



Boral Cement Limited

Berrima Works

Operation Environmental Management Plan

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6	April 2020	Greg Johnson	Update to outcomes of MOD 9 POPT, MOD 11 (Use of HiCal 50), MOD 12 (Isotainer and whole of site noise limit)
7	June 2023	Sharon Makin	Update to include new requirements from Modification 13 and 15 development consent Update to include review based on DPHI comments
8	April 2025	Sharon Makin	Update to include requirements of Mod 14 Development Consent Update to include revised AKF5 specification Update to include review for usage of AKF1
9	23 march 2026	Sharon Makin	Review in response to DPHI RFI in relation to AKF1



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1 INTRODUCTION

1.1 Purpose and objectives

Boral Cement Limited (Boral Cement) operates an integrated clinker and cement manufacturing operation at the Berrima Cement Works (the Works). The objective of this OEMP is to establish a framework for environmental management in accordance with the development consents and to meet the requirements of Boral Cement's Health, Safety, Environment and Quality (HSEQ) management system.

Boral Cement is committed to operating the plant and equipment in a manner consistent with today's environmental and safety standards and in accordance with the conditions specified in:

- Development Approval (DA) for the Upgrade of Kiln 6 (DA No. 401-11-2002-i);
- DA for Cement Mill 7 (DA No. 85-4-2005-i);
- consolidated DA for modifications 1 to 15 to DA No. 401-11-2002-i (Appendix 1);
- Environment Protection Licence (EPL) No. 1698 (Appendix 2); and
- the requirements of the NSW *Protection of the Environment Operations Act 1997* (POEO Act) and NSW *Protection of the Environment Legislation Amendment Act 2011* (POELA Act).

The MOD 14 to DA No. 401-11-2002-I is the most recent approval that relates to the works being granted.

The MOD 9 consent approval applies to the Works and was granted in October 2016. MOD 9 was for use of solid waste derived fuel (SWDF) as an energy source; changes to the air emission limits of particulate matter, nitrous oxides and volatile organic compounds; and construction and operation of a fuel storage and kiln feeding system.

This OEMP was subsequently revised in April 2020 to meet the requirements of conditions relating to the continual use of SWDF after the POPT and consent changes related to MOD 11 (Use of HiCal50) and MOD 12 (Isotainer and Whole of Site Noise Limits).

A further revision has been undertaken in May 2023 with the Approval of Modification 13 (for the construction and operation of a chloride bypass system and the use of woodchips as a standard fuel) and 15 (construction and operation of AKF5 storage and feed infrastructure).

Modification 14 was approved in November 2023 triggering a further update of the OEMP. This update has been aligned with a review of the AKF5 specification as well as the recommencement of AKF1.

Modification 14 approved an increase in the volume of SWDF received and used as a non-standard fuel in Kiln 6, permitted 24/7 delivery of SWDF, construction of a new site access road and additional SWDF storage infrastructure.

Boral Cement is committed to ensuring that all employees and contractors who perform work on any site for which it is responsible, carry out the work to high standards for health, safety and the environment. To achieve this, Boral Cement will ensure all personnel are aware of the conditions applying to the operations, the responsibilities of all personnel in ensuring compliance, the management plans for ensuring compliance, together with auditing and reporting requirements to verify

compliance with the conditions.

1.2 Description of the Works

Boral Cement uses a dry process in the manufacture of clinker which is a continuous process day and night. The cement manufacture process is shown in Figure 1.

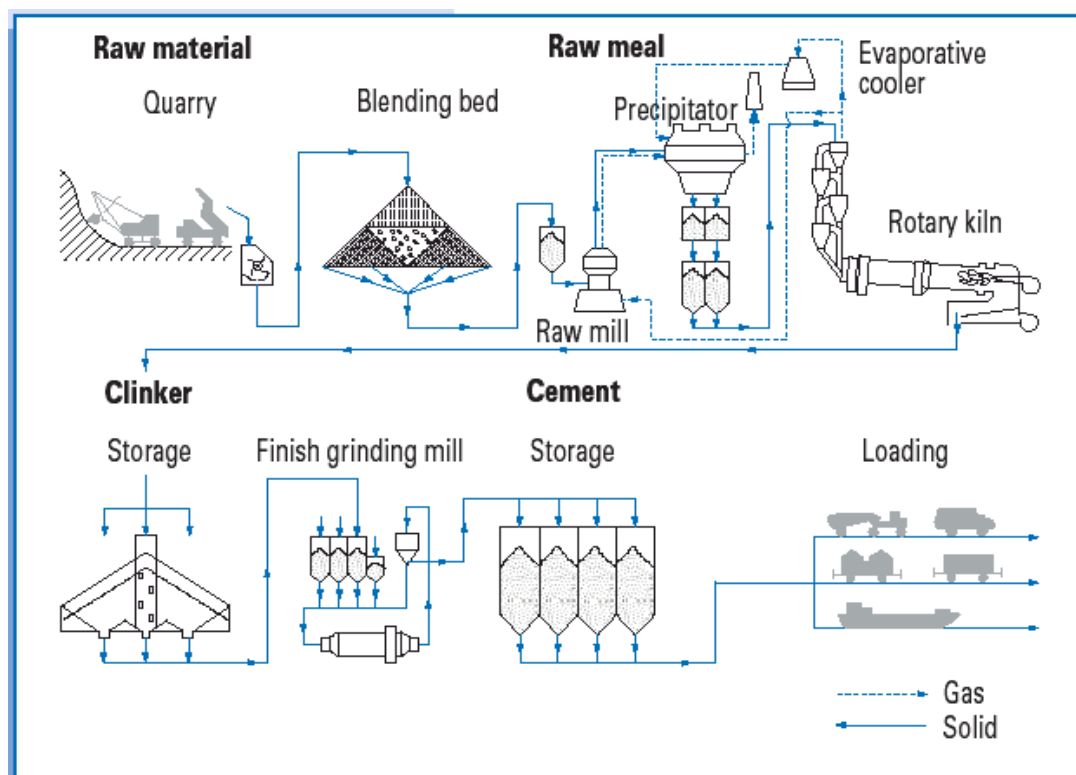


Figure 1 Manufacturing process diagram

The sequence of operations at the Works is described in Table 1, including the air emission potential and water consumption.

Table 1 Sequence of operations at the Works

Operation	Description	Potential for Emissions	Water consumption
Unloading of limestone	Limestone/limestone-yellow shale mixture from Marulan Limestone Mine is transported to the Works by rail. The limestone is unloaded and taken by conveyor belt to the preblend heaps. The conveying system is enclosed and the transfer points are fitted with dust collection systems.	Minor fugitive dust emissions	Water is not used in this operation

BERRIMA WORKS
OPERATION ENVIRONMENTAL MANAGEMENT PLAN



Quarrying	Blue shale is excavated using a bulldozer.	Minor fugitive dust emissions	Water is used for the suppression of fugitive dust emissions
Additive raw material delivery, storage and transfer	The additive materials such as blue shale, yellow shale, iron source materials, slags, reclaimed cement fibreboard and gypsum for cement production are delivered to the works by road. They are stockpiled on site in open stockpiles and/or on the Shale Pad. The various materials are transferred to the Shale Pad or Shale Crusher by road transport and/or front-end loaders. The Shale Pad area is bunded and covered. The area is swept to remove spilt material.	Significant fugitive dust emissions	Water is used for the suppression of fugitive dust emissions
Coal and HiCal 50 delivery and storage	Raw coal is delivered by road and unloaded through a hopper for transfer to the raw coal blending system. When coal shed is full, excess coal is stored in an open stockpile. The raw coal is wet and the transfer system and coal blending is enclosed. HiCal 50 is stored on the shale pad, bunded and tarped.	Very minor fugitive dust emissions	Water is used for the suppression of fugitive dust emissions
Additive raw material crushing	The additive materials, blue shale, yellow shale, iron source materials are crushed in the Shale Crusher and transferred to the Proportioning Bins. The crusher is fitted with a dust collection system and conveying system is enclosed and the transfer points are fitted with dust collection systems.	Minor fugitive dust emissions	Water is not used in this operation
Preblending	The limestone from rail deliveries is laid down in a series of windrows on the preblend heap. These windrows form layers that help to reduce the effect of any variations in the limestone quality. One heap is being built while the other is being reclaimed. The operation is contained in a	None	Water is not used in this operation



	building.		
Reclaiming	The preblend heaps are reclaimed by the reclaimer. The reclaimer scrapes limestone from the face of the heap across all the layers laid down during the build of the heap. This further reduces any effects of variation in limestone quality. The operation is contained in a building.	None	Water is not used in this operation

The SWDF subject to MOD 9 and Mod 13 is received at a storage shed where it is blended prior to use. The blended material is transferred and weighed via a conveyor to control the fuel dosage to the calciner. Another conveyor moves the material to the pre-heater tower to be discharged via a chute into the twin shaft screw conveyor.

The operation process for AKF5 subject to Mod 15 (AKF-5 tyre chips), differs to that for Mod 9 and 13 SWDF and is as follows... ..

- AKF-5 tyre chips will be delivered directly from licensed producers typically using tippers with or without walking floor conveyors to unload directly into a set of external ground bins or the unloading docking station;
- initially and when the AKF-5 tyre chips are required to be stored, this will occur in two (2) rows of three (3) external bunkers, six (6) in total. The rows of bunkers are spaced 18m apart. The bunkers will be 4m x 5m wide and up to 3.7m high, each spaced 2m apart as per Fire and Rescue NSW (FRNSW) Guidelines.
- The bunkers will be constructed using concrete blocks. Each bunker will be limited to the storage of 12.5t, with external site storage capacity of 75t to ensure acceptable compliance with the FRNSW Guidelines and distances to buildings, boundaries, and combustible materials.
- A Front End Loader (FEL) will be used to push up material to ensure the AKF-5 tyre chips are stored, where reasonably practicable, within the toe of the storage bunkers.
- The FEL will feed the AKF-5 tyre chips into the hopper / docking station
- Once the dual docking station is operational, AKF-5 tyre chips will be primarily delivered in walking floor trucks and discharged directly into the unloading docking station, where the AKF-5 tyre chips will primarily remain on the delivery truck and be unloaded as required.
- The walking floor trucks would stay several hours while material is slowly fed into the docking station hopper for direct usage in the plant at up to 4.5t per hour. Should there be an unscheduled plant stoppage and the docking station hoppers are full, the tyre chips will be temporarily stored in the external ground bunkers.
- The AKF-5 tyre chips will be fed from the docking station, by an open conveyor onto the existing SWDF conveyor CO75.

The operation process for SWDF (woodchips) subject to Mod 14 requires the construction of storage facilities and woodchips must not be received at site until the new site access road approved under MOD 14 is constructed and operational.



The operations subject to MOD 13, 14 and 15 are permitted to operate 24 hours per day, seven days a week.

The use of AKF1 (liquid oily residues including Heavy Fuel Oils (HFOs)) was approved in Modification 1 of the Consent in September 2005, with the environment protection Licence (EPL) being varied in December 2008.

Notwithstanding the more recent modifications, AKF1 remains an approved non-standard fuel. In 2024, the EPA and DPHI were advised of Boral's intention to recommence the use of AKF1 fuels.

Discussions continued in 2025 with the EPA and DPHI to establish QA and QC protocols (refer Appendix 14), PoP trial details and procedures for the recommencement of the use of AKF1 fuels. As part of these discussions, a Fire Service Study (refer Appendix 12 ESIP) was also undertaken to ensure storage of the fuels was adequate.

1.2.1 Non-Standard Fuels

Boral is currently approved to use Group 1 non-standard fuels; AKF5 (used and unwanted tyres), HiCal 50 (spend aluminium electrode) and AKF1 (liquid oily residues comprising of recovered oil from the treatment of wash waters, oils, dewatered sludges and grease trap emulsions) and Group 2 non-standard fuels SWDF (Solid waste derived fuel including wood waste and refuse derived fuel).

The consent, as modified, only permits the use of the standard and non-standard fuels outlined in Condition 1.4A Table 1. The consent does not approve the establishment of a protocol for general use of Non-standard Fuels other than those permitted.

Fuel	Category	Tonnes per annum	
Natural Gas, Fuel Oil, Diesel	Standard Fuel	No limits	
Coal	Standard Fuel	No Limit	
Coke Fines	Standard Fuel	No Limit	
Hi Cal 50	Non-Standard Fuel	10,000	
AKF1	Non-Standard Fuel	20,000	
AKF5	Non-Standard Fuel	30,000	
Wood Waste	Non-Standard Fuel	100,000	≤ 250,000 combined
RDF	Non-Standard Fuel	200,000	
Woodchips	Standard Fuel	150,000	

The use of AKF-5 requires a detailed specification and quality control / assurance protocol. This has been developed and approved by both the EPA and DPHI. The specification is included as Appendix 13 and allows for tyres to be sourced from accredited Tyre recyclers, who source from accredited tyre collectors under the Tyre Stewardship Australia (TSA) Accreditation.

Auditing of the requirements of the specification and the suppliers is outlined in the Specification as well as section 7.2.3.

This specification was reviewed in May 2024 to allow for tyres to be sourced from licenced tyre recyclers (accredited* under TSA) who receive tyres which have been separated out of non-conforming waste at licenced resource recovery facility. This change to the specification were approved by the DPHI and the EPA.

