



Calga Sand Quarry

2009 Annual Environmental Management Report

Compiled in conjunction with:



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1. INTRODUCTION

1.1 Scope

This report has been prepared in accordance with *Condition 5(4)* of Development Consent 94-4-2004 to record the activities and environmental monitoring undertaken within and surrounding the Calga Sand Quarry during the period 1 January to 31 December 2009 and to outline the planned activities and environmental monitoring planned throughout 2010. This condition requires the preparation of a report that:

- *identifies the standards and performance measures that apply to the development (see Section 1.2);*
- *describes the works carried out throughout the last 12 months (see Section 2);*
- *describes the works that will be carried out throughout the next 12 months (see Section 6);*
- *includes a summary of the complaints received during the past year, and compares this to the complaints received in previous years (see Section 3.3);*
- *includes a summary of the monitoring results for the development during the past year (see Section 4);*
- *includes an analysis of these monitoring results against the relevant:*
 - *impact assessment criteria;*
 - *monitoring results from previous years; and*
 - *predictions in the EIS and Amendment Report (see Sections 4.1.3, 4.2.3, 4.3.3 and 4.4.4);*
- *identifies any trends in the monitoring results over the life of the development (see Section 4.1.3, 4.2.3, 4.3.3 & 4.4.4);*
- *identifies any non-compliance during the previous year (see Section 5); and*
- *describes what actions were, or are being taken to ensure compliance (see Section 5).*

In addition, the following conditions specifically request that the subject information is incorporated in this document.

- *3(18) The results of the yearly Water Management Plan review including:*
 - *details of the review for each sub-plan (see Sections 2.6 and 4.1.1);*
 - *the results of monitoring (Annexures 2 and 3);*
 - *the results of the independent groundwater audit (including a copy of the report) (Annexure 3); and*
 - *details of the measures undertaken/proposed to address any identified issues (see Sections 4.1 and 4.2 and Annexure 3).*
- *3(32c) A progress report on the re-vegetation and maintenance of the acoustic barrier (Section 2.9/Annexure 4).*



- 3(35d) *A report on waste management and minimisation* (Section 2.4 and 2.7).
- 3(39b) *annual production data* (Section 2.3).

Within 1 month of the completion of each AEMR, *Condition 5(10)* requests that the Applicant:

- *provide a copy of the AEMR to the Council, relevant agencies and the CCC;*
- *ensure that a copy of the AEMR is made publicly available at the quarry; and*
- *a copy of the document is placed on the Rocla website;*

to the satisfaction of the Director-General.

Throughout this document, the land on which the Calga Sand Quarry is located (Lot 1, DP229889) is referred to as the "Quarry Site".

1.2 Standards and Performance Measures

Rocla is required to operate the approved activities at the Calga Sand Quarry in accordance with the consent and licence listed in **Table 1.1**.

Table 1.1
Calga Sand Quarry – Consents and Licences

Consent/Licence	Issue Date	Expiry Date
Development Consent 94-4-2004	28 October 2005	1 July 2030
Environment Protection Licence No 11295	16 December 2002	24 July*
* Licence Anniversary Date		

No modifications or variations to the consent or licence outlined in **Table 1.1** were sought within the reporting period.

Relevant conditions within Development Consent 94-4-2004 which nominate specific environmental criteria are as follows.

- Noise
 - 3(2) – noise emissions (day, evening and night).

Each of the relevant criteria are presented in Section 4.3 in conjunction with the assembled monitoring results.

- Air Quality
 - 3(8) – dust emissions (suspended and deposited).

Each of the relevant air quality goals are presented in Section 4.4.2.

In addition, *Condition 3(20)* requires Rocla to establish and subsequently maintain a meteorological station in the vicinity of the quarry, to the satisfaction of the DECCW and the Director-General of the Department of Planning. The station is required to as a minimum, unless otherwise authorised by the Director-General, to monitor daily rainfall and evaporation in accordance with the requirements in *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW*.



Relevant conditions within Environment Protection Licence (EPL) 11295 which nominate specific environmental criteria are as follows. As noted above, details of the relevant criteria are presented in Section 4.3.2.

- Noise
 - L6.1 – noise emission limits (day, evening and night).
 - Conditions L6.2 and L6.3 specify the monitoring locations, adjustments due to tonal noise and relevant meteorological conditions for compliance.
- Dust
 - EPL 11295 does not nominate any dust criteria, hence reliance is placed on the criteria nominated in Condition 3(8) within Development Consent 94-4-2004.

The performance criteria relevant to assessing groundwater impacts are nominated either in the Site Water Management Plan (Section 6.4) or from the Freshwater Ecosystem Protection Guideline drawn from ANZECC (2000).

Neither Development Consent 94-4-2004 or EPL 11295 nominate specific water quality criteria for any surface water discharges from the Quarry Site. Condition L1 of EPL 11295 does, however, nominate that the “licensee must comply with Section 120 of the *Protection of the Environment Operations Act 1997*. For the purposes of assessing compliance, reliance is placed upon the water quality limits nominated in the approved Site Water Management Plan (see Section 4.2.2).

1.3 Site Management and Responsibilities

The management of the Calga Sand Quarry to ensure all conditional requirements are satisfied is the responsibility of the NSW/Victorian Operations Manager, Mr John Gardiner. Day to day responsibility for the site activities rests with the Quarry Manager, Mr Paul Slough. Other persons involved with site management and compilation of quarry-related documentation and monitoring data include:

- Pat McCue – Quarry Superintendent (Mr McCue is responsible for Quarry Operations and Planning);
- Mr Alex Echt – NSW Development Manager (Mr Echt is responsible for Government liaison); and
- Mr Col Davies – Carbon Based Environmental Pty Ltd (Mr Davies is responsible for the monthly collection of water samples, recording of groundwater levels and assembly of deposited dust and meteorological data).

