (Surface Water), 4.3 (Noise), and 4.4 (Air Quality) of the AEMRs.	
		h) identify any non-compliance during the previous year; and	C	Discussed in Section 5.0 of the AEMRs	
		i) describe what actions were, or are being taken to ensure compliance.	C	Discussed in Section 5.0 of the AEMRs (where applicable)	
	independent environmental audit				
	5	Within 3 years of the date of this consent, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:	C	Condition is satisfied by the 2008 Audit and this audit. DP&E's approval of Umwelt to complete the 2008-2013 audit sighted.	
		a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;	C	Refer to main body of audit report.	
		b) be consistent with <i>ISO 19011:2002 - Guidelines for Quality and/or Environmental Systems Auditing</i> , or updated versions of this guideline;	C	Refer to main body of audit report.	
		c) assess the environmental performance of the development, and its effects on the surrounding environment;	C	Refer to main body of audit report.	
		d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;	C	Refer to main body of audit report.	
		e) review the adequacy of the Applicant's Environmental Management Strategy and environmental management plans/protocols; and, if necessary,	C	Refer to main body of audit report.	
		f) recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.	C	Refer to main body of audit report.	
	6	Within 3 months of commissioning this audit, the Applicant shall submit a copy of the audit report to the Director-General, with a response to the recommendations contained in the audit report.	O	Umwelt was engaged by Rocla to complete the previous audit on 15 January 2009; however the final audit report was not submitted to the Director-General until June 2009. Correspondence dated May 2009 indicates that this was due to scheduling difficulties delaying the on-site component of the audit until 23-24 February 2009 and personal circumstances of one of the auditors requiring extended leave beginning in early March 2009. Rocla provided the report within 3 months of the audit being completed. It is noted that the completion of this audit was delayed by the need to consult with surrounding land holders in regard to groundwater as directed by DP&E and the subsequent availability of the required data from Rocla and availability of community members for interview.	

Schedule	Condition No.	Requirement	Compliance C/NC/ANC/NT/V	Evidence	Comments
	Revision of Strategies, Plans and Programs				
	6A	Within three months of: a) the submission of an AEMR under condition 4 above; b) the submission of an incident report under condition 12 above; c) the submission of an audit under condition 5 above; or d) any modification to the conditions of this consent (unless the conditions require otherwise), The Applicant shall review, and if necessary revise, the strategies, plans and prorams required under this consent to the satisfaction of the Director-General. <i>Note: this is to ensure the strategies, plans and programs are updated on a regular basis and incorporate any recommended measures to improve the environmental performance of the development</i>	ANC	No evidence was provided that these required reviews were undertaken. No formal process for this required review process is in place.	It was stated during the site inspection that review of strategies, plans and programs is discussed; however, there was no process in place and no evidence that a review occurred could be provided. It is noted that Rocla indicated the review of some management plans was discussed in a meeting of the CCC and it was decided that those management plans didn't need updating; however, no evidence could be provided to verify this and Rocla advised that not all plans were discussed. Unless otherwise agreed with DP&E, all plans should be reviewed within 3 months of this audit as required by this condition. The outcomes of this review should be documented.
	Community Consultative Committee				
	8	Within 6 months of the date of this consent, the Applicant shall establish a Community Consultative Committee to oversee the environmental performance of the development. The CCC shall: a) be comprised of at least: • two representatives from the Applicant, including the person responsible for environmental management at the quarry; • one representative from Council (if available); and • at least two representatives from the local community, whose appointment has been approved by the Director-General in consultation with the Council; b) be chaired by an independent chairperson, whose appointment has been endorsed by the Director-General; c) meet at least twice a year; and d) review and provide comment on the environmental performance of the development, including any construction or environmental management plans, monitoring results, audit reports, or complaints.	O	As noted in the previous audit, the CCC was established but not within the required from and was noted as not compliance during the previously audit. The operation of the CCC was compliant in this audit period.	
			C	Sighted meeting minutes for March 2009, August 2009, March 2010, September 2010, March 2011, October 2011, April 2012, and September 2012. Council has elected not to participate with CCC (P Slough pers. comm.).	
			C	Sighted letter from DP&E (13/7/06) approving chairperson (Anthony Tuxworth).	
			C	Meeting minutes for March 2009, August 2009, March 2010, September 2010, March 2011, October 2011, April 2012, September 2012, March 2013 and September 2013 sighted.	
			C	Sighted meeting minutes discussing various environmental matters.	
	9	The Applicant shall, 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 the Director-General within a month of the Committee meeting.	C	P Slough, A Echt and P McCue (Rocla) attended CCC meetings in all minutes reviewed.	
			C	Monitoring information and management plans provided on website.	
			C	All CCC meetings have been held on site, with the exception of the October 2011 meeting which was held at the Office of Coastplan Consulting.	
			C	A short site inspection was undertaken 17 March 2009 and 16 April 2012	
			C	Meeting minutes for March 2009, August 2009, March 2010, September 2010, March 2011, October 2011, April 2012, September 2012, March 2013 and September 2013 sighted.	
			C	Meeting minutes for March 2009, August 2009, March 2010, September 2010, March 2011, October 2011, April 2012, September 2012, March 2013 and September 2013 sighted on the Rocla website.	
			C	No issues raised in minutes of meetings sighted.	
			C	During the site inspection an email verifying submission of the meeting minutes to the Director-General for the last CCC meeting held in September 2013.	
	ACCESS TO INFORMATION				
	10	Following the commencement of development on site under this consent, the Applicant shall: (a) Make the following information publicly available on its website: - The EIS - Current statutory consents for the development - approved strategies, plans or programs	C	The EIS and EA for MOD 1 are available on the Rocla website.	
			C	Development consents avail	
			ANC	Plans and strategies required by the Development Consent are available on the Rocla website. However, it is noted that the AQMP and EMP have been updated and that these documents on the website are out of date.	Add the updated plans to the website.
		- a summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; - a complaints register, updated on a quarterly basis	C	Environmental monitoring reports are available from April 2006 to December 2013	
			ANC	The complaints register available on the Rocla website is for the start of 2011 to the end of 2012. Results for 2009, 2010 and 2013 are not available	It is recommended that Rocla make the 2009, 2010 and 2013 complaints register publicly available on the Rocla website.
		- Minutes of CCC meetings	C	CCC meeting minutes available on Rocla website.	
		- copies of any annual reviews (over the last 5 years)	C	AEMR's from 2006 to 2012 are available on the Rocla website.	The 2013 AEMR was not available at the time of the audit as it is in the process of being prepared.
		- any independent environmental audit, and the applicants response to the recommendations in the audit	C	The IEA for the 2005-2008 period is available on the Rocla website, with response to non-compliances also available.	
		- Any other matter required by the Director-General	NT		
		b) keep this information up to date	ANC	The AQMP and EMP have been updated however these documents on the website are out of date. In addition complaints for 2009, 2010 and 2013 are not available on the Rocla website.	
		to the satisfaction of the Director-General.			
		Compliant	124		
		Non-Compliant	12		
		Administrative Non-Compliance	13		
		Observation	3		
		Verification	5		
		Not Triggered	28		
		Not Applicable	0		