The specification for AKF1 is included in Appendix 14. This specification was reviewed and updated in May 2025 in line with the recommencement of AKF1 fuels.

Along with annual tonnage limits per annum, there are also restriction on use during Kiln start-up and feed rates. These consent and licence restrictions are outlined in Appendix 4 CMT-ENV-003 Berrima Air Quality Management Plan.

1.3 Location and surrounding landuse

The facility is located south of New Berrima in the Southern Highlands of NSW in the Wingecarribee LGA (**Figure 1**). Access is via Taylor Avenue, which connects the facility with the Hume Highway, approximately 2.5km to the west.

The facility is located on Boral owned land, which comprises approximately 135 ha. The area to the south east of the Cement Works between New Berrima and Moss Vale is part of the Moss Vale Enterprise Corridor (MVEC) set aside for employment generating development under the *Wingecarribee Local Environmental Plan 2010* (Wingecarribee LEP).

The closest residential zone to the works site is located in New Berrima, approximately 650m north of the No 6 kiln stack at the closest points. New Berrima residential area is flanked to the south and east by "Private Recreation" areas.

The site is situated within the Wingecarribee LGA and is zoned Heavy Industrial (IN3). The land to the immediate east and south is zoned General Industrial (IN1).



Figure 1: Site Location Regional Context

1.4 Availability of OEMP

The Site Operations Manager is responsible for distribution of the OEMP to relevant personnel. Copies of the OEMP are issued on version finalisation to the personnel in Table 2. A copy of the OEMP is available in the site office and on the Boral Berrima Cement website (<https://www.boral.com.au/locations/boral-cement-works-berrima>).

Table 2 Availability of OEMP

Position	Issue date
Site Operations Manager	As per footer
Production Manager	As per footer
Technical Manager	As per footer
Maintenance Manager	As per footer
Environmental Sustainability Manager/ Environmental Business Partner	As per footer
Team leaders / Front Line Supervisors	As per footer

1.5 Definitions

Terms used in this OEMP are described in Table 3.

Table 3 Definitions

DA	Development Approval - a consent issued by the Department of Planning and Environment, detailing site-specific construction and operational conditions that Boral Cement must comply with
DPHI	NSW Department of Planning, Housing and Infrastructure
EMS	Environmental Management System
EPL	The site-specific Environment Protection Licence (No 1698) issued and managed by the NSW Environment Protection Authority
EPA	NSW Environment Protection Authority
OEMP	Operation Environmental Management Plan



2 REGULATORY REQUIREMENTS

2.1 Development consent

The requirements for the OEMP are stated under conditions 6.3, 6.3A, 6.3B, 6.4 (noise management plan, air quality management plan, emergency plan, safety management system, water supply strategy, and transport code of conduct), 6.4A (air quality management plan), 6.4B, 6.4C, 6.4D, 6.4E, 6.5 and 6.6 of the MOD 14 consent.

Information required for inclusion in the OEMP is listed in Table 4.

Table 4 OEMP requirements

Condition	Detail	Section
6 Environmental management		
Operational environmental management plan		
6.3	The Applicant shall prepare and implement an Operation Environmental Management Plan (OEMP) to detail an environmental management framework, practices, and procedures to be followed during the operation of the cement works upgrade. The plan shall include, but not necessarily be limited to:	This Plan
a	identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the cement works upgrade, including all consents, licences, approvals, and consultations;	2.1, 2.2, 2.3
b	a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;	4
c	overall environmental policies and principles to be applied to the operation of the cement works upgrade;	3
d	standards and performance measures to be applied to the cement works upgrade, and a means by which environmental performance can be periodically reviewed and improved;	Air quality management plan, dust management plan, water management plan, waste management plan, noise management plan, Section 7
e	management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; and	3
f	the Management Plans listed under condition 6.4 of this consent.	Appendices to this Plan
g	the Vegetation Management Plan approved under condition	This Plan will



	6.2A.	be prepared and the OEMP amended and submitted for approval prior to the construction of the proposed road associated with Mod 14 approval.
6.3A	Prior to the receipt of any Non-Standard Fuels, the Applicant shall update the OEMP required by condition 6.3 of this consent to include the following:	
a	details of how the development will comply with the requirements of the EPL and development consent throughout operation;	Appendix 4
b	an update of the Community Consultation and Engagement Plan required by Condition 6.1A that outlines how the community will be kept informed about the results of the PoP trials and the ongoing use of SWDF;	Appendix 3
c	the environmental monitoring requirements outlined in the EPL and under conditions 4.1A, 4.1B and 4.1C of this consent; and	Appendices 4 and 11
d	an updated Air Quality Management Plan, as required by condition 6.4A of this consent.	Appendix 4
	Following completion of the PoP trials, the Applicant shall amend the Operation Environmental Management Plan, to the satisfaction of the Secretary, to describe any proposed changes to limits contained in the EPL and development consent including detailed justification for the changes and relevant results of the PoP trials.	Section 1.2.1 & Appendix 4
6.3B	Prior to the use of isotainers on the site, the applicant must update the OEMP required by condition 6.3 of this consent and include:	
a	A Code of Practice for operators of the isotainer reach stacker to reduce L _{max} noise events	Within Appendix 6
b	Noise monitoring and management requirements specified in conditions 3.3 to 3.6 of the consent.	Appendix 6
6.4	As part of the OEMP for the cement works upgrade, required under condition 6.3 of this consent, the Applicant shall prepare and implement the following Management Plans:	
a	A Noise Management Plan to outline measures to minimise the impacts from the operation of the cement works upgrade on local noise levels.	Appendix 6
b	An Air Quality Management Plan to outline measures to minimise and manage any impacts from the operation of the cement works upgrade on local air quality.	Appendix 4
c	An Emergency Plan for the cement works upgrade.	Appendix 7



d	A Safety Management System, covering all operations at the cement works upgrade and associated transport activities involving any hazardous materials.	Intranet
e	a Water Supply Strategy with an aim to investigate and pursue options for the use of alternative sources of water, such as stormwater reuse or treated effluent from sewage treatment plants, in order to reduce the dependency on extracting water from the Wingecarribee River.	Appendix 11
f	The Applicant shall prepare and implement a Transport Code of Conduct to outline management of traffic conflicts associated with the construction and operation of the cement works upgrade.	Appendix 9
6.4A	As part of the updated OEMP required under condition 6.3A of this consent, the Applicant shall provide an updated Air Quality Management Plan prepared in consultation with the EPA.	Appendix 4
6.4B	Prior to the commencement of operation of the permanent AKF5 storage and feed infrastructure approved under MOD 15 to this consent, the Applicant must review and update the OEMP to the satisfaction of the Planning Secretary. The must include a review and update of the following sub-plans:	
a	Water Management Plan;	Appendix 11
b	Emergency Plan; and	Appendix 7
c	Pollution Incident Response Management Plan.	Appendix 8
6.4C	The updated OEMP required by condition 6.4B must include:	
a	all operational requirements for the receipt, storage and handling of AKF5;	1.2
b	details of the water management measures in the AKF5 storage area, including a description of how this area will be drained and connected to the existing stormwater management system;	Appendix 11 section 8
c	details of how the fire water catchment bund adjacent to the AKF5 storage area will be managed during a storm event and following a fire incident;	Appendix 11 Section 8
d	the quality assurance / quality control measures for AKF5, including the approved AKF5 fuel specification and details of how non-conforming waste will be managed; and	Appendix 13
e	an Emergency Services Information Package prepared in accordance with the Fire and Rescue NSW Fire Safety Guideline - Emergency services information package and tactical fire plans.	Appendix 12. The current ESIP covers AKF1 and AKF5 storage and management.
6.4D	Prior to the commencement of operation of the site	The water



	access road approved under MOD 14, the Applicant must review and update the Water Management Plan, a sub-plan of the OEMP required under condition 6.3 of this consent, to the satisfaction of the Planning Secretary. The updated Water Management Plan must: a) be prepared in consultation with WaterNSW; and b) include a maintenance program for the stormwater quality improvement devices and drainage infrastructure along the new site access road for the life of the development.	management plan will be revised and the OEMP amended and submitted for approval prior to the construction of the proposed road associated with Mod 14 approval.
6.4E	Prior to the commencement of operation of the new SWDF storage infrastructure approved under MOD 14, the Applicant must review and update the Emergency Services Information Package required under condition 6.4C of this consent and the Emergency Plan required under condition 6.4B of this consent, in consultation with FRNSW to the satisfaction of the Planning Secretary.	The ESIP will be prepared and the OEMP amended and submitted for approval prior to the construction of the proposed SWDF storage facilities associated with Mod 14 approval.
6.5	Within three years of the commencement of operation of the cement works upgrade, and at least every three years thereafter, the Applicant shall undertake a formal review of the Operation Environmental Management Plan (OEMP) required under condition 6.3 of this consent. The review shall ensure that the OEMP is up-to-date and all changes to procedures and practices since the previous review have been fully incorporated into the OEMP. The Applicant shall notify the Secretary, Council and the EPA of the completion of each review, and shall supply a copy of the updated OEMP to those parties on request. The Applicant shall also make any revised OEMP available for public inspection on request.	7.3
6.6	Prior to the use of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall update the Operation Environmental Management Plan required under conditions 6.3 and 6.4 of this consent to reflect any modifications required at the development in light of the use of Non-Standard Fuels. Where the Applicant considers that the Operation Environmental	This Plan

	Management Plan does not require any amendment then a clear justification of this must be provided. The Applicant shall not receive or use Non-Standard Fuels at the development until the Secretary has approved the amended Operation Environmental Management Plan. Updating of the Plan shall include, but not necessarily be limited to providing additional detailed measures to the Air Quality Management Plan to minimise the emissions of air pollutants (including toxic pollutants and dioxins) to ensure compliance with the EPL.	

2.2 Environment Protection License

The Works are scheduled premises under the POEO Act and are licensed for cement or lime works, energy recovery, extractive industries, resource recovery and waste storage under EPL 1698. This document is amended if necessary after modifications to the development consents and the most recent version can be found on the EPA's public register at <http://www.epa.nsw.gov.au/prpoeoapp/>. A hard copy of the EPL is kept in the site office.

The EPL provides environmental management, monitoring and reporting criteria, including specific controls for air quality, water, waste and noise.

2.3 Relevant legislation

For the current list of Federal and State regulations relevant to this OEMP refer to Boral Group HSEQ Standard GRP-HSEQ-1-04 Legal and Other Requirements.

3 STRATEGIC FRAMEWORK FOR ENVIRONMENTAL MANAGEMENT

3.1 Statutory requirements

The Work's environmental performance criteria are defined in the consolidated consent and EPL 1698. All environmental monitoring and management will be carried out in accordance with the requirements of the consent and the EPL.

3.2 Boral HSEQ management system

Boral has adopted a standardised approach to documenting its Health and Safety, Environment and Quality Management System (HSEQ MS) to ensure best practice in its core operating activities is in place and measured.

Boral has a HSEQ MS to:

- assist company employees and contractors to identify and understand their responsibilities in meeting their HSEQ obligations;
- provide the primary requirements for implementation of a common HSEQ MS;
- establish the implementation guidelines that sit between relevant legislative, regulatory and Industry standard requirements, and the businesses functional and/or line of business operating procedures; and
- provide a single point of reference for company compliance to Australian standards, and to various accreditation bodies.

A full description of the Boral HSEQ can be found in GRP-HSEQ-1-01 Management System Framework and Operational Control. Boral is committed to the protection and minimisation of impact upon the environment and the communities in which it operates. In order to achieve this, Boral's activities will be guided according to its Environmental Policy. The procedure; GRP-HSEQ-1-02 HSEQ Policy discusses in detail the development and review of HSEQ Policies.

Boral Group level objective requirements can be found in GRP-HSEQ-1-05 Objective Targets and Improvement Plans procedure. Environmental objectives are communicated to persons working under Boral control who have the ability to influence the achievement of environmental compliance on site.

The environment elements within the HSEQ define the minimum standard required for environment management and provide operational controls required to manage environmental risk. The elements are discussed in the following HSEQ documents:

- GRP-HSEQ-8-02 Water Management;
- GRP-HSEQ-8-03 Land Management;
- GRP-HSEQ-8-04 Waste Management;
- GRP-HSEQ-8-05 Noise Management; and
- GRP-HSEQ-8-06 Air Management.
- GRP-HSEQ-8-07 Spill Management Model Protocol
- GRP-HSEQ-8-08 Ecosystems and Biodiversity Model Protocol.

3.3 Hazards and risks

3.3.1 Hazard identification and risk management

The Boral HSEQ MS procedure GRP-HSEQ-1-03, Hazard Identification and Risk Management outlines the risk management protocol and framework for management of risk within Boral. The risk assessment process for the environment for a site is captured within the site specific 'Aspects and Impacts Register'.

3.3.2 Environmental aspects and impacts

Risk management applies to every decision that could affect the environmental objectives and outcomes of the site, from the construction method selected to the treatment of issues.

An aspects and impacts register (CMT-ENV-010 Berrima Cement Works Aspects and Impacts Register) has been developed for the site in accordance with Boral's GRP-HSEQ-8-01 Environmental Aspects and Impacts Procedure and using risk management procedures outlined within HSEQ-1-03 Hazard and Risk Identification and Risk Management.