1.4 Document Preparation

The following information and data for this report has been drawn from the Rocla website and documents commissioned or held by Rocla.

- Carbon Based Environmental Pty Limited – 2009 Surface Water and Deposited Dust Results Summary (**Annexure 2**).



- Aquaterra Consulting Pty Ltd – Calga Sand Quarry Annual Groundwater Audit (**Annexure 3**).
- Rocla Annual Environmental Management Reports for 2008.

This document has been assembled by Mr Rob Corkery (Principal) and Ms Tabitha Kuypers (Environmental Scientist) with R.W. Corkery & Co. Pty Limited in conjunction with Mr Paul Slough (Quarry Manager) and Mr Alex Echt (NSW Development Manager).



2. OPERATIONS DURING THE REPORTING PERIOD

2.1 Introduction

Table 2.1 lists the principal activities / milestones that occurred at the Calga Sand Quarry throughout 2009. Figure 2.1 presents the location(s) of the activities described.

Table 2.1
Overview of Principal Site Activities Throughout 2009

January	<ul style="list-style-type: none"> Continued to strip overburden from Stage 3/2 and stockpiling overburden on Stage 2/3.
February	<ul style="list-style-type: none"> Independent Environmental Audit report commissioned.
March	<ul style="list-style-type: none"> Install new main screen on washplant from a 4.6m x 1.5m to a 4.9m x 1.8m CCC meeting held on 15th March.
April	<ul style="list-style-type: none"> Cleared area adjacent to Voutos house in preparation for storage area Installed divider barriers for safe entry and exit of light vehicles.
May	<ul style="list-style-type: none"> Compliance Inspection Audit completed by Julia Pope from the Department of Planning in regards to the Development Consent conditions. Independent Environmental Audit report completed by Umwelt (Australia) Pty Ltd.
June	<ul style="list-style-type: none"> Annual Rehabilitation Assessment Report completed by Andrew Littlewood from T.R.E.E.S.
August	<ul style="list-style-type: none"> CCC meeting held on 10th August. Attended first "Calga Village Residents Action Group" meeting
September	<ul style="list-style-type: none"> Received dredge back from Windsor to dredge silt from Dam 10 & Dam 12. Started jaw crusher trials using oversized material from the washplant. Installed 12/10 pump and associated pipe work to transfer silt to Stage 3/1. Installed 10/8 pump and associated pipe work to transfer freshwater from Stage 3/1 to Dam 10.
October	<ul style="list-style-type: none"> Installed 12/10 pump and associated pipe work to transfer silt to Stage 3/1. Installed 10/8 pump and associated pipe work to transfer freshwater from Stage 3/1 to Dam 12. Installed Power Factor Correction Unit to power supply to reduce power consumption.
November	<ul style="list-style-type: none"> Started rehabilitation ground works adjacent to quarry entrance.
December	<ul style="list-style-type: none"> Due to hot weather over Christmas period, planting deferred until autumn. Silt placement transferred from Stage 2/5.

2.2 Extraction Operations

During the reporting period, extraction operations were conducted solely in Stages 3/2A and 3/2B. Extraction operations involved:

- ripping and pushing up friable sandstone within Stage 3/2A; and 3/2B
- overburden removal within Stage 3/2B.

Figure 2.1 displays the locations where extraction operations were undertaken.

Table 2.2 records the monthly/ annual sales of the various products produced at the Quarry during 2009. This data was provided to I&I NSW – Mineral Resources in accordance with the requirements of *Condition 3(39b)*.



Table 2.2
Calga Sand Quarry – 2009 Sales

	Double Washed	Yellow Brick	White Brick	Fill	Factory Double Washed	Overburden	Total
Jan	9,090	1,732	1,836		586	62	13,307
Feb	7,143	1,680	1,310		1,226	769	12,128
Mar	11,256	2,410	1,984	8	570	31	16,261
Apr	8,689	1,583	1,624		758		12,654
May	10,554	1,665	1,602		1,180		15,001
Jun	9,526	1,316	1,384		392	598	13,217
Jul	13,206	1,633	2,430		1,075		18,344
Aug	14,052	1,682	2,339		451		18,524
Sep	16,205	1,811	2,564		1,793		22,373
Oct	14,459	1,673	1,954		448		18,534
Nov	14,126	1,811	2,281		1,397		19,615
Dec	11,529	1,884	1,890		1,269		16,571
Total 2009	139,835	20,880	23,200	8	11,145	1460	196,528

2.3 Processing and Product Stockpiling

During the reporting period, sand processing was undertaken using both the wash plant and the mortar sand plant. Approximately 80% of the sand extracted was washed to produce a range of concrete sand products. The remaining sand was dry screened (and blended at times with washed sand) to yield premium mortar sand products.

2.4 Waste Management

All silt produced from the sand washing process was placed in Stage 2/5 until the end of October 2009, and then placed in Stage 3/1 throughout the remainder of the reporting period. All oversize material was stockpiled adjacent to Stage 2/3.

Throughout 2009, clay overburden from Stage 3/2B was stockpiled on the southern end of Stage 2/3 and will be used for capping of Stage 2/5 when capping commences in 2010.

2.5 Site Infrastructure and Services

No changes were undertaken to the site infrastructure and services throughout the reporting period.

2.6 Water Management

Throughout the reporting period, no changes were undertaken to the water management circuits on site. Water management on site was undertaken largely in accordance with the approved Site Water Management Plan, dated February 2006. Rocla continued to gravity feed water accumulating in Stage 2/5 to Dams 7a and 7b/c and pump water for washing to Dam 10. Water for dust suppression was pumped from Dam 10 to a truck filling point immediately east of the wash plant.