APPENDIX 2

Photographic Plates



PLATE 1
Extraction Area



PLATE 2
Acoustic and Visual Bunds



PLATE 3
Recently Constructed Acoustic and Visual Bunds



PLATE 4
Recently Rehabilitated Area



PLATE 5
Recently Rehabilitated Area



APPENDIX 3

Independent Environmental Audit of
Groundwater-Related Consent
Conditions, Calga Sand Quarry, Peats
Ridge, NSW

23 March 2015

John Merrell
Group Manager, Environment and Community NSW
Umwelt Australia Pty Ltd
75 York Street
Teralba NSW 2284

**Subject: Independent Environmental Audit of Groundwater-Related Consent Conditions,
Calga Sand Quarry, Peats Ridge, NSW
Geosyntec Project: GSY0005**

Dear John,

1.0 INTRODUCTION

Dr Lange Jorstad, a Senior Hydrogeologist with Geosyntec Consultants Pty Ltd (Geosyntec), was engaged by Umwelt (Australia) Pty Ltd (Umwelt) for the provision of auditor services in respect of groundwater considerations for the Calga Sand Quarry near Peats Ridge, NSW (herein “the site”). The quarry is understood to be operated by Rocla Material Pty Ltd (Rocla). Dr Jorstad’s appointment to the audit team, for the audit of compliance with groundwater-related conditions, was approved by the NSW Department of Planning and Environment (DPE).

The scope and conclusions of this independent audit are subject to the limitations presented in Section 5.0.

1.2 Site Description

The site is located on the Somersby Plateau, on the western side of Peats Ridge Road approximately 1.0 km northwest of the Calga Interchange of the F3 Freeway and approximately 11km west of Gosford. The plateau area consists of a mix of rural land uses and undeveloped bushland, with open pits and associated infrastructure within the quarry development areas. The portion of the Somersby Plateau where the site is located is bounded to the east and west by deeply incised drainages of Mooney Mooney Creek and Popran Creek, respectively.

1.1 Terms of Reference

It is understood that the quarry originally operated under a development consent (10604) determined by the NSW Land and Environment Court in 1991. Quarry operations (Stages 1 and 2) continued under this consent until 2004, when an extension (Stage 3) was sought (DA 94-4-2004) and consented in October 2005. A project approval (PA 06_0278) for a further “southern” extension was issued in December 2013, that relates to Stage 3 (remaining portions) and Stage 4 development.

The requirement for an Independent Environmental Audit (IEA) of compliance with environmental consent conditions is specified in Conditions 11 and 12, Schedule 4 of PA 06_0278. Prior to this approval, the requirement for an IEA was specified in Conditions 5 and 6 of Schedule 5 of DA 94-4-2004. The last IEA completed for the site addressed operations from 2005 to 2008. The current IEA addresses operations from 2009 to 2013, and also included review of additional documentation for groundwater-related actions performed in early 2014.

It is understood that the key groundwater-related consent conditions relevant to the audit include:

- DA 94-4-2004:
 - Condition 10, Schedule 3;
 - Condition 15, Schedule 3;
 - Condition 16, Schedule 3;
 - Condition 17, Schedule 3; and
 - Condition 19, Schedule 3.
- PA 06_0278:
 - Condition 18, Schedule 3;
 - Condition 19, Schedule 3; and
 - Condition 20(b)(iii) and (iv), Schedule 3.

It is noted that project approval PA 06_0278 will supersede DA 94-4-2004 once the consent is surrendered by Rocla. Accordingly, the approval conditions in DA 94-4-2004 were in force during the audit period. Notwithstanding, the groundwater-related approval conditions in PA 06_0278 generally reflect, with minor variations, those included in DA 94-4-2004.