4 ROLES AND RESPONSIBILITIES

4.1 Organisational structure

The management structure at the Works is shown in Figure 2. This structure considers the roles and responsibilities of this OEMP and its associated documents.

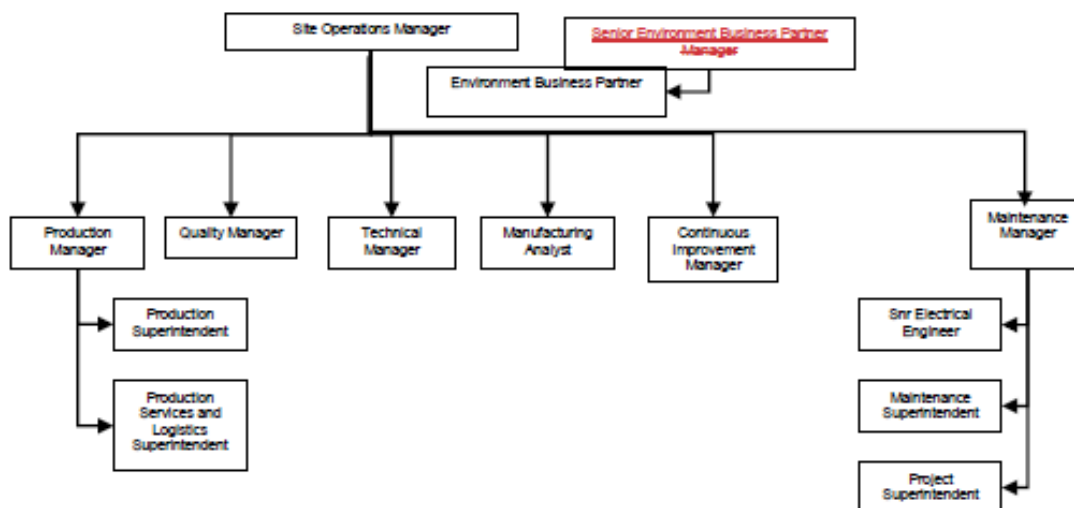


Figure 2 Management team structure

4.2 Roles and responsibilities

The general responsibilities in Table 5 apply in relation to this OEMP.

Table 5 Environmental roles and responsibilities

Role	Responsibility	Authority
<i>National General Manager – Operations</i>	Responsible for ensuring adequate resources are available to implement the OEMP, including: ✓ delegate environmental management responsibilities to personnel.	✓ to suspend site work if health and safety of personnel and/or environment is endangered; and ✓ to suspend an individual from activities for disregarding the OEMP following consultation with Operations Manager.
<i>Site Operations</i>	Responsible for ensuring the operation	✓ to direct personnel to change work



<i>Manager</i>	of the OEMP. This includes: ✓ approve the OEMP and any revisions which are incorporated; ✓ implementing Boral environmental policy on site; ✓ ensuring site environment performance objectives and targets are established, monitored and achieved; ✓ defining responsibilities for the OEMP; ✓ ensuring availability of the resources; ✓ communicating the importance of the OEMP and meeting statutory and regulatory requirements; ✓ conducting management reviews of the OEMP; ✓ ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities; ✓ verifying the implementation of corrective and preventive actions; and ✓ recognising and responding to community concerns.	practices if they are deemed to be hazardous to the environment and/or health and safety of personnel; ✓ to temporarily suspend site work if health and safety of personnel and/or environment is endangered, pending further consideration with the National General Manager – Operations; ✓ to temporarily suspend an individual from activities for disregarding the OEMP.
<i>Production Manager / Technical Manager / Maintenance Manager</i>	Responsibility and authority to ensure that the site environmental objectives are achieved. This includes: ✓ ensuring staff are trained and updated on environmental awareness, responsibilities, instructions and procedures; ✓ ensuring environmental incidents are investigated and corrective and preventative action taken; ✓ ensuring operations comply with the conditions of Development Approval, EPL and relevant legislation; ✓ developing and implementing plans to respond to incidents and minimise environmental harm;	✓ to direct personnel to change work practices if they are deemed to be hazardous to the environment and/or health and safety of personnel; ✓ to temporarily suspend site work if health and safety of personnel and/or environment is endangered, pending further consideration with the Site Operations Manager; and



	✓ ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities; ✓ ensuring proper management of waste and chemical products for careful handling, storage or removal.	✓ to temporarily suspend an individual from activities for the OEMP.
<i>Senior and Environmental Business Partner</i>	Responsibility and authority to ensure the effectiveness of the OEMP. This includes: ✓ reporting material environmental incidents to 5 compulsory government authorities in accordance with the Berrima Cement Works SOP CMT-ENV-015; ✓ ensuring the site-specific OEMP components are established, implemented and maintained; ✓ ensuring all personnel are aware of the EPL, DAs and other regulatory requirements relating to the operations and environmental performance; ✓ reporting on the performance of the OEMP and need for improvements; ✓ reporting non-compliances with the EPL, DAs and other relevant regulatory requirements; ✓ promoting the awareness of environmental performance and requirements in the organisation; ✓ coordinating the auditing of the Non-standard Fuel Program to ensure compliance with the DA; ✓ coordinating verification of the implementation of corrective and preventive actions. ✓ working with Technical Manager on establishing and updating procedures for the tracking of non-standard fuels, ✓ monitoring the tracking procedures and ensuring compliance with procedures. ✓ coordinating the development and	✓ to direct personnel to change work practices if they are deemed to be hazardous to the environment and/or health and safety of personnel; ✓ to temporarily suspend site work if health and safety of personnel and/or environment is endangered, pending further consideration with the Site Operations Manager; and ✓ to temporarily suspend an individual from activities for disregarding the OEMP.



	maintenance of systems for the collection, analysis and reporting of emission data and environmental performance; ✓ assuring that environmental monitoring data are published monthly on the Boral Berrima website. ✓ assisting in the development, implementation and maintenance of programs to review and improve the environmental performance of the Works.	
<i>Team Leaders / Front Line Supervisors</i>	Responsible for the prevention of poor environmental performance arising from work methods and work environment. This includes: ✓ identifying, reducing and preventing environmental problems; ✓ immediately reporting environmental incidents to the Operations Manager or HSE Advisor; ✓ monitoring operations and maintenance work to ensure emissions are maintained within approved levels; ✓ initiating preventive actions to minimise frequency and recurrence of environmental incidents; ✓ investigating and reporting of environmental incidents; and ✓ initiating corrective actions to repair harm caused by environmental incidents.	✓ To report activities in which the environment and/or health and safety of site personnel is at risk.
<i>All personnel</i>	All personnel are required to: ✓ report all incidents, near misses and hazards; ✓ comply with all environmental policies, procedures and instructions; and ✓ participate in environmental training, meetings and toolboxes.	



Personnel responsible for implementing this OEMP are in Table 6, which will be updated each time there is a change of personnel.

Table 6 Site safety and environmental personnel

Role	Personnel	Emergency contact number
EGM Cement	Rajeev Ramankutty	0419 355 502
Operations Manager	Waqas Ali	0401 899 099
Technical Manager	Gabriel Paicu	0401 897 301
Environmental Sustainability Manager	Greg Johnson	0401 893 420
Environmental Business Partner	Sharon Makin	0401 894 185

5 COMMUNICATION AND REPORTING

5.1 Communication and consultation

Communication both internally and externally allows Boral to provide and obtain information relevant to environmental compliance, including information related to its significant environmental aspects, environmental performance, compliance obligations and recommendations for continual improvement.

It is imperative that a prompt and clear answer is provided by the site when complaints or information is received from external sources. Communication shall be conducted in accordance with GRP-HSEQ-2-02 Communication and Consultation with an emphasis that all communication adheres to the following:

- transparent;
- appropriate;
- truthful;
- factual;
- include all relevant information; and
- be understandable by interested parties.

Boral Cement communicates with the local community through media releases and briefings, letter drops, community meetings and community groups, newsletters, open days, plant tours, and through information posted on the Boral Cement website.

Boral Cement has an established Community Liaison Committee (CLC) that complies with the MOD 14 consent. The group meets approximately three to four times each year. The CLC has representatives of Boral Cement, the local community and council. All other local residents are also invited to the meetings. The meetings are professionally facilitated. The agenda for each meeting is determined in consultation with the members and has generally covered all aspects of the Works' operation, environmental management plans, monitoring data, and incident reports.

The agenda typically includes environmental monitoring program and results with members given an opportunity to review and comment on the Works performance. Boral Cement will provide scientific and technical support and respond to comments and any recommendations from the committee.

Records and minutes of the meeting are prepared and made publicly available on Boral's website. Copies of meeting minutes will be provided to DPHI on request.

5.2 Reporting

Annual reporting is required to both DPHI and EPA within two months following the end of the Licence year (the licence anniversary date is 1 May).

5.2.1 Annual Environmental Management Report

The Annual Environmental Management Report (AEMR) is prepared in accordance with Condition 7.3 and 7.3A and is submitted to DPHI, EPA and Council. It is required to include as a minimum as per Condition 7.3:

- a) details of compliance with the conditions of this consent;
- b) a copy of the Complaints Register (refer to condition 0 of this consent) for the preceding twelve month period (exclusive of personal details), and details of how these complaints were addressed and resolved;
- c) a comparison of the environmental impacts and performance of the cement works upgrade against the environmental impacts and performance predicted in the SEE and the additional information listed under condition 0;
- d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person;
- e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the cement works upgrade have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;
- f) identification of trends in monitoring data over the life of the cement works upgrade to date;
- g) a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period; and
- h) environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results.

And Condition 7.3A,

In each Annual Environmental Management Report submitted after the First Year Monitoring and Modelling Assessment Report required in accordance with condition 7.6 has been submitted, the Applicant shall include the details of the use of all Non-Standard Fuels at the development, including, but not necessarily limited to:

- a) the nature, quantity and quality of Non-Standard Fuels used at the development;
- b) details of any fuels that did not meet the Fuel Specification, including the source of the fuels and how the rejected fuels were managed or disposed of;
- c) a review of the results of the Non-Standard Fuels Tracking Program and the Non-Standard Fuels Quality Control Management procedures; and
- d) the results of all monitoring undertaken in accordance the requirements of this consent and an assessment of these monitoring results, including comparison of stack emissions against the concentration limits set in condition 3.10.

The Secretary may require Boral Cement to address matters in relation to the environmental performance of the Kiln 6 Upgrade as reported in the AEMR.

5.2.2 Annual Return

The Annual Return to EPA is prepared in accordance with Condition R1 of the EPL and comprises at a minimum:

- statement of compliance;

- monitoring and complaints summary;
- statements of compliance for:
 - license conditions;
 - load based fees;
 - requirement to prepare pollution incident response management plan;
 - requirement to publish pollution monitoring data; and
 - environmental management systems and practices.

5.2.3 Non-standard fuels first year assessment report

One year after the commencement of the use of Non-Standard Fuels, Boral Cement was to prepare and submit a First-Year Monitoring and Modelling Assessment Report to the Secretary, EPA and the NSW Department of Health.

This report was submitted to the DPHI, EPA and NSW Health on 29 November 2020.

The report included:

- nature, quantity and quality of Non-Standard fuels used;
- assessment of the results of the Continuous Emissions Monitoring, the Ambient Air Quality Monitoring Program [see air quality management plan] and the Process Monitoring requirements of the DA against the emission limits and process parameters and predictions made in the SEE and other documents;
- assessment of the Non-Standard Fuels tracking program including a description and assessment of trends identified;
- assessment of the adequacy of Non-Standard Fuels quality management system and procedures; and
- review of the necessity for continuing or modifying any of the emission monitoring, reporting or pollutant tracking requirements of the DA.

5.2.4 Incident reporting under the MOD 14 consent

Boral Cement will notify DPHI and other relevant agencies of any incident or potential incident with actual or potential off-site impacts on people or the environment immediately after Boral Cement is aware of the incident in accordance with the procedure in Section 6.1. Boral Cement will provide a detailed report of the incident to DPHI and other relevant agencies within seven days of the incident.

5.2.5 Notice of incident to NSW Health

Boral Cement will notify Sydney South West Public Health Unit of any incident with actual or potential significant off-site impacts on human health or amenity as per the requirements of the site PIRMP.

5.3 Complaints and dispute resolution procedure

Boral Cement has an effective complaints procedure operating at the Works in accordance with Condition M6 of the EPL.

Boral Cement displays a sign near the entrance to the Berrima Cement Works in a position that is clearly visible to the public. The sign provides the following information:



- a telephone number on which complaints about operations on the site may be lodged;
- a postal address to which complaints may be sent; and
- an email address to which electronic complaints may be transmitted.

Contact telephone numbers are also provided on the website and repeated at each CLC meeting.

Boral Cement records all complaints received in a complaints register. As a minimum the following information is recorded:

- the date and time, where possible, of the complaint;
- the means by which the complaint was made;
- any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
- the nature of the complaint;
- any action(s) taken by Boral Cement in relation to the complaint, including any follow up contact with the complainant; and
- if no action was taken by Boral Cement in relation to the complaint, the reason(s) why no action was taken.

The record of complaint is kept for at least 4 years and is available for inspection by the EPA or DPHI on request.