2.0 SCOPE OF REVIEW

The independent environmental audit of groundwater-related approval conditions included the following tasks:

- Review of the relevant sections of the project approval documents, which define the consent conditions against which compliance was audited;
- Review of the following reports and documentation:
 - The results of the previous IEA, and in particular any non-compliances with groundwater-related conditions, and Rocla's responses to those non-compliances;
 - The Site Water Management Plan (SWMP) prepared by R.W. Corkery et al (2006), specifically Section 6 relating to the groundwater monitoring program;
 - Annual independent groundwater audit reports for the years 2009 to 2013 (five total, with the 2013 report provided as a draft), included as annexures to the Annual Environmental Management Reports (AEMR) for those years;
 - Water access licences (WALs) demonstrating sufficient licenced volume for the predicted peak groundwater inflow to the quarry void;
 - The groundwater modelling report prepared by Heritage Computing Pty Ltd (July 2013) as a supplement to the response to submissions received from the public exhibition of the environmental assessment report for the southern extension. A letter summarising the results of an independent peer review of the modelling report, prepared by Kalf and Associates Pty Ltd (dated 20 December 2013), was also reviewed during this audit;
 - A hydraulic testing report prepared by Dundon Consulting Pty Ltd (dated 12 February 2014) for the Rozmanec private water supply bore, undertaken in response to complaints of reduced bore yield;
 - Concerns raised in the minutes of the September 2013 Community Consultative Committee meeting (dated 3 September 2013) regarding groundwater impacts not being appropriately identified in the AEMR, and a response from Rocla to the concern raised (dated 9 September 2013);
- Site inspection of the quarry operations on 9th April 2014, including interviews with site personnel Paul Slough (Calga Sand Quarry Manager) and Pat McCue (Quarry Superintendent);

- Interviews with three private bore owners located within 500 m of the quarry boundary (Rozmanec, Kashouli and Barnard). The Gazzana property was also visited, but the tenant was not interested in conducting an interview; and
- Preparation of this independent groundwater audit report, including the attached audit schedules, indicating the extent to which compliance with the groundwater-related approval conditions was demonstrated, and recommendations to improve the environmental performance of the quarry operation with respect to groundwater management.

3.0 SUMMARY OF KEY AUDIT OUTCOMES

A summary of the key outcomes of the IEA of groundwater-related approval conditions is provided in the following sections. Detailed comments for each of the groundwater-related approval conditions are provided in the attached audit schedules.

3.1 Non-Compliances with Consent Conditions

A number of non-compliances were noted in the review of consent conditions in DA 94-4-2004 and PA 06_0278. It is noted that the conditions associated with certain non-compliances under DA 94-4-2004, which was in force during the timeframe of this audit, are no longer relevant under the conditions of PA 06_0278 as the wording of the conditions did not carry over to the new approval. Accordingly, while these non-compliances have been noted on the attached audit schedules, no recommendations have been made as these conditions will no longer apply once the consent is surrendered and operations at Calga Sand Quarry continue under PA 06_0278. The following non-compliances were noted:

- Quarrying operations commenced in Stage 3/6 without a hydrogeological assessment having been completed to assess the long-term impact of the final void on groundwater resources, and without developing a quarry closure and post-closure groundwater management plan as required in Schedule 3, Condition 19 of DA 94-4-2004. The long-term impact of the quarry void on groundwater resources was subsequently assessed in the modelling completed for the environmental assessment for the southern extension (Heritage Computing, 2013), but the SWMP was not revised to address post-closure groundwater management. This condition did not carry over to the approval for the southern extension (PA 06_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 IEA, irrespective of specific reference in the new project approval;
- It is unclear whether the requirement to develop a groundwater contingency strategy was fully complied with. While elements of a groundwater contingency strategy are present in the SWMP, the outcome of the 2009 IEA was that the contingency strategy was pending approval. The auditor reviewed a document entitled "Rocla's response to

Non-Compliant Conditions with Development Consent DA 94-4-2004 (dated January 2012), in which Rocla offered the following response to this non-compliance: *"Rocla respectfully requests the Director-General's satisfaction with the submitted document."* No evidence of a response from the Director-General was provided during this audit. Additionally, it is unclear if the "submitted document" referred to in this response is the SWMP, or another document. Accordingly, while the intent of the condition is considered to be present in the SWMP, the auditor has recorded this as a non-compliance pending evidence that the approval being sought from the Director-General was granted. It is noted that a nearly identical condition is included in PA 06_0278, Schedule 3, Condition 20(b)(iv);

- Impact assessment criteria for groundwater dependent ecosystems (GDEs) are not included in the SWMP. Reference is made to annual inspections of vegetation as part of a Rehabilitation and Landscape Management Plan, however this Plan does not include impact assessment criteria for GDEs (nor does it identify GDEs that require monitoring), and does not consider impacts to groundwater dependent surface water bodies. This requirement is included in Schedule 3, Condition 15(c) of DA 94-4-2004, and also in Schedule 3, Condition 20(b)(iii) of PA 06_0278;
- Both DA 94-4-2004 and PA 06_0278 include a requirement for appropriate water access licences (WALs) to be obtained to account for the water supply requirements of the project. The requirement to hold WALs for groundwater inflow into mine or quarry voids is specified within the Water Management Act 2000 and Water Management Regulation 2011, and also in the NSW Aquifer Interference Policy. The lack of WALs was originally raised as a non-compliance during the 2009 IEA. In response to this non-compliance, Rocla provided evidence of WALs as attachments to a response letter prepared by R.W. Corkery & Co. (dated 23 January 2012). Evidence of two WALs (WAL 2541 [6 units] and WAL 20019 [46 units], issued 14 January 2010) was included in the attachments, representing a total licence allocation of 52 "units"¹ per year. This allocation was sufficient to account for the original modelled pit inflow during development of Stage 3 (reported as 28.4 ML/year), but not Stage 4 (predicted inflow increased to 138.8 ML/year). The revised maximum annual pit inflow, based on the most recent (and technically robust) modelling was 74 ML/year (in 2019) with the next highest predicted inflow at 42 ML/year. During the current audit, WAL 27185 was also observed with an allocation of 52 units, for a total licenced allocation of 140 units per year. Based on the most recent modelling results, this licenced allocation is sufficient to account for the predicted pit inflows for the duration of the project (as long as the share allocation per unit, specified by NOW, remains above 0.5 ML/year). However, given that the project was originally approved in October 2005, and the WALs were issued in January 2010, the lack of WALs during this four year period represents a non-compliance that extended partially into the current audit period; and

¹ Typically, one unit = one megalitre (ML), although this is subject to reduction by the NSW Office of Water (NOW) during drought years.