6 INCIDENT AND NON-CONFORMANCE RESPONSE

6.1 Incident response

Incidents and non-conformances are managed in accordance with the emergency plan (Appendix 7), site Pollution Incident Response Management Plan (Appendix 8) and safety management system (the system is on the Boral Cement intranet)

The EPL licensee or its employees are required to notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with Part 5.7 of the POEO Act and the Work's emergency response plan.

All incidents must be reported immediately to the Supervisor of the area where the incident occurred. If the Supervisor is not able to be contacted, the person must notify each relevant authority.

Material harm to the environment is defined in Section 147 of the Act as “actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000”.

The relevant authorities are in Table 7.

Table 7 Relevant authorities

DPHI	1300 305 695
EPA Pollution Incidents (24 hours)	131 555
South Western Sydney Local Health District – Public Health Unit	John Birkett 02 8778 0855 1300 066 055 or 02 8738 3000 (after hours)
SafeWork NSW	13 10 50
Fire and Rescue NSW	000

The following information must be included in the notification to the relevant authorities:

- the time, date, nature, duration and location of the incident;
- the location of the place where pollution is occurring or is likely to occur;
- the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- the circumstances in which the incident occurred (including the cause of the incident, if known); and
- the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known.

Written details of the notification will be provided to EPA and DPHI within seven days of the incident in accordance with Condition R2.2 of the EPL.

6.2 Non-conformance response

Boral Cement's incident reporting, investigation and action procedure is implemented when there is an environmental non-conformance with a consent or EPL condition, or the OEMP.

6.2.1 Initial response

The first priority in response to a non-conformance is to ensure that all affected persons are attended to and any person(s) requiring first aid or medical treatment are provided with that treatment as soon as possible. Any first aid injuries shall be managed as necessary. Areas subject to a non-conformance investigation must be made safe and barricaded off (e.g. tape or other barrier) to preserve material relevant to any investigation. The need to secure the scene may be under the direction of WHS or Environmental Authorities for serious non-conformances, with various conditions applied.

6.2.2 Reporting

The Operations and/or Site Manager (or delegate) must ensure that all relevant persons are informed of a non-conformance within any prescribed or defined timeframes. A One Point Lesson document has been prepared for reporting environmental non-conformances at the Works.

Personnel with site safety and environmental responsibilities are provided in Table 6. Contact details for the relevant personnel are displayed on the site HSEQ notice board. Internal non-conformance notification is incident specific. Detailed non-conformance notification details are provided in GRP-HSEQ-3-02-A02 Incident Management Chart.

The relevant senior manager, in consultation with the Environment Business Partner, must notify the Business Unit or Executive General Manager if the regulator or other external agency is to be notified of a non-conformance. Relevant external authorities are in Table 7.

6.2.3 Investigation

All non-conformances shall be investigated to a level commensurate with the risk to identify the cause or causes of a non-conformance and any preventive and/or corrective actions that once implemented are to eliminate recurrence of the non-conformance or reduce the likelihood of a recurrence as far as reasonably practicable.

In consultation with either the WHS Manager or the Environmental Sustainability Manager the site Operations Manager is responsible for delegating investigations of non-conformance. The level of investigation depends on the type and severity of the non-conformance. In general, higher risk non-conformances attract greater resources and formality in the investigation process, which includes specialist skills and methods. An investigation is to be carried out by a competent person or persons as soon as reasonably practicable after a notice of a non-conformance has been received.

6.2.4 Corrective actions

Following an investigation, the non-conformance investigator should consider corrective actions. Corrective actions deal with responding to the result of a non-conformance. Preventive actions aim to prevent recurrences of similar events. Once the root cause(s) and contributory factors of a non-conformance are established, corrective and/or preventive actions should be identified and implemented in response and to stop the non-conformance from happening again.

Controls are to be selected from the Hierarchy of Controls and according to the GRP-HSEQ-1-03 Hazard Identification and Risk Management Standard. An investigator must consult with employees and other workers before finalising any corrective or preventive actions that may impact on operational controls in the workplace.

Furthermore, corrective and preventive actions must be assigned and prioritised (in order of most to least important) with an agreed time set to close them out. All corrective and preventive actions are to be recorded in SeQUENCE.

6.2.5 Closing a non-conformance

Any nominated corrective or preventive action is to be verified for completion and effectiveness before an issue can be closed out, by the responsible manager. Once an action is complete, the nominated employee is to send the issue to a nominated management representative to be verified and signed off. This will be defined in the database or through the assigned action in an incident spreadsheet.

When a non-conformance is corrected, the issue can be closed out by a nominated or required management representative. Issue close outs are tracked in accordance with the GRP-HSEQ-3-01 Monitoring and Review Standard and by the Environment Business Partner. Any follow up requirements are initiated as they are identified.

6.2.6 Incident alerts

Non-conformances that may have broader consequences across the business should be communicated to the business using the HSEQ-2-02-F02 HSE Alert template or the HSEQ-2-02-F03 Quality Alert template, as appropriate.

Before distributing HSE and Quality Alerts, the HS Business Partner or Senior Environment Business Partner must approve them. All personal details of any injured person or party directly involved in a serious non-conformance must be kept confidential.

6.2.7 Non-conformance roles and responsibilities

The personnel in Table 8 have responsibilities relating to non-compliances.

Table 8 Non-compliance roles and responsibilities

Role	Responsibility
Operations Manager	• Ensure all non-conformances are investigated and apply resources as needed.



	• Notify external regulator agencies (e.g. regulators, insurers) when a non-conformance occurs and when required.
Senior Environment Business Partner / Senior HS Business Partner	• Assist in the HSE and Quality non-conformance response and investigation process, as required • Communicate any necessary change(s) from corrective and preventive actions to the relevant authorising manager responsible for the procedure(s) within the Company HSEQ Management System.
WHS or Environmental Business Partner	• Take part in the non-conformance response and investigation process, as appropriate. • Recommend action on non-conformance data and trends, as relevant.
Person identifying incident	• Take immediate action — immediately notify one-up manager.
Incident scene/senior manager	• Contact Emergency Services (ambulance, fire brigade or police), when required. • Preserve the non-conformance scene. • Coordinate help where needed at the incident scene.
Incident team leader	• Assess the risk. Decide and set up a structured approach to link data and activities on non-conformances. • Initiate formal non-conformance investigation using the approved Company template. • Recommend final remedial, corrective and preventive actions to the Regional General Manager. • Communicate critical issue and findings to other businesses (as appropriate).
Employees	• Report all non-conformances to the manager or supervisor as soon as they occur. • Complete the relevant sections in the Incident and Investigation Form as soon as possible.

7 MONITORING, AUDITING AND REVIEW

7.1 Environmental monitoring

The consent requires the following monitoring:

- emissions to air; which is described in the air quality management plan (Appendix 4):
 - Condition 4.1A – continuous emissions monitoring;
 - Condition 4.1B – ambient air quality monitoring; and
 - Condition 4.1C – process monitoring.
- noise monitoring under Condition 6.4(a)(iii), which is described in the noise management plan (Appendix 6).

The EPL requires the following monitoring:

- Condition P1.1 requires the monitoring of emissions to air and dust monitoring, which is described in the air quality management plan (Appendix 4);
- Condition P1.3 requires the monitoring of discharge to waters, which is described in the water management plan (Appendix 11); and
- Condition L5 specifies where noise is to be monitored, however, it does not specify the monitoring frequency. This is described further in the noise management plan.

The results of monitoring are reported in the AEMR and Annual Return. Monitoring results are kept for at least four years and are available onsite to be produced if requested by an authorised officer of the EPA upon request.

As required by the POELA Act, the monitoring data are provided on the Work's website. The summary report is updated each month with all new results received in the preceding month and if results are received from respective labs or providers uploaded by the 10th working day of the next month.

7.2 Environmental auditing

7.2.1 Internal auditing

Boral Cement undertakes periodical environmental audits as part of its environmental management programme. The auditing schedule is prepared each year for all Boral Cement facilities by the Boral Cement Environmental Sustainability Manager. This auditing is primarily for performance improvement and is used to confirm that environmental objectives are being met and to identify opportunities for improvement. Auditing also includes reviews of sites performance against their Environmental Permit Planner.

7.2.2 External auditing

The Kiln 6 Upgrade Development Approval and the Cement Mill 7 Development Approval specify a programme of 3-yearly environmental auditing by an independent, qualified person.

The Planning Secretary of DPHI may direct alternative auditing arrangements and has to approve of the independent auditor before the audit is commenced.

These independent audits are:

- carried out in accordance with ISO 19011:2002 Guidelines for Quality and/or Environmental Management Systems Auditing;
- assessing compliance with the requirements of the licence and DAs;
- assessing operations against predictions made and conclusion drawn in the SEE and other documents; and
- review the effectiveness of the OEMP including any environmental impact mitigation work.

The environmental audit report must be submitted for comment to the DPHI, EPA and the Wingecarribee Shire Council within one month of the completion of the audit.

DPHI may require Boral Cement to undertake works to address the findings or recommendations presented in the environmental audit report.

The next triennial audit is due to be undertaken in November 2026.

7.2.3 Auditing of non-standard fuel program

Within 12 months of the delivery of the first load of any Group 1 or Group 2 fuels Boral Cement arranged an independent audit of the non-standard fuels program. This will be repeated every 12 months thereafter or as otherwise directed by the Planning Secretary. The audits will:

- be carried out in accordance with ISO 19011:2002 Guidelines for Quality and/or Environmental Management Systems Auditing;
- assess compliance with the requirements of the consent, licence and approvals;
- review the management practices and operating procedures for Kiln 6 when using non-standard fuels including the minimisation of dioxin emissions;
- assess the quality control and assurance procedures of the non-standard fuel suppliers including sampling and analysis to ensure compliance with non-standard fuel specifications;
- review the quality control procedures implemented by Boral Cement including assessment of handling, verification and analysis information generated by Boral Cement and received from the non-standard fuel suppliers;
- recommend actions to improve the non-standards fuels program; and
- a review of compliance with the process parameters specified in Condition 3.24 of the MOD 14 consent, including a report of the number of events and total number of hours required to cease the feed of any Group 2 Non-Standard Fuels.

The audit report is submitted for comment to DPHI, the EPA and the NSW Health within 3 months of commissioning of the audit.

DPHI may require Boral Cement to undertake works to address the findings or recommendations presented in the audit report.

The Non-Standard Fuel audit can be undertaken in conjunction with the triennial audits.



7.3 Review of OEMP

Boral Cement will review the OEMP every three years. The review is to ensure that the OEMP is up to date and all changes to procedures and practices since the previous review have been fully incorporated into the OEMP.

Boral will also revise the OEMP if required by the outcomes of an AEMR, Independent Audit or requirements of the Condition of Consent.

Boral Cement is to notify DPHI, EPA and Wingecarribee Shire Council of the completion of each review and to supply a copy of the updated OEMP to those parties on request.

Boral Cement will also make any revised OEMP available for public inspection upon request.

7.4 Environmental awareness and training

In order to implement this OEMP and accompanying management plans, it is important that all staff are aware of the site procedures in relation to environmental management.

The Environmental Business Partner and the Production/Technical Manager will determine the level of training required by site personnel for any changes to this Plan and any associated procedures/work instructions and will develop a training program.

All training completed will be recorded in the Training Records System maintained by HR Department.

Audits and checks will verify compliance with the procedures.

7.5 Record Keeping

All records are to be kept for the time periods required by statutory timeframes and/or Boral policies (Refer to Boral HSEQ Group Standard GRP-HSEQ-2-04-Document Control and Records Management).

7.6 Legal References

The business has access to the applicable legislation relevant to the OEMP via the Boral Group Standards GRP-HSEQ-1-04 Legal and Other Requirements.



APPENDIX 1 MODIFICATION 14 CONSOLIDATED CONSENT

CONSOLIDATED CONSENT

DETERMINATION OF A DEVELOPMENT APPLICATION FOR STATE SIGNIFICANT AND INTEGRATED DEVELOPMENT UNDER SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

The Department has prepared a consolidated version of the consent which is intended to include all modifications to the original determination instrument.

The consolidated version of the consent has been prepared by the Department with all due care. This consolidated version is intended to aid the consent holder by combining all consents relating to the original determination instrument but it does not relieve a consent holder of its obligation to be aware of and fully comply with all consent obligations as they are set out in the legal instruments, including the original determination instrument and all subsequent modification instruments.

SCHEDULE 1

Application made by:	Blue Circle Southern Cement Limited ("the Applicant");
To:	The Minister for Planning;
In respect of:	Lot 1 DP 582277, Lot 2 DP 774598, Lot 22 DP 582276, Lot 100 DP 882139, Taylor Avenue, New Berrima, Wingecarribee local government area;
For the following:	The upgrade of Kiln 6 and associated works at the existing cement works ("the development") as described in <i>Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects</i> prepared by Olsen Environmental Consulting and dated November 2002, and includes the following: • increase in the output of Kiln 6 from 0.98 Mtpa to approximately 1.35 Mtpa; • installation of a raw mill with dust collector and second preheater string with pre-calciner and tertiary air duct; • modification to the raw materials reclaim system; • widening of the cooler bed and upgrade of the heat exchanger and cooler dust collection; • replacement of the clinker handling conveyor; • upgrade of the coal mill capacity; • intermittent use of existing Kiln 5 during periods of Kiln 6 maintenance, shut-down and during high production demands;
Development Application:	Integrated DA No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002, accompanied by <i>Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects</i> prepared by Olsen Environmental Consulting and dated November 2002;
State Significant Development:	Under section 76A(7) of the Act, the proposed development is classified as State significant development because it is a type of development (minerals processing) listed in Schedule 1 of <i>State Environmental Planning Policy No. 34 – Major</i>

CONSOLIDATED CONSENT

Employment-Generating Industrial Development and has a capital investment in excess of \$20 million.