- Several new or modified conditions related to groundwater were included in PA 06_0278, which are not addressed in the current SWMP. It is anticipated that these can be addressed in a revision to the SWMP to incorporate the new approval conditions, which would provide an opportunity to address some of the other non-compliances. The auditor notes that Schedule 3, Condition 20(a) of PA 06_0278 required the complying SWMP to be submitted to the Director-General for approval by the end of June 2014, which has now lapsed.

3.2 Interviews with Surrounding Bore Owners

As required in the terms of reference from the DPE, surrounding bore owners within 500 m of the quarry were contacted, and interviews were conducted with bore owners who expressed an interest. Interviews were conducted with Mr and Mrs Rozmanec and Ms Kashouli on 9th April 2014 (joined by Mr John Merrell of Umwelt, and Mr Paul Slough of Rocla), and Ms Barnard of Walkabout Park on 5th August 2014 (joined by Mr John Merrell of Umwelt). The Gazzano residence was visited on 9th April 2014, but the tenant was not interested in an interview. The outcomes of the interviews are summarised below:

- The Rozmanecs claimed that the yield of their water supply bore was reduced as a result of quarrying activities. Mr Rozmanec indicated that his bore was able to produce a sustained yield of 200 gallons per hour (~0.2 litres per second [L/s]) when it was first installed in 1991, and again in 1994 when it was used to assist with fighting a bushfire. However towards the end of 2013 he tried to pump the bore to fill his rainwater tank and found the yield was lower (<0.1 L/s) and pumped dry in about an hour. Rocla arranged for independent hydraulic testing of the bore (Dundon, 2014) and the yield was assessed as being similar to other bores tested in the vicinity of the quarry (refer to discussion in Section 3.3 below). Mr Rozmanec did not agree with the results of the hydraulic testing, and maintained that the quarry operations were responsible for the reduced bore yield;
- The interview with Ms Kashouli was affected by her limited English, although she generally conveyed that she thought the yield in her bores had decreased, saying that there was “sometimes not much water”, and that CP5 and CP6 “run out of water quickly”. She indicated that the pumps in these wells had been occasionally serviced. The auditor notes that quarrying in Section 3/6 was previously reported to have resulted in a 0.7 m water level decline in CP3, but the other bores were considered to be unaffected;
- Ms Barnard raised a number of concerns in relation to groundwater:
 - She noted that there had been a pattern of groundwater-related impacts and non-compliances not being reported appropriately in the AEMRs;
 - She noted that AEMRs were very slow to be issued (which include the annual independent groundwater audit reports), and attributed this to removal of the words “in a timely fashion” from the reporting requirement in an amendment to the development consent;

- She expressed concerns about GDEs (trees and surface water features) being impacted. Specifically, she noted that certain trees across her property were dying with no obvious pattern or cause, and that a former shale quarry on the north end of her property that previously held permanent surface water was now dry;
- She noted that the quarry had previously operated with insufficient water access licences to account for the volume of groundwater inflow to the quarry void, and maintained that the NOW had not enforced this issue stringently enough; and
- She mentioned that her water supply bore used to be able to pump indefinitely, but now would run dry in approximately three hours. She indicated that she did not consent to Rocla monitoring her bore, and therefore did not have monitoring data for her bore.

The auditor notes that there is a pattern of neighbouring bore owners providing anecdotal evidence of reduced yields in their bores, coinciding with the commencement of quarrying under development consent DA 94-4-2004. Monitoring and hydraulic testing data, where available, generally has not supported a quarrying-related impact to the groundwater resource at these bores, which would have manifested as a decline in water levels, and deviation from the rainfall residual mass curve. While the results of independent scientific assessment have generally not supported the assertion that reduced yields in surrounding bores are attributable to quarrying activities, it is recommended that Rocla continues to offer to monitor the neighbours' bores, or that the neighbours commission their own monitoring if they are not willing to allow Rocla's appointed environmental consultant to monitor their bores. In addition, it is recommended that Rocla evaluates whether claims of tree deaths and drying of surface water features on the Walkabout property could be attributable to quarry activities. To date Rocla does not appear to have a clear framework for assessing impacts to GDEs.

3.3 Hydraulic Testing of Rozmanec Bore (CP8)

A hydraulic testing report (Dundon, 2014) was reviewed in relation to the Rozmanec water supply bore (CP8), which was tested in response to a complaint to Rocla by Mr and Mrs Rozmanec in 2013 of diminished yield in their bore (this complaint was confirmed during the interview with the Rozmanecs).

The report indicated that this bore was not previously included in the hydraulic testing campaign in 2006 (no explanation provided); however the measured yield was considered to be within the range of yields determined for the surrounding bores that were tested. The report further indicated that a quarry-induced impact to the bore would manifest in the form of reduced water levels in the bore, whereas water level monitoring records indicated levels that were approximately 2 to 3 m higher than in 2006 (prior to the commencement of the quarrying activity approved under DA 94-4-2004). The hydrograph for CP8 closely tracks the

Peats Ridge rainfall residual mass curve (the cumulative difference between the average and actual monthly rainfall); whereas a quarry induced impact to water levels would result in a divergence from the residual mass curve. Accordingly, it was concluded that the loss of yield in the Rozmanec bore was not attributable to quarrying impacts.