BCA Classification:

Class 8 – HV/LV Switchroom, rawmill building, gas conditioning plant, second pre-heater tower, switchroom for second pre-heater tower, tertiary air duct, coal milling switchroom, coal milling and firing upgrade, cooler heat exchanger, cooler baghouse, cooler switchroom, and clinker conveyor AF05

Note:

- 1) To ascertain the date upon which this consent becomes effective, refer to section 83 of the Act
- 2) To ascertain the date upon which this consent is liable to lapse, refer to section 95 of the Act.
- 3) If the Applicant is dissatisfied with this determination, section 97 of the Act grants him or her a right of appeal to the Land and Environment Court, which is exercisable within 12 months of receiving notice of this determination.

CONSOLIDATED CONSENT

SUMMARY OF MODIFICATIONS

Application Number	Determination Date	Decider	Modification Description
Mod-1	26 September 2005	Minister	Use of Non-Standard Fuels, including AKF5, AKF1 and Hi Cal 50
Mod-2	September 2006	Department	Removal of prohibition on the acceptance of materials classified as “hazardous waste” under the DEC’s waste guidelines
Mod-3	13 February 2007	Department	Small scale trial use of AKF5 over a six-month period
Mod-4	8 May 2007	Department	Increase in usage of coal fines from 1.5 tonnes per hour (tph) to 10 tph
Mod-5	31 August 2008	Department	Approval to use rail for coal delivers
Mod-6	20 June 2012	Former Planning Assessment Commission	Stockpiling of coal for sale and transport to Port Kembla
Mod-7	16 April 2012	Department	Trial and use of Granulated Blast Furnace Slag as raw material additive, not exceeding 150,000 tpa
Mod-8	5 August 2012	Department	Administrative changes to align DA and EPL conditions
Mod-9	5 October 2016	Department	Approval to use SWDF as an energy source and the construction of a SWDF storage shed and kiln feeding system
Mod-10	11 April 2019	Department	Modification to dimensions of the SWDF storage shed and other sundry improvements
Mod-11	25 October 2019	Department	Permit the use of Hi Cal 50 during start-up and shutdown
Mod-12	7 April 2020	Department	Permit the use of isotainers and establish a new site-wide noise limit
Mod-13	31 May 2021	Department	Construct and operate a chlorine bypass system and permit the use of woodchips as a standard fuel in Kiln 6
Mod-14	28 November 2023	Department	Increase volume of SWDF received and used as a non-standard fuel in Kiln 6, permit 24/7 delivery of SWDF, construct a new site access road and additional SWDF storage infrastructure
Mod-15	17 March 2023	Department	Construct and operate new storage and feed infrastructure for tyre chips

CONSOLIDATED CONSENT

SCHEDULE 2

In this consent, except in so far as the context or subject-matter otherwise indicates or requires, the following terms have the meanings indicated:

Act	<i>Environmental Planning and Assessment Act, 1979</i>
AEMR	Annual Environmental Management Report
AKF1	a Non-Standard Fuel, being liquid oily residues comprising of recovered oil from the treatment of wash waters, oils, dewatered sludges and grease trap emulsions, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
AKF5	a Non-Standard Fuel, being used and unwanted tyres, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
Applicant	Boral Cement Limited
BCA	Building Code of Australia
cement works	existing development on the site as at the date of this consent
cement works upgrade	the development to which this consent applies
construction	the demolition of buildings or works, the carrying out of works, including bulk earthworks, and erection of buildings and other infrastructure covered by this consent
Council	Wingecarribee Shire Council
dB(A)	decibel (A-weighted scale)
Department	NSW Department of Planning and Environment or its successors
the development	the development the subject of this development consent as described in the SEE and any subsequent modifications
dioxins	Dioxins and Furans (as TCCD I-TEQs)
dust	any solid material that may become suspended in air or deposited
SEE	Statement of Environmental Effects for the upgrade to Kiln 6 entitled <i>Statement of Environmental Effects – Berrima Kiln 6 Upgrade Project</i> , dated November 2002 and prepared by Olsen Environmental Consulting.
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act, 1997</i>
Fuel Specification	the allowable concentration of certain contaminants in fuel
Group 1 non-standard fuel	for the purposes of this consent, this includes AKF5, Hi Cal 50 and AKF1
Group 2 non-standard fuel	for the purposes of this consent, this includes all SWDFs
Hi Cal 50	a Non-Standard Fuel, being spent aluminium electrode carbon that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of this consent
incident	a set of circumstances causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this consent
kiln Start-up	a start-up period—that is, while the kiln is being brought up to normal operation following a period of inactivity
kiln Shutdown	a shutdown period—that is, while the kiln is being taken out of service from normal operation to inactivity
L _{Aeq} (15 minute)	equivalent average sound pressure level that is measured over a 15 minute period
L _{Amax}	highest sound level measured during a single noise event
Listed pollutants	for the purposes of this consent listed pollutants are antimony, arsenic, beryllium, cadmium, chromium, chromium (hexavalent), cobalt, copper, lead, manganese, mercury, nickel, selenium, tin and vanadium as the elements and their compounds
Minister	NSW Minister for Planning, or delegate
Mtpa	Million tonnes per annum

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Non-Standard Fuel	for the purposes of this consent, Non-Standard Fuels are those approved for use by this consent, being Hi-Cal 50, AKF1, AKF5 and SWDF
operation	any activity that results in the production, or intended production of commercial quantities of cement clinker after commissioning of the cement works upgrade
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Proof of Performance Trial	a trial of the use of a SWDF as a fuel in Kiln 6 to demonstrate the appropriateness of that SWDF at different ratios and feed rates until the desired performance is achieved. Carried out in accordance with an approved Proof of Performance Trial Plan.
Principal Certifying Authority	the Minister or an accredited certifier, appointed under section 109E of the Act, to issue a Part 4A Certificate as provided under section 109C of the Act
RDF	Refuse Derived Fuel – A fuel produced by processing the residues of waste by sorting and shredding (particle size reduction), dehydrating (moisture removal), and removal of recyclable and hazardous materials.
Regulation	<i>Environmental Planning and Assessment Regulation, 2000</i>
RMS	Roads and Maritime Service
site	the land to which this consent applies
Standard Fuel	those fuels permitted to be used at the development, being coal, coke fines, natural gas, fuel oil, diesel and woodchips
SWDF	Solid Waste Derived Fuel (includes Wood Waste and RDF)
the Policy	<i>NSW Energy from Waste Policy Statement</i>
woodchips	a standard fuel that also meets the definition of an eligible waste fuel under the NSW Energy from Waste Policy Statement sourced from fire impacted forestry operations and produced on or adjacent to fire impacted forestry operations
Wood Waste	organic fibrous wood residues and natural wood wastes that result from the processing of waste.

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1. GENERAL

Obligation to Minimise Harm to the Environment

- 1.1 The Applicant shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction and operation of the cement works upgrade.

Scope of Development

- 1.2 ¹The Applicant shall carry out the development in accordance with:
- a) Development Application No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002;
 - b) *Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects*, dated November 2002 and prepared by Olsen Environmental Consulting;
 - c) *Noise Impact Assessment for Kiln 6 Upgrade Project*, dated 4 November 2002 and prepared by Hatch Associates Pty Limited;
 - d) *Air Quality Review – New Berrima Plant, Number 6 Kiln Upgrade*, dated 19 November 2002 and prepared by Holmes Air Sciences;
 - e) additional information supplied to the Department by the Applicant regarding noise, air and water dated 22 January 2003;
 - f) additional information supplied to the Department by the Applicant regarding the design of the second pre-heater tower dated 4 February 2003;
 - g) additional information supplied to the Department by the Applicant regarding air and noise dated 13 February 2003;
 - h) additional information supplied to the EPA by the Applicant regarding discharge points from Lake Quality dated 4 March 2003 and forwarded to the Department by the Applicant on 31 March 2003;
 - i) modification application MOD-2-1-2004-i and accompanying documents lodged on 5 January 2004, including:
 - i. the *Statement of Environmental Effects, Berrima Kiln 6, Non-Standard Fuels and Materials* prepared by Blue Circle Southern Cement; and
 - ii. *Blue Circle Southern Cement Berrima Plant, Proposed Non-Standard Fuels Modifications, Additional Information*, dated 3 June 2004;
 - j) modification application MOD-109-9-2006-i, relating to the definition of HiCal50 as an alternative fuel and prohibition of hazardous wastes;
 - k) modification application MOD-12-2-2007-I, to permit trial use of tyre chips;
 - l) MOD 4 to vary the usage rate of coke fines;
 - m) MOD 5 to permit coal deliveries by rail;
 - n) MOD 7 for the trial and potential full-scale use of Granulated Blast Furnace Slag as an additive raw material in kiln 6 and accompanying documents:
 - i. the Environmental Assessment entitled 'Berrima Cement Works Planning Consent Modification 7 - Environmental Assessment - Use of Granulated Blast Furnace Slag in K6 at Berrima', dated 17 October 2001 and prepared by Boral Cement Limited; and
 - ii. the Response to Submissions report entitled 'Berrima Cement Works – Kiln 6 Development Consent Modification 7', dated 7 December 2011 and prepared by Boral Cement Limited.
 - o) MOD 8 to amend Boral's consent (as modified) to ensure it is consistent with the requirements of the Environment Protection Licence (EPL) for the site.
 - p) MOD 9 for the use of Solid Waste Derived Fuel as a non-standard fuel for Kiln 6 and accompanying documents:
 - i. the Environmental Assessment entitled '*Use of Waste Derived Fuels Kiln 6, Berrima Cement Works DA 401-11-2002 – Modification 9*' dated July 2015 and prepared by Boral Cement Limited; and
 - ii. the Response to Submissions report entitled '*Boral Berrima Cement Works Modification 9 – Use of Solid Waste Derived Fuels Response to Submissions*' dated 22 January 2016 and prepared by SLR Consulting Australia Pty Ltd.

¹ Incorporates an EPA General Term of Approval (A1)

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- q) MOD 10 for the construction of extensions to the Solid Waste Derived Fuel shed in accordance with accompanying documents, namely the Statement of Environmental Effects entitled 'Solid Waste Derived Fuels Shed Extension' dated February 2019 and prepared by Boral Cement Limited.
- r) MOD 11 for the use of Hi Cal 50 during start-up and shutdown in accordance with the 'State of Environmental Effects Hi Cal 50 Modification Application' dated 10 May 2019, prepared by Boral Land and Property Group.
- s) MOD 12 for the commencement of isotainer loading activities and the establishment of a site wide noise limit in accordance with accompanying documents, namely the Statement of Environmental Effects entitled 'Isotainer Loading Operations Modification' dated July 2019, prepared by Boral Cement Limited and correspondence dated 3 October 2019 and 10 January 2020 from Boral Land and Property Group.
- t) MOD 13 for the construction and operation of a chloride bypass system and the use of woodchips as a standard fuel in Kiln 6, in accordance with the 'Statement of Environmental Effects, Chloride Bypass System Modification' dated March 2021, prepared by Boral Land and Property Group and correspondence dated 21 April 2021 and 'Response to Request for Information' dated May 2021 prepared by Boral Land and Property Group.
- u) MOD 14 (DA401-11-2002-i-Mod-14) for the increase in SWDF quantities permitted to be received at the site, 24/7 delivery of SWDF, construction and operation of additional SWDF storage sheds and a new site access road, in accordance with the 'Statement of Environmental Effects, Berrima Cement works, Solid Waste Derived Fuels & Delivery Variation Project' prepared by SLR Consulting Australia Pty Ltd, dated 9 March 2022 and 'Response to Submissions Report' prepared by SLR Consulting Australia Pty Ltd, dated 21 February 2023, Boral Limited's Responses to the Department's Request for Additional Information dated 5 May 2023, 3 July 2023, 25 August 2023 and Amendment Request, prepared by Boral Limited, dated 27 October 2023.
- v) MOD 15 (DA401-11-2002-i-Mod-15) for the construction and operation of AKF5 storage and feed infrastructure, in accordance with the 'S.4.55(1A) Modification Application to Berrima Cement Works' dated 13 October 2022, prepared by SLR Consulting Australia Pty Ltd, 'Response to Submissions Report' dated 16 December 2022 Prepared by SLR Consulting Australia Pty Ltd and correspondence dated 25 January 2023 from Boral Limited to the Department.

If there is any inconsistency between the plans and documentation listed under a) to v) above, the most recent document shall prevail to the extent of the inconsistency. However, conditions of this consent prevail to the extent of any inconsistency.