It was speculated that the water level in the aquifer may have been significantly higher when the bore was initially installed and tested in 1991 (based on reverse extrapolation of the rainfall residual mass curve). This would have resulted in the shallower of the two fracture zones logged in the borehole being a more substantial contributor to the bore yield. The influence of this upper fracture zone was evident in the recent hydraulic testing data, with an approximately 75% reduction in the calculated transmissivity when the water level in the bore dropped below the upper fractured zone and only the lower fractured zone was contributing to the bore yield.

While the lack of baseline bore yield data for CP8 in 2006 was an unfortunate omission, the multiple lines of evidence presented in Dundon (2014) provide a reasonable scientific basis for concluding that the reduced yield in CP8 was not attributable to quarrying activities. The water level record is considered to provide the strongest evidence, as a quarrying-induced impact would have resulted in a declining water level that diverges from the rainfall residual mass curve. Accordingly, the auditor supports the conclusion in Dundon (2014).

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on a review of relevant documents, and interviews with site personnel and surrounding bore owners, the auditor concludes that Rocla has complied with most of its consent conditions over the period of review (2009 to 2014). A number of recorded non-compliances under DA 94-4-2004 were attributed to relatively minor issues (e.g. the groundwater contingency strategy lacking clearly documented Director-General approval, despite the key elements of a contingency strategy being present in the SWMP).

The principal non-compliance issues appear to be related to a need to update of the SWMP, both to address new or revised conditions in PA 06_0278, and to address deficiencies in the original SWMP (notably, a clear framework and assessment criteria for assessing impacts to GDEs). In addition, it is recommended that Rocla endeavours to issue its annual reporting within a reasonable timeframe to provide regulators and neighbouring property owners with timely access to the monitoring results.

5.0 LIMITATIONS

The following limitations apply to the scope of the review and conclusions presented in this deliverable:

- Some of the reports supplied for this independent review contain limitations statements. This review is, by extension, subject to those same limitations.
- This independent review was limited to a desktop review of consultant's reports and interviews with limited site personnel and neighbours. The scope of the review did not extend to an exhaustive independent quality assurance assessment of all of the monitoring data. In addition, the information provided during this audit included both scientific measurements and analysis, and anecdotal information, which were in some instances contradictory to each other. The auditor has used professional judgment to focus on the documents and information that were considered to be most relevant to demonstrating compliance with the approval conditions, while giving due regard to the anecdotal information obtained during the audit.
- As a retrospective compliance audit, it was not possible to independently verify all of the factual information in these reports. Accordingly the auditor has relied on the information reported being a true and accurate representation of site conditions and the work completed. The auditor assumes no responsibility for conclusions made based on incorrect information that was not verifiable within this scope of work.

In summary, the necessity to rely on third party information results in an inherent level of uncertainty with respect to the audit that exists despite the auditor's compliance with appropriate professional standards of care.

4.0 CLOSURE

If you have any questions or comments please do not hesitate to call Lange Jorstad on 0447 249 250.

Sincerely,



Lange Jorstad, PhD, RPGeo
Senior Hydrogeologist

Attachments: Development consent compliance summary spreadsheet for DA 94-4-2004
 Project approval compliance summary spreadsheet for PA 06_0278