Limits of Consent

- 1.3 The Applicant shall operate the cement works upgrade to meet the following requirements:
- a) the upgraded Kiln 6 is to be utilised as the primary and principal kiln on the site; and
 - b) the production capacity of the upgraded Kiln 6 is to be limited to ensure that the maximum clinker production capacity of Kiln 6 does not exceed 1.560 million tonnes per annum (rolling annual average).
- 1.3A Deliveries of coal to the site may be made by road or rail transport.

Note: The development application for the cement works upgrade has been assessed and determined as a non-designated development under Part 2, Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*. That Part requires that the cement works upgrade will not significantly increase the environmental impacts of the cement works as posed prior to the commencement of the cement works upgrade. Condition 0 aims to limit the impacts of the cement works, as upgraded in accordance with this consent, to reflect the intent of Part 2, Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*.

Use of Non-Standard Fuels

- 1.4A Subject to meeting the requirements of this consent, and the requirements of a licence issued under the *Protection of the Environment Operations Act 1997* for the site, the following fuels are

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permitted to be received at the site for use at the upgraded Kiln 6 development at the quantities specified in Table 1 and at the firing rates and proportions specified in the EPL.

Table 1 – Permitted Fuels for use in upgraded Kiln 6

Fuel	Category	Tonnes per annum	
Natural Gas, Fuel Oil, Diesel	Standard Fuel	No limits	
Coal	Standard Fuel	No Limit	
Coke Fines	Standard Fuel	No Limit	
Hi Cal 50	Non-Standard Fuel	10,000	
AKF1	Non-Standard Fuel	20,000	
AKF5	Non-Standard Fuel	30,000	
Wood Waste	Non-Standard Fuel	100,000	≤ 250,000 combined
RDF	Non-Standard Fuel	200,000	
Woodchips	Standard Fuel	150,000	

Note: The consent, as modified, permits only the use of the fuels listed above at the specified quantities. The use of any additional fuels would be the subject of appropriate assessment and determination under the Act. This consent, as modified, does NOT approve the establishment of a protocol for general use of Non-Standard Fuels.

1.4AA Notwithstanding condition 1.4A of this consent, the Applicant must not receive any woodchips at the site for any purpose until:

- the new site access road approved under MOD 14 is constructed and operational; and
- the Applicant has notified the Planning Secretary in writing via the NSW Planning Portal that the site access road has been constructed in accordance with the consent and is operational; and
- the Planning Secretary has indicated in writing that it is satisfied the site access road has been constructed in accordance with the consent and is operational.

1.4AB Notwithstanding condition 1.4A of this consent, the Applicant must:

- limit the combined annual usage of SWDF to no more than 50% of total fuel mass until appropriate Proof of Performance Trials are undertaken to the satisfaction of the EPA and the Planning Secretary for each 10% incremental increase in SWDF usage above 50%; and
- not co-fire non-standard fuels permitted by condition 1.4A of this consent unless compliance with the air emission limits on the EPL has been demonstrated for that combination of fuel types through a Proof of Performance Trial to the satisfaction of the EPA and the Planning Secretary.

1.4B AKF5 is approved for use at the development under this consent subject to the necessary approvals under the Act being obtained for storage facilities and kiln feeding infrastructure. Use of AKF5 at the development must be carried out in compliance with the following:

- no AKF5 is permitted to be received at the site until the necessary storage facilities and kiln feeding infrastructure have been constructed in accordance with any such approvals;
- storage of AKF5 must be in accordance with Fire & Rescue NSW (Fire Safety Branch) *Guidelines for bulk storage of rubber tyres*;
- if the Applicant proposes to exceed the stockpile sizes and heights within the above Guidelines, the Applicant must obtain written approval from Fire and Rescue NSW to the satisfaction of the Planning Secretary; and
- any AKF5 stored outside or in storage bunkers must be roofed to exclude rainwater.

1.4BA Notwithstanding condition 1.4B of this consent, the Applicant must undertake an air emissions stack test within three months of the commencement of use of AKF5 as a fuel in Kiln 6, or as otherwise agreed to by the Planning Secretary. The Applicant must:

- carry out the air emissions stack test to the satisfaction of the Planning Secretary;

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- b) undertake the air emissions stack test at a high feed rate of 4.5 tonnes per hour of AKF5, or as otherwise approved by the EPA;
- c) engage a suitably qualified and experienced person(s) to carry out the air emissions stack test;
- d) notify the Planning Secretary and EPA prior to the commencement of the air emissions stack test; and
- e) report the outcomes of the trial and stack test to the Planning Secretary and the EPA within one month of the conclusion of the test period, unless otherwise agreed by the Planning Secretary.

1.4BB The air emissions stack test report required by condition 1.4BA must include the following information:

- a) the dates and times when the air emissions stack test was carried out;
- b) the rates of feed of AKF5 during the air emissions stack test;
- c) the results of the air emissions stack test, including identification of any non-compliance with the conditions of this consent and the EPL; and
- d) details of additional measures to be implemented to address any non-compliance.

1.4C Hi Cal 50 and AKF1 are approved for use at the development under this consent subject to the detailed design for any necessary storage facilities and kiln feeding infrastructure being approved to the Planning Secretary. In particular, the detailed design shall:

- a) demonstrate that the storage facilities would be appropriately bunded in accordance with the relevant Australian Standards, especially *Australian Standard AS1940-2004* (for AKF1, this would include having a minimum capacity sufficient to accommodate catastrophic failure of the tank and that adequate measures are in place to ensure a catastrophic failure of a tanker during transfer was adequately contained to ensure no off-site discharge;
- b) include appropriate measures to ensure liquids draining from the bund (and other containment areas) are kept separate and adequately treated prior to discharge to the on-site stormwater management system, and demonstrate that these measures were developed in consultation with the Sydney Catchment Authority and Wingecarribee Shire Council; and
- c) include a Fire Safety Study prepared in accordance with the Department's guideline *Hazardous Industry Planning Advisory Paper No. 2: Fire Safety Study* and in consultation with Fire and Rescue NSW.

A construction certificate must not be issued in relation to any necessary storage facilities and kiln feeding infrastructure until the Planning Secretary has approved the detailed design parameters. No Hi Cal 50 or AKF1 is permitted to be received at the site under this consent until any necessary storage facilities and kiln feeding infrastructure have been constructed in accordance with the detailed design parameters approved by the Planning Secretary.

1.4CA Notwithstanding condition 1.4B of this consent, the Applicant is permitted to undertake a single trial of chipped tyres in the development, ahead of the construction of storage facilities and kiln feeding infrastructure for AKF5, provided that the trial meets the following requirements:

- a) no more than 205 tonnes of 2" chipped tyres is to be received at the site for the trial;
- b) the trial shall be conducted over no more than six months from the date of first receipt of the trial materials, after which any remaining trial materials shall be removed from the site to a facility lawfully permitted to accept the materials;
- c) the trial shall be undertaken for the purpose of investigating design and operational aspects of the full-scale use of AKF5;
- d) the trial shall be undertaken in full compliance with the environmental performance standards stipulated in this consent, and the requirements of the Environmental Protection Licence for the site;
- e) the Applicant shall consult with and meet the requirements of the EPA with respect to undertaking the trial, and shall not commence the trial without the prior written approval of the EPA;

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- f) trial materials shall be stored in an area that is sealed, or otherwise treated to the satisfaction of the Planning Secretary, and away from all potential ignition sources;
 - g) the Applicant shall notify Fire and Rescue NSW prior to the receipt of trial materials on the site, and address any requirements with respect to the safe storage of the trial materials;
 - h) the Applicant shall notify the Planning Secretary, the EPA and the Community Liaison Group prior to the commencement of the trial; and
 - i) the Applicant shall report the status and outcomes of the trial to the Planning Secretary and the EPA on a monthly basis from the date that trial materials are first received on the site until conclusion of the trial.
- 1.4D During start-up and shutdown of the development, only the following fuels are permitted to be used:
- (a) natural gas
 - (b) fuel oil
 - (c) diesel
 - (d) coal
 - (e) coke fines
 - (f) Hi Cal 50.
- 1.4E Non-Standard Fuels and woodchips are not permitted to be stored at the site for longer than 3 months, except with the written permission of the Planning Secretary.
- 1.4F No Non-Standard Fuel is permitted to be received at, or used at the development, unless it complies with:
- a) the handling, transporting, sampling, analysis and quality control requirements of this consent;
 - b) any requirements of a licence issued under the *Protection of the Environment Operations Act 1997* for the site; and
 - c) the fuel specification for that specific fuel.
- 1.4G Prior to the receipt of the first batch of a Group 1 Non-Standard Fuel from a particular supplier, the Applicant shall certify in writing to the Planning Secretary that the supplier has implemented appropriate quality control and quality assurance procedures to ensure the Applicant's responsibilities under this consent can be met. At the request of the Planning Secretary, the Applicant shall forward a copy of the supplier's quality control and quality assurance procedures to the Department demonstrating how those procedures cause the Applicant to meet the requirements of this consent.
- 1.4H Prior to the receipt of the first batch of a Group 2 Non-Standard Fuel from a particular supplier, the Applicant shall certify in writing to the Planning Secretary that the supplier has met the pre-qualification requirements set out in the approved *Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels* (Appendix 1 of this consent) and that the Applicant's responsibilities under this consent can be met. At the request of the Planning Secretary, the Applicant shall forward a copy of the supplier's quality control and quality assurance procedures to the Department demonstrating how those procedures cause the Applicant to meet the requirements of this consent.
- 1.4I Prior to the receipt of the first batch of SWDF the Applicant shall develop and submit operational procedures for co-firing SWDF to ensure that the temperature of gas generated in the process is raised to a minimum temperature of 850°C for a minimum of two seconds. Operational procedures must include interlocks in the process control system.
- 1.4J Hi Cal 50 must only be used in Kiln 6 when blended with coal to create a homogenous blend. The concentration of Hi Cal 50 in the coal blend must not exceed 4%.

Provision of Documents

- 1.5 Deleted.

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Statutory Requirements

- 1.6 The Applicant shall ensure that all necessary licences, permits and approvals are obtained and kept up-to-date as required throughout the life of the cement works. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

Compliance

- 1.7 Deleted.
1.8 Deleted.
1.9 Deleted.
1.10 Deleted.

Staged Submission of Strategies, Plans or Programs

- 1.11 With the written consent of the Planning Secretary, the Applicant may submit any strategy, plan or program required by this consent on a progressive basis and/or combine any strategy, plan or program required by this consent.
- 1.12 The Applicant must comply with all reasonable requirements of the Planning Secretary arising from the Department's assessment of:
- a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and
 - b) the implementation of any actions or measures contained in these documents.

2. CONSTRUCTION AND OCCUPATION CERTIFICATION

- 2.1 In relation to the construction and occupation of the cement works upgrade, the Applicant shall provide to the [Planning Secretary](#) and Council the following:
- a) written notification of the appointment of a Principal Certifying Authority;
 - b) copies of all Construction Certificates issued for the cement works upgrade;
 - c) written notification of the intention to commence construction work, to be received at least two working days prior to the commencement of construction. In the event that more than one Construction Certificate is issued, notification shall be provided prior to the commencement of construction the subject of each Certificate;
 - d) copies of all Occupation Certificates issued for the cement works upgrade; and
 - e) written notification of the intention to occupy all relevant components of the cement works for which an Occupation Certificate has issued, to be received at least two working days prior to occupation. In the event that more than one Occupation Certificate is issued, notification shall be provided prior to the occupation the subject of each Certificate.

Note: Part 4A of the *Environmental Planning and Assessment Act 1979* provides specific details of the Applicant's obligations in relation to construction certification and provides the overarching requirements in this regard. These requirements have been summarised and reproduced under condition 0 of this consent to highlight the need for this certification.

- 2.2 Deleted.

3. ENVIRONMENTAL PERFORMANCE

NOISE

Construction Noise

- 3.1 Construction activities associated with the cement works upgrade shall only be carried out:
- a) between 7:00 am and 6:00 pm, Monday to Friday inclusive, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;
 - b) between 7:00 am and 1:00 pm on Saturdays, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;

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- c) at no time on Sundays or public holidays, during periods when the cement works is shut-down, and construction noise is audible at the boundary of the site;
- d) at any time during periods in which the cement works is in operation; and
- e) at any time if construction noise is inaudible at the boundary of the site.

3.1A The Development shall be constructed with the aim of achieving the construction noise management levels detailed in the *Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009). All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the CEMP.

Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5dB(A) to the predicted level before comparing to the construction NML.

3.1B Where Feasible and Reasonable, operation noise mitigation measures shall be implemented at the start of Construction (or at other times during construction) to minimise construction noise impacts.

Operational Noise

3.2 Subject to compliance with the requirements of this consent, the cement works upgrade may be operated 24 hours per day, 7 days per week.

3.3 Noise generated at the site must not exceed the noise limits at the times and location specified in **Table 2** below.

Table 2 – Maximum Allowable Noise Limit (dB(A))

Location	Day ^a L _{A90} (15 minute)	Evening ^b L _{A90} (15 minute)	Night ^c L _{A90} (15 minute)
The Noise Compliance Point (Point 20) – Store Yard Close	58	58	58

a. Day is defined as the period from 7:00am to 6:00pm Monday to Saturday and 8:00am to 6:00pm on Sundays and public holidays.

b. Evening is defined as the period from 6:00pm to 10:00pm.

c. Night is defined as the period from 10:00pm to 7:00am Monday to Saturday and 10:00pm to 8:00am on Sundays and public holidays

Note: The location of Noise Compliance Point (Point 20) – Store Yard Close is shown in **Appendix 2**.

3.3A Any new or upgrade development projects the subject of any modification to this consent must give consideration to the Project Specific Noise Levels identified in the document titled 'PRP-7 Response – Identifying Environmental Noise Objectives For Berrima Cement Plant' dated 27 March 2018, prepared by Recognition Research.

3.4 All vehicles associated with the isotainer loading operations at the site must use a broad-band type reversing alarm instead of a tonal beeper reversing alarm.

3.5 The locomotive of the train transporting isotainers to the site must be relocated to the eastern end of the train as soon as practically possible after arrival during daytime to avoid such movements in evening or night-time periods.

3.6 The Applicant must implement best practice technology with respect to the isotainer reach stacker to reduce L_{Amax} noise events.

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Noise Verification

- 3.6A A Noise Verification Report must be submitted to the satisfaction of the Planning Secretary at the following stages of the development:
- (a) prior to the commencement of construction of the chloride bypass system for Kiln 6
 - (b) within three months of the commencement of operation of the chloride bypass system.
- 3.6B The Noise Verification Reports required by condition 3.6A must be prepared by a suitably qualified and experienced acoustic consultant and include:
- (a) verification of compliance with noise limits specified in condition 3.3 in accordance with the Noise Policy for Industry (EPA, 2017)
 - (b) a detailed analysis of annoying noise characteristics in accordance with Fact Sheet C of the Noise Policy for Industry (EPA, 2017) to confirm the plant and equipment associated with the chloride bypass system does not exhibit annoying noise characteristics
 - (c) identification of any additional mitigation measures required to reduce noise impacts to no greater than the predicted impacts
 - (d) details of when the mitigation measures identified under clause (c) above are to be implemented and how their effectiveness is to be measured and reported to the Planning Secretary.

AIR QUALITY

Dust Minimisation

- 3.7 The Applicant shall design, construct, operate and maintain the cement works upgrade in a manner that minimises dust emissions from the site [and complies with the EPL](#).
- 3.7A The Applicant shall apply all reasonable and feasible measures to minimise the generation of dust from coal stockpiles, including but not necessarily limited to:
- a) compaction of stockpile batters to minimise pick up of dust;
 - b) installation of water sprays or use of a water cart to keep stockpile surfaces wet, if dust is being generated; and
 - c) cessation of stockpile generation during periods of high wind, if dust generation cannot be controlled.
- 3.8 The Applicant shall take all practicable measures to ensure that all vehicles entering or leaving the site and carrying a load that may generate dust are covered at all times, except during loading and unloading. Any such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicle at all times.
- 3.9 All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation or emission of wind blown or traffic generated dust from the site at all times.

Air Quality Discharges

- 3.10 The Applicant shall install and operate equipment in line with best practice to ensure that the Development complies with all load limits, air emission limits and air quality monitoring requirements as specified in the EPL for the site.

3.10A Deleted.

SOILS AND WATER QUALITY

Construction Soil and Water Management

- 3.11 Soil and water management measures consistent with *Managing Urban Stormwater – Soils and Construction Vol.1* (Landcom, 2004) (the Blue Book) shall be employed during construction of the Development to minimise soil erosion and the discharge of sediment and other pollutants to land and/or waters.
- 3.12 All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility.

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- 3.13 All erosion and sedimentation controls required as part of this consent shall be maintained for the duration of the construction works, and until such time as all ground disturbed by the construction works, has been stabilised and rehabilitated so that it no longer acts as a source of sediment.

Water Discharge Limits

- 3.14 The Applicant shall ensure that all surface water discharges from the site comply with the:
- a) discharge limits (both volume and quality) set for the development in any EPL; or
 - b) relevant provisions of the POEO Act.

Watercourse Crossing

- 3.14A The Applicant must design and construct the watercourse crossing on the site access road approved under MOD 14 in accordance with the Department's Fact Sheet *Controlled Activities – Guidelines for watercourse crossings on waterfront land* (2022) and the design in the *Roadworks and Drainage Layout Plan – Sheet 3 prepared by SLR dated 20 February 2023, Revision P3, Drawing Number 660.30247-CI-1103*.

TRAFFIC AND ACCESS

Traffic and Transport Impacts

- 3.15 The Applicant shall establish a bus transport system generally consistent with that identified in section 6.9 of the SEE to transport construction employees to and from the site during the construction period.
- 3.16 The Applicant shall ensure that vehicles associated with the cement works upgrade do not stand or park on any public road or footpath adjacent to the site. Measures provided by the Applicant shall include sufficient parking for all employees and contractors during construction and operation of the cement works upgrade and management measures to ensure that heavy vehicles entering the site are not permitted to queue on Taylor Avenue at any time.

Port Kembla Coal Haulage Campaigns

- 3.16A Deleted.
3.16B Deleted.
3.16C Deleted.
3.16D Deleted.
3.16E Deleted.

- 3.16A The Applicant shall pay a road maintenance levy to Council of 4 cents/tonne/km for the transport of SWDF.

Heavy Vehicle Movements

- 3.16B The Applicant must ensure the maximum number of heavy vehicle trips per day for the delivery of raw materials and Kiln 6 fuels does not exceed a maximum total of 256 trips (128 total heavy vehicle deliveries) as stated in Table 1 of Boral Limited's correspondence to the Department dated 21 September 2023 (Attachment 1 of the Amendment Request prepared by Boral Limited dated 27 October 2023, submitted as part of MOD 14).

Note: For the purposes of this condition and condition 3.16C of this consent, "heavy vehicle trip" means a one-way heavy vehicle movement from one point to another, excluding the return journey.

- 3.16C Notwithstanding condition 3.16B of this consent, the Applicant must ensure the maximum number of heavy vehicle trips per day for the delivery of raw materials and Kiln 6 fuels does not exceed 212 trips (106 total heavy vehicle deliveries) until such time the requirements of condition 1.4AA of this consent have been satisfied.
- 3.16D The Applicant must record and maintain a log of the total number of heavy vehicle movements per day associated with the receipt of raw materials and Kiln 6 fuels. The log must:

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- a) be kept on site and be available for inspection by either Council or Transport for NSW upon request; and
- b) be published on the project website every six months.

WASTE

Waste Management Impacts

3.17 Except as otherwise permitted by this consent and a licence issued under the *Protection of the Environment Operations Act 1997* the Applicant shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing or disposal, or any waste generated at the site to be disposed of at the site.

3.17A Condition 3.17 of this consent only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require a licence under the *Protection of the Environment Operations Act 1997* (POEO Act), and does not include:

- a) any Non-Standard Fuels approved for use at the upgraded Kiln 6 under this consent;
- b) any material normally brought to the site for the purpose of cement clinker production (as detailed in the documents listed under condition 1.2 of this consent);
- c) any material normally recycled or reused within the cement works; and
- d) any material that is subject to a specific waste recovery exemption (RRE) issued by the EPA to exempt that material from the specific clauses of the *Protection of the Environment (Waste) Regulation 2005*.

Alternative Raw Material Trial - Granulated Blast Furnace Slag (GBFS)

3.17AB Prior to the receipt of GBFS on-site, the Applicant must obtain a specific waste Resource Recovery Exemption (RRE) for GBFS from the EPA.

GBFS Trial Requirements

3.17AC Provided that the specific waste RRE is obtained for GBFS, the Applicant shall trial the use of up to 3,000 tonnes of GBFS as an alternate raw material in Kiln 6. The Applicant shall:

- a) undertake the trial over a continuous 3 day period, unless otherwise agreed in writing by the Planning Secretary;
- b) conduct stack testing of all relevant air emissions and trace elements, to the satisfaction of the EPA; and
- c) use quality controlled GBFS only.

GBFS Trial Verification Report

3.17AD Within 1 month of the completion of the GBFS trial, the Applicant shall prepare and submit a Verification Report to the Department to the satisfaction of the Director-General and the EPA. The Verification Report shall include:

- (a) stack emissions monitoring data measured for the duration of the trial;
- (b) copies of all analytical test reports for all substances sampled and tested;
- (c) a comparison of monitoring results from the trial with the relevant EPA standards and requirements, as determined by the EPA.

3.17AE Provided the results of stack testing for the GBFS trial confirm that the air pollutants emitted from the cement Kiln 6 meet the relevant EPA standards and requirements, the Applicant may commence full-scale usage of GBFS as a raw material additive in Kiln 6 at a maximum usage rate that is determined in writing by the Planning Secretary in consultation with the EPA.

Note: the Applicant must not commence full-scale usage of GBFS as a raw material additive in Kiln 6 until it has received written approval from the Planning Secretary. In addition, the maximum usage rate per annum of GBFS in cement Kiln 6 must not exceed 150,000 tonnes per annum.

3.17B Except as provided by any condition of a licence under the *Protection of the Environment Operations Act 1997*, only the following 'Group A' waste may be stored at the site:

- a) AKF1.

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3.17C Except as provided by the condition of a licence under the *Protection of the Environment Operations Act 1997*, the Applicant must assess, classify and dispose of all wastes generated as a result of the use of Non-Standard Fuels in accordance with the NSW EPA's Waste Classification Guidelines.

VISUAL AMENITY

Visual Amenity Impacts

- 3.18 The Applicant shall ensure that all external lighting associated with the cement works upgrade, and including those lights already erected, is mounted, screened, and directed in such a manner so as not to create a nuisance to surrounding properties or roadways. The lighting shall be the minimum level of illumination necessary and shall comply with AS 4282(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.
- 3.19 The second pre-heater tower shall be designed, constructed, operated and maintained in a manner that minimises the visual impact to surrounding properties and roadways.

Note: The second pre-heater tower shall be built in a manner consistent with that described in the additional information provided (identified in condition 0 f)). This includes using the building materials identified and minimising the height of the pre-heater tower.

3.19A Operational stockpiling of RDF in the external bale material storage area (identified on Drawing No.GE-B-2278-01 Revision DP, dated 15 January 2015) is limited to periods of extended kiln downtime for maintenance or repair only. RDF for stockpiling must be delivered in plastic wrapped 1 cubic metre bales. Stockpiles must not exceed a maximum height of five metres.

NON-STANDARD FUELS

Non-Standard Fuels Specifications

- 3.20 For each Group 1 or Group 2 Non-Standard Fuel approved for use at the development the Applicant shall provide a fuel specification, to be approved by the Planning Secretary and the EPA prior to the use of that Non-Standard Fuel at the development under this consent. The Non-Standard Fuel specification shall include, but not be limited to, the minimum calorific value and the maximum quantity of all relevant pollutants, particularly the listed pollutants.
- 3.21 Based on the Non-Standard Fuel specification specified in condition 3.20 the following Non-Standard Fuel specification criteria are required to be met:
- a) deleted MOD-109-9-2006-i;
 - b) for Hi CAL 50 a mercury specification no greater than 1 mg/kg and a cadmium specification no greater than 10 mg/kg;
 - c) for AKF1 a mercury specification no greater than 2 mg/kg and a cadmium specification no greater than 5 mg/kg;
 - d) organohalogen compounds, expressed as chlorine, in any Non-Standard Fuel not to exceed 1% by weight; and
 - e) the waste materials to be used as Non-Standard Fuels must not be diluted or blended to meet any of the fuel specification requirements.

Non-Standard Fuels Pollutant Tracking

- 3.22 Prior to the use of any Group 1 or Group 2 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall implement a Tracking Program that meets the requirements of the Planning Secretary. The Tracking Program shall include, but not be limited to, the identification and recording of the following information in accordance with the time periods specified in condition 3.23:
- a) batch analyses of Non-Standard Fuels received at the development as provided by the suppliers, and the results of any check analyses carried out by the Applicant as part of the quality control management procedures required under condition 6.7 and condition 6.8 of this consent;

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- b) a mass inventory of each listed pollutant entering the process in raw materials, conventional fuels and Non-Standard Fuels, with particular attention to, but not limited to chlorine, mercury, cadmium and chromium;
- c) emission factors for each listed pollutant calculated from inputs, outputs, and measured air emissions, variance in the emissions factors from period to period and an assessment with regards to the reasons for any such variance; and
- d) any adjustments that may be necessary to Non-Standard Fuel specifications arising from the Tracking Program analysis.

3.23 The Applicant shall submit a Report that details and assesses the results of the Tracking Program prescribed in condition 3.22 of this consent to the Planning Secretary. The Report shall be submitted to the Planning Secretary:

- a) every three months in the first year of operation using Non-Standard Fuels under this consent, (to be synchronised with stack monitoring); and
- b) thereafter every six months, or as otherwise agreed to by the Planning Secretary.

Process Parameters

3.24 The Applicant shall cease to burn Non-Standard Fuels in Kiln 6 if:

- a) the temperature is below 850°C in the zone where Non-Standard Fuels are fired or in the vicinity of the pre-calciner; or
- b) the temperature is below 300°C at the outlet of the preheater strings.

3.24A The temperature requirement of Condition 3.24(b) does not apply to the Group 1 Non-Standard Fuel, Hi Cal 50, when Hi Cal 50 is blended with coal in accordance with the requirements of Condition 1.4J.