GSY0005_Calga Quarry GW audit final.docx

Development Consent No. 94-4-2004								
Approval Dated 28 October 2005								
Schedule	Condition No.	Requirement	Compliance C/NC/NT/V	Evidence	2009 Comments	2014 Comments	Recommendations	
3	Impact Assessment Criteria							
10		The Applicant shall provide compensatory water supply, in accordance with the Groundwater Contingency Strategy and to the satisfaction of the Director General, where the development results in a reduction of pumping yield in privately-owned groundwater bores of 10 percent or greater.	NT	<p>Hydraulic testing reports for wells CP3, CP8 and CP13 were reviewed during this audit:</p> <p>CP3 was tested in response to water level impacts from quarrying in cell 3/6 (triggered by >1m drawdown in well CQ11 attributable to quarrying activity). Multiple lines of evidence supported the conclusions that quarrying activities had not resulted in reduced yield potential from this bore.</p> <p>CP8 was tested in response to a complaint of reduced yield by the Rozmanecs. Multiple lines of evidence supported the conclusions that quarrying activities had not resulted in reduced yield from this bore.</p> <p>CP13 was tested in response to a request from the new property owner, to act as a baseline against which to assess future impacts. The results of testing indicated that the bore yield was within the range of the surrounding bores, but at the lower end of the range.</p>	<p>The Annual Groundwater performance Review 2006 Year (Peter Dundon and Associates Pty Ltd 2007) notes that "all commitments relating to groundwater in the SWM, with the exception of one remaining yield test on the Gazzana domestic bore have been complied within 2006." No pump yield data however was presented. Rocla letter (titled Calga Sand Quarry: Inspection of 4 July 2006 undated) notes "Yield measurements have been completed on all bores and the results are being correlated." and</p> <p>Rocla has committed to providing groundwater pumping yield data which is to accompany the submission of the independent environmental audit report. As this data has not been provided to the auditors prior to the finalisation of this report we are unable to confirm that the requirements of this condition have been satisfied. '</p>	The results of hydraulic testing carried out in 2006 were observed during this audit as an excerpt in the independent annual groundwater audit report included as Annexure 3 of the 2008 AEMR report (Aquaterra, September 2009). Reference is made in this report to a separate hydraulic testing report (Aquaterra, May 2008), however this was not available for review. These reports relate to activities that pre-date the current audit period; however are mentioned as evidence of compliance with a previously recorded non-compliance.	The CP13 report appeared to be a draft version. This report should be completed, and both the CP8 and CP13 reports added to the Rocla website.	
		Notes:			We note an agreement regarding the potential groundwater impacts associated with the EIS proposal has been reached with the Gazzana's (letter dated 14 June 2005).			
		• If the Applicant has a reached a negotiated agreement with an affected landowner in regard to groundwater, and a copy of the agreement has been forwarded to the Director-General, then the Applicant may exceed the groundwater impact assessment criteria in accordance with the negotiated agreement.	C	Evidence of Gazzana agreement reported during 2009 audit. No evidence of further agreements since 2009 provided during this audit.	This agreement was sighted following preparation of the draft audit report.			
		• The Applicant must establish the basis for determining development-related impact in the Groundwater Monitoring Program (see condition 15).	C	Refer to comments for Condition 15.	Rocla has committed to providing the agreement to the Department as an attachment to accompany the submission of the independent environmental audit report. As this action has not been completed prior to the finalisation of this report we are unable to confirm that the requirements of this condition have been satisfied.			
		• The Applicant shall 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.	C	Refer to comments for Condition 15.				
Monitoring and Management								
15		The Groundwater Monitoring Program shall 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;	C	Section 6.3 of the Site Water Management Plan.	Section 6.2 of the Site Water Management Plan.			
		(b) groundwater impact assessment criteria for monitoring bores and privately-owned bores;	C	Interim impact assessment criteria included in Section 6.4 of the Site Water Management Plan. It is unclear to the auditor why these are referred to as 'interim' criteria, presumably they would be 'approved' criteria upon approval of the SWMP.	Section 6.4 of the Site Water Management Plan.			
		(c) a program to monitor impacts on the groundwater supply of potentially affected landowners, groundwater dependent ecosystems, and on vegetation; and	NC	Section 6.2 of the Site Water Management Plan. However, impact assessment criteria for GDEs are not included in the SWMP. Reference is made to annual inspections of vegetation as part of a Rehabilitation and Landscape Management Plan, however this Plan does not include impact assessment criteria for GDEs (or even identify GDEs that require monitoring), and does not consider impacts to groundwater dependent surface water bodies. Accordingly, only partial compliance with this condition was demonstrated.	Section 6.2 of the Site Water Management Plan.	No monitoring program or impact assessment criteria were observed in the SWMP to assess potential quarrying related impacts to GDEs.	Rocla should develop a suitable program to identify and monitor potential impact to GDEs that could potentially be affected by quarrying impacts to the groundwater resource. This information should be prepared by a suitably qualified hydrogeologist and/or ecologist and included as a revision to the SWMP.	

Development Consent No. 94-4-2004 Approval Dated 28 October 2005						
Schedule	Condition No.	Requirement	Compliance C/NC/NT/V	Evidence	2009 Comments	2014 Comments
		(d) a protocol for the investigation, notification and mitigation of identified exceedances of the groundwater impact assessment criteria. <i>Note: The Groundwater Monitoring Program shall 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 Director-General.</i>	C	Section 6.4 of the Site Water Management Plan.	Section 6.4 of the Site Water Management Plan.	
			NC	Recommendation from previous audit: <i>Ensure Groundwater Monitoring Program or SWMP is amended to include commitments for evaluating long term impacts of the final void on regional 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.</i> The auditor is not aware of any amendments to the SWMP since the previous audit to incorporate a commitment to evaluate the long-term impact of the quarry void on regional groundwater resources or to develop a post closure groundwater management plan.	Sighted letter from Mackie Environmental Research to DIPNR dated 21 July 05, re: Calga Sand Quarry. Sighted Mackie Environmental Research Report <i>Review of Additional Groundwater Modelling of Calga Sand Quarry</i> , December 2004. The Groundwater monitoring program appears to have been generally prepared in accordance with this plan. The plan does not contain a commitment to evaluating potential long term impacts of the final void on regional groundwater resources or a commitment to developing a closure and post closure groundwater management plan, to the satisfaction of DoP. This is required 5 years before closure of the quarry as specified in the report titled <i>Review of Additional Groundwater Modelling of Calga Sand Quarry</i> , Mackie Environmental Research December 2004.	No evidence of a program to evaluate the long term impacts of the final quarry void on regional groundwater resources or a closure or post closure groundwater management plan observed in the SWMP.
						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, irrespective of the omission of wording in the project approval.
		Groundwater Contingency Strategy				
		Within 6 months of the date of this consent, the Applicant shall prepare a Groundwater Contingency Strategy for the development, in consultation with the NOW, and landowners within the predicted drawdown impact zone identified in the Amendment Report, and to the satisfaction of the Director-General. The strategy shall include:	NC	Recommendation from previous audit: <i>Finalise the Groundwater Contingency Strategy in consultation with DWE and landholders and to the satisfaction of the Director General.</i> The auditor sighted a document entitled "Rocla's response to Non-Compliant Conditions with Development Consent DA 94-4-2004 (January 2012), in which Rocla's response was indicated as "Rocla respectfully requests the Director-General's satisfaction with the submitted document." No evidence was available during this audit that the Director-General had responded to this request. Additionally, it is unclear if the "submitted document" referred to in this response is the SWMP, or another document. Accordingly, the auditor is unable to determine whether this condition has been complied with.	The Site Water Management Plan prepared for the Calga Sand Quarry contained components of a Groundwater Contingency Strategy. As these components have not been finalised or approved, the SWMP is not considered to represent a Groundwater Contingency Strategy as referred to in this condition. P McCue advised (26 May 2009) that verbal agreement had been reached with potentially affected landholders regarding the Groundwater Contingency Strategy. We note that Rocla provided signed agreements with Gazzana and Kashouli (landholders) permitting Rocla to install monitoring bores on their properties. While this indicates that they have held discussions with landholders regarding the groundwater resource and future monitoring requirements it is unclear if the groundwater contingency strategy has been prepared in consultation with them.	No evidence of Director-General approval of a Groundwater Contingency Strategy sighted during this audit.
	16	(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	NC	Status is the same as the 2009 audit. Interim or proposed impact assessment criteria outlined in Section 6.4 of Site Water Management Plan. The Site Water Management Plan also outlines procedures that would be followed in case of an exceedance. However, no evidence provided that this procedure was developed in consultation with the NOW or landowners in the predicted drawdown impact zone, or that it was completed to the satisfaction of the Director-General, as required.	Interim or proposed impact assessment criteria outlined in Section 6.4 of Site Water Management Plan. The Site Water Management Plan also outlines procedures that would be followed in case of an exceedance.	
		(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.	NC	Status is the same as the 2009 audit. Interim or proposed measures to compensate or ameliorate long term water supply losses to affected landholders are outlined in Section 6.4.1 of SWMP. However, no evidence provided that this procedure was developed in consultation with the NOW or landowners in the predicted drawdown impact zone, or that it was completed to the satisfaction of the Director-General, as required.	Interim or proposed measures to compensate or ameliorate long term water supply losses to affected landholders are outlined in Section 6.4.1 of SWMP.	

Development Consent No. 94-4-2004 Approval Dated 28 October 2005							
Schedule	Condition No.	Requirement	Compliance C/NC/NT/V	Evidence	2009 Comments	2014 Comments	Recommendations
		<i>Note: The strategy shall 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 Director-General.</i>	NC	Recommendation from previous audit: <i>Ensure Groundwater Monitoring Program or SWMP is amended to include commitments for evaluating long term impacts of the final void on regional 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.</i> The auditor is not aware of any amendments to the SWMP since the previous audit to incorporate a commitment to evaluate the long-term impact of the quarry void on regional groundwater resources or to develop a post-closure groundwater management plan.	Sighted letter from Mackie Environmental Research to DIPNR dated 21 July 05, re: Calga Sand Quarry. Sighted Mackie Environmental Research Report <i>Review of Additional Groundwater Modelling of Calga Sand Quarry</i> December 2004. SWMP appears to have been generally prepared in accordance with this plan. The plan does not contain a commitment to evaluating potential long term impacts of the final void on regional groundwater resources or a commitment to developing a closure and post closure groundwater management plan, to the satisfaction of DoP. This is required 5 years before closure of the quarry as specified in the report titled <i>Review of Additional Groundwater Modelling of Calga Sand Quarry</i> , Mackie Environmental Research December 2004.		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 by Rocla.
Annual Independent Groundwater Audit							
17		Each year from the date of this consent, or as otherwise directed by the Director-General, the Applicant shall 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 Director-General. The audit shall be conducted by a suitably qualified and independent hydrogeologist whose appointment has been approved by the Director-General.	C	Sighted the Independent Groundwater Audit, included in the AEMRs: 2008 - Prepared by Aqua Terra; 2009 - Prepared by RPS Aquaterra; 2010 - Prepared by RPS Aquaterra; 2011 - Prepared by RPS Aquaterra; 2012 - Prepared by Dundon Consulting; 2013 (draft) - Prepared by Dundon Consulting. The auditor has not sighted the written approval from the Director-General of the appointment of RPS-Aquaterra or Dundon Consulting to undertake the annual independent groundwater audits, although it is noted in the reports that approval was granted in a letter dated 22 November 2006.	Sighted the Independent Groundwater Audit, included in the AEMRs: 2008 - Prepared by Aqua Terra; 2009 - Prepared by RPS Aquaterra; 2010 - Prepared by RPS Aquaterra; 2011 - Prepared by RPS Aquaterra;		No timeframe for issue of the AEMR or annual independent groundwater audit reports is included in the approval conditions. The auditor notes that as of September 2014, the 2013 AEMR was not available on the Rocla website and only a draft version of the 2013 annual independent groundwater audit report was available. It is recommended that these reports are completed and made available on the website within a reasonable timeframe (e.g. by 31 March of the following year).
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 shall commission a suitably qualified hydrogeologist, whose appointment has been approved by the Director-General, 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 shall: (a) be prepared in consultation with the NOW, 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 Director-General.	NC	Commencement of initial sand extraction in Stage 3/6 commenced in April 2011 (refer to Section 2.1 of 2011 AEMR). The auditor reviewed a groundwater modelling report (Heritage Computing, 2013) prepared for the southern extension environmental assessment, that included a 200-year recovery simulation that could be considered as an assessment of the potential long term impact of the final void on groundwater resources. To the auditor's knowledge, neither a quarry closure or post-closure groundwater management plan have been prepared, nor have relevant amendments been made to the site water management plan to address this requirement.	Stage 3/6 not commenced yet. Quarry is more than 5 years from completion.	Revised groundwater modelling provides a long-term assessment of impact to the groundwater resource from the quarry void. However, to the auditor's knowledge, neither a quarry closure or post-closure groundwater management plan have been prepared, nor have relevant amendments been made to the site water management plan to address this requirement.	This requirement does not appear to have carried over to the southern extension project approval (PA 06_0278), which will supersede this development consent upon surrender by Rocla. It is possible that this is due to the assessment of a 200-year post-extraction recovery period in the modelling for the southern extension environmental assessment, and the associated requirement to hold water access licences for long-term groundwater inflow to the pit void. Good groundwater resource management practice dictates that a closure and post closure groundwater management plan be developed, which may incorporate elements of recent modelling and WAL requirements. The plan should be prepared by a suitably qualified hydrogeologist, and should identify commitments to mitigate or reduce unacceptable long term impacts to the groundwater resource (if any).

Compliant	7
Non-Compliant	7
Observation	0
Verification	0
Not Triggered	1
Not Applicable	0

Project Approval 06_0278						
Approval Dated 23 December 2013						
Schedule	Condition No.	Requirement	Compliance C/NC/NT/V	Evidence	Comments	Recommendations
3	Water Supply					
	18	Prior to the commencement of extraction operations in Stage 3/3b, the Proponent shall demonstrate that it had adequate water access licences to account for the maximum predicted volume of water to be used by the project, to the satisfaction of NOW and the Director-General.	NT	Sighted water access licences: WAL20019 - 46 units WAL27185 - 52 units WAL2541 - 6 units	The maximum predicted annual pit inflow from the most recent groundwater modelling (Heritage Computing, 2013) was 74 ML/annum in 2019, with the next highest annual total being 42 ML/annum. Accordingly, the current licenced allocation of 104 units (typically 1 unit = 1 ML) is sufficient to account for predicted pit inflows.	During drought conditions the per unit share volume can be decreased by the Office of Water. Rocla should reassess its WAL allocation is sufficient to cover groundwater inflow to the pit void if climate conditions change and share restrictions are implemented. The current licenced allocation would suffice as long as the per unit share allocation specified by NOW remains above 0.5 ML/unit.
	Compensatory Water Supply					
	19	The Proponent shall provide compensatory water supplies to any owner of privately-owned land where monitoring indicates that the project is causing a reduction in pumping yield from bores of more than 10%, in consultation with NOW, and to the satisfaction of the Director-General.	NT	Refer to audit notes for Schedule 3, Condition 10 of Development Consent No. 94-4-2004.	Refer to audit notes for Schedule 3, Condition 10 of Development Consent No. 94-4-2004.	Refer to audit notes for Schedule 3, Condition 10 of Development Consent No. 94-4-2004.
		The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified.	NT	Section 6.4 of the Site Water Management Plan.		
		If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director General for resolution.	NT	Section 6.4 of the Site Water Management Plan.		
		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 Director-General.	NT	Section 6.4 of the Site Water Management Plan.		
	Water Management Plan					
	20	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must:	NT	To the auditor's knowledge, no revision has been made to the Site Water Management Plan.	Teven Quarry has an existing Site Water Management Plan; however, this SWMP reflects existing operations under DA 94-4-2004. A WMP reflecting the operations approved by PA06_0278 is yet to be produced and the due date for submission of this plan has not yet been reached.	It is recommended Rocla ensure the WMP is updated to reflect ongoing operations at Teven Quarry as approved by PA06_0278, ensuring the relevant Project Approval conditions and any applicable commitments from the EA are captured. The auditor notes that there were some non-compliances with the consent conditions from development consent DA 94-4-2004 that are also applicable to this project approval, and there are a few new conditions in this project approval that are not addressed in the current Site Water Management Plan.
		(a) be prepared in consultation with OEH and NOW, and be submitted to the Director-General for approval by the end of June 2014; and				
(b) in addition to the standard requirements for management plans (see condition 3 of schedule 5), include a:						
(i) Site Water Balance, that includes:						
• details of:						
o sources and security of water supply;						
o water use and management on site;						
o any off-site water transfers;						
o reporting procedures; and						
• measures that would be implemented to minimise clean water use on site;						
(ii) Surface Water Management Plan, that includes:		NT	Interim impact assessment criteria for monitoring and private bores is included in Section 6.4 of the Site Water Management Plan. However, impact assessment criteria for GDEs are not included in the SWMP. Reference is made to annual inspections of vegetation as part of a Rehabilitation and Landscape Management Plan, however this Plan does not include impact assessment criteria for GDEs (or even identify GDEs that require monitoring), and does not consider impacts to groundwater dependent surface water bodies.			
• detailed baseline data on surface water flows and quality in waterbodies (including creeks and swamps) that could potentially be affected by the project;						
• a detailed description of the water management system on site, including the:						
o clean water diversion system;						
o erosion and sediment controls;						
o dirty water management system;						
o discharge limits in accordance with EPL requirements; and						
o water storages;						
• surface water and stream health impact assessment criteria;						
• a program to monitor and report on surface water flows and quality in waterbodies (including creeks and swamps) that could potentially be affected by the project;						
• a program to validate the surface water model, and comparison of monitoring results with modelled predictions; and						
• groundwater impact assessment criteria for monitoring bores, privately-owned bores and groundwater dependent ecosystems;						
• a program to monitor and report on:						
o groundwater inflows to the extraction operations:						
o the impacts of the project on:						
- regional and local aquifers;						
- privately-owned groundwater bores;						
- groundwater dependent ecosystems and riparian vegetation,						
• a program to validate the groundwater model for the project, and comparison of monitoring results with modelled predictions; and		NT	New condition in this project approval that is not expressly addressed in the SWMP			
(iv) a Surface and Ground Water Contingency Strategy, that includes:						
• a protocol for the investigation, notification and mitigation of identified exceedances of the surface water and groundwater impact assessment criteria;	NT	Section 6.4 of the Site Water Management Plan.				
• measures to mitigate and/or compensate potentially affected landowners, including provision of alternative long-term supply of water to the affected landowner that is equivalent to the loss attributed to the project; and	NT	Section 6.4 of the Site Water Management Plan.				
• the procedures that would be followed if any unforeseen impacts are detected during the project.	NT	New condition in this project approval that is not expressly addressed in the SWMP.				

Compliant	0
Non-Compliant	0
Observation	0
Verification	0
Not Triggerred	15
Not Applicable	0