3.24B Notwithstanding Condition 3.24A, the feed rate of the Group 1 Non-Standard Fuel, Hi Cal 50, must not exceed 400 kilograms per hour when the temperature is below 300°C at the outlet of the preheater strings.

PROOF OF PERFORMANCE TRIALS (POP TRIALS)

PoP Trial Plan

3.25 The Applicant must undertake PoP trials for the burning of SWDF. The maximum length of the trial will be eight months. At least one month prior to the PoP trials, the Applicant shall submit a detailed plan(s) for the PoP trials, to the satisfaction of the Planning Secretary. The plan(s) must be prepared for the co-incineration of each permitted SWDF and be prepared in consultation with the EPA. The plan(s) must, as a minimum:

- a) verify the residence time, the minimum temperature and the oxygen content of the exhaust gas which will be achieved during normal operation and under the most unfavourable operating condition anticipated;
- b) establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in the EPL;
- c) assess the performance of any monitors on the abatement system and establish a maintenance and calibration program for each monitor;
- d) establish criteria for the control of all alternative fuel input including the maximum flow and maximum calorific value;
- e) confirm that all measurement equipment of devices (including thermocouples) used for the purpose of establishing compliance with this approval have been subjected, in situ, to normal operating temperatures to prove their operation under such conditions;
- f) detail procedures for testing the performance of all major process components and emission control systems associated with the processing and burning of SWDF; and
- g) address all relevant requirements of the EPL for the project.

Conduct of Trials

3.26 The PoP trials shall:

- a) be carried out in accordance with a detailed PoP plan(s) approved by the Planning Secretary;
- b) be undertaken by a suitably qualified and experienced person(s);

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- c) test performance of all major process components including emission control systems using no SWDF, and representative fuels containing SWDF designed to cover the range of materials and compositions of SWDF;
- d) identify changes to the Kiln 6 emission control system that may be necessary to achieve compliance with the consent and the EPL; and
- e) demonstrate compliance with the relevant requirements of the EPL, development consent and relevant environmental and safety criteria.

PoP Trial Reports

- 3.27 The Applicant is to report on each PoP trial to the Planning Secretary and EPA. The reports shall be submitted at:
- a) monthly intervals during the PoP trial. The information to be contained in these reports is to be determined in consultation with the EPA as part of the PoP Trial Plan required under condition 3.25; and
 - b) six months after the commencement of the PoP trial. The six month report shall contain but not be limited to the following information:
 - i. the total quantity of SWDF used during the previous six months;
 - ii. the dates and times when the trial commenced and will conclude;
 - iii. the results of stack emissions testing for the analytes and properties specified in any relevant trial plan and baseline emissions for comparison, where applicable;
 - iv. all monitoring data collected for the project during the previous six months;
 - v. identification of any non-compliance with the conditions of this consent and the EPL;
 - vi. details of additional measures to be implemented to address any non-compliance; and
 - vii. an assessment of the suitability of the SWDF for ongoing use.

Copies of the POP Trial Reports shall be made available to the public upon request.

- 3.28 Use of SWDF is not permitted (outside of the approved PoP trials) until such time as the Planning Secretary has indicated in writing that it is satisfied with the results of the six month PoP trial report specified under condition 3.27 b) for an individual SWDF.

FIRE SAFETY

- 3.29 The design and operation of the SWDF storage sheds and silo approved under MOD 14 must comply with FRNSW's *Fire safety guideline – Fire safety in waste facilities (2020)*.
- 3.30 The Applicant must provide adequate emergency vehicle access throughout the site in accordance with FRNSW's *Fire safety guideline – Access for fire brigade vehicles and firefighters (2019)*.

BIODIVERSITY

- 3.31 Prior to any clearing or construction works for the site access road approved under MOD 14, the Applicant must:
- a) purchase and retire 19 ecosystem credits to offset the removal of Plant Community Type 3304 – Southern Tableland Swamp Flats Shrub Woodland at the site;
 - b) purchase and retire 6 species credits to offset the loss of habitat for the *Callocephalon fimbriatum* (Gang-gang Cockatoo) at the site;
 - c) purchase and retire 24 species credits to offset the removal of *Eucalyptus macarthurii* (Paddys River Box, Camden Woollybutt) at the site; and
 - d) retire the ecosystem and species credits in accordance with the requirements of the Biodiversity Offsets Scheme and the *Biodiversity Conservation Act 2016*.
- 3.32 The Applicant must not undertake any clearing or construction works for the site access road approved under MOD 14 until:
- a) the Applicant has provided the Planning Secretary with evidence that the retirement of ecosystem and species credits has been completed in accordance with condition 3.31;
 - b) the Planning Secretary has confirmed in writing that it is satisfied the retirement of ecosystem and species credits has been completed in accordance with condition 3.31.

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4. ENVIRONMENTAL MONITORING AND AUDITING

Air Quality Monitoring

4.1 Deleted.

Continuous Emissions Monitoring

- 4.1A Continuous monitoring equipment for emissions, temperature and fuel feed rate, as required to meet the conditions of this consent and as agreed to by EPA must be installed prior to receipt at the site of and use of Non-Standard Fuels in the upgraded Kiln 6.

Ambient Air Quality Monitoring Program

- 4.1B Prior to the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall develop and implement an Ambient Air Quality Monitoring Program in consultation with, and to meet the requirements of, the Planning Secretary and the EPA. The monitoring program shall be consistent with the EPA's *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*, shall monitor fugitive emission from site works, and be designed to generate sufficient information to meet the requirements of this consent. The ambient monitoring program shall include:
- a) appropriately located ambient air quality monitoring station/s designed to obtain representative air quality data;
 - b) monitoring of TSP, PM₁₀ and PM_{2.5} and other listed pollutants;
 - c) sampling at a continuous or other appropriately justified frequency (to be agreed with the EPA);
 - d) sampling over an appropriate period (to be agreed with the EPA); and
 - e) generation of suitable continuously sampled meteorological data including wind speed, wind direction, temperature, and variability of wind direction (sigma theta) in general accordance with the current Australian Standard/s.

The Applicant must ensure the ambient air monitoring program is underway prior to the PoP Trials starting. The continuation of ambient monitoring may be reviewed after analysis of at least one year's ambient monitoring data.

Process Monitoring

- 4.1C From the time of commencement of the use of Non-Standard Fuels the Applicant shall continuously monitor the following process parameters:
- a) gas temperature (or some agreed equivalent indication of the temperature):
 - i. in or near the firing zone at the main-firing end of the kiln where Non-Standard Fuels are being fired;
 - ii. in the kiln at the feed end;
 - iii. in the combustion zone or zones where Non-Standard Fuels are being fired in or adjacent to the pre-calciner/de-nox system;
 - iv. at the outlet of the suspension pre-heater strings; and
 - v. at the inlet to the electrostatic precipitator and the fabric filter.
 - b) carbon monoxide and volatile organic compounds (or total organic carbon or equivalents as agreed with the EPA) in the exhaust gases after all combustion is complete;
 - c) rates of feed for Non-Standard Fuels AKF1 and AKF5 and the derived rate of feed for Hi CAL 50 in the coal feed;
 - d) rates of feed for SWDF; and
 - e) nitrogen oxides, hydrogen chloride, sulfur dioxide, carbon monoxide, solid particles (total) and volatile organic compounds.

- 4.2 ²If the results of the monitoring required under conditions 4.1A, 4.1B and 4.1C and EPL No. 1698 indicate that the operation of any component of the cement works upgrade, when operating under design loads and normal operating conditions, exceeds the limits imposed

² Incorporates an EPA General Term of Approval (L3.1)

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under [conditions 4.1A, 4.1B and 4.1C](#) and EPL No. 1698, the Applicant shall provide details of remedial measures to be implemented to reduce air quality limits to the levels required.

Details of the remedial measures and a timetable for implementation shall be submitted to the Planning Secretary for Approval within such period as the [Planning Secretary](#) may require, and be accompanied by evidence that the EPA is satisfied that the remedial measures are acceptable.

Water Quality Monitoring

[4.3 Deleted.](#)

[4.3A Deleted](#)

[4.4 Deleted.](#)

Auditing

- 4.5 Within three years of the commencement of operation of the cement works upgrade, and every three years thereafter or as otherwise required by the Planning Secretary, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the cement works upgrade. The independent person or team shall be approved by the Planning Secretary, prior to the commencement of the Audit. An **Environmental Audit Report** shall be submitted for comment to the Planning Secretary, the EPA and Council, within one month of the completion of the Audit. The Audit shall:
- be carried out in accordance with *ISO 14010 - Guidelines and General Principles for Environmental Auditing* and *ISO 14011 - Procedures for Environmental Auditing*;
 - assess compliance with the requirements of this consent, and other licences and approvals that apply to the cement works upgrade;
 - assess the cement works upgrade operations against the predictions made and conclusions drawn in the SEE and other documents listed under conditions 0 a) to 1.2 q), inclusive; and
 - review the effectiveness of the environmental management of the cement works upgrade, including any environmental impact mitigation works.

The Planning Secretary may, having considered any submission made by the EPA and/or Council in response to the Environmental Audit Report, require the Applicant to undertake works to address the findings or recommendations presented in the Report. Any such works shall be completed within such time as the Planning Secretary may agree.

Non-Standard Fuels Auditing

- 4.6 Within 12 months of the receipt of the first load of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall arrange for and bear the full cost of an independent and comprehensive audit of the use of Non-Standard Fuels at the development. Further Audits are to be conducted every 12 months, or as otherwise directed by the Planning Secretary. The Audits are to be carried out by a duly qualified and independent person or team to be approved by the Planning Secretary, and submitted directly to the Planning Secretary, the EPA and NSW Health unless otherwise directed by those agencies. The Audits shall be carried out in accordance with *ISO 19011:2002 - Guidelines for Quality and/ or Environmental Management Systems Auditing* and shall cover all aspects of the use of Non-Standard Fuels at the development, including, but not limited to:
- an assessment of compliance with the requirements of this consent, and other licences and approvals that apply to the use of Non-Standard Fuels at the development;
 - a review of management practices and operating procedures regarding the proper and efficient operation of Kiln 6 whilst using Non-Standard Fuels, especially with regards to the minimisation of dioxins emissions;
 - assessment of quality control and quality assurance measures implemented by the Non-Standard Fuel suppliers, especially with regards to the sampling and analysis undertaken to ensure that Non-Standard Fuels comply with the relevant fuel specification;
 - a review of the fuel quality control management procedures implemented by the Applicant including assessment of the Applicant's handling, processing, verification and analysis of

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- information generated by the Applicant and received from the Non-Standard Fuel suppliers;
- e) suggestion of any recommendations with respect to any of the matters listed above; and
 - f) a review of compliance with the process parameters specified in Condition 3.24 of this consent, including a report of the number of events and total number of hours required to cease the feed of any Group 2 Non-Standard Fuels.

Note: There is nothing that prevents the Applicant from combining the annual auditing requirements provided in conditions 4.5 and 4.6.

4.6A The audit reports required by Conditions 4.5 and 4.6 of this consent must be submitted within three months of commissioning the audit, or as otherwise agreed by the Planning Secretary.

5. COMMUNITY INFORMATION AND INVOLVEMENT

- 5.1 Subject to confidentiality, the Applicant shall make all documents required under this consent available for public inspection upon request. This shall include provision of all documents at the site for inspection by visitors, and in an appropriate electronic format on the Applicant's internet site, should one exist.

Complaints Procedure

- 5.2 Prior to the commencement of construction for the cement works upgrade, the Applicant shall ensure that the following are available for community complaints for the life of the cement works upgrade (including construction and operation):
- a) a telephone number on which complaints about operations on the site may be registered;
 - b) a postal address to which written complaints may be sent; and
 - c) an email address to which electronic complaints may be transmitted, should the Applicant have email capabilities.

The telephone number, the postal address and the email address shall be displayed on a sign near the entrance to the site, in a position that is clearly visible to the public. These details shall also be provided on the Applicant's internet site, should one exist.

- 5.3 The Applicant shall record details of all complaints received through the means listed under condition 0 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:
- a) the date and time, where relevant, of the complaint;
 - b) the means by which the complaint was made (telephone, mail or email);
 - c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the EPA or the Planning Secretary upon request.

Community Liaison Group

- 5.4 Prior to the use of Non-Standard Fuels at the development the Applicant shall establish a Community Liaison Group that has access to all environmental management plans and monitoring data, environmental reporting and tracking and audit reports required by this consent. The Group shall:
- a) be comprised of the following, whose appointment has been approved by the Planning Secretary:
 - i) 1 or 2 representatives from the Applicant, including the person responsible for environmental management at the development;

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- ii) 1 representative from Council; and
 - iii) 3 or 4 representatives from the local community.
 - b) be chaired by a representative agreed to by the Group and approved by the Planning Secretary;
 - c) meet a minimum of once in every 6 month period; and
 - d) review and provide advice on the environmental performance of the development, including providing comment where necessary on any environmental management plans, monitoring results, audit reports, or complaints.
- 5.5 The Applicant shall at its own expense:
- a) ensure that 1 or 2 of its representatives attend the Group's meetings;
 - b) provide the Group with regular information on the environmental management and performance of the development;
 - c) provide access to independent scientific/technical support to assist member in understanding and interpreting information provided, if requested;
 - d) provide meeting facilities for the Group, where necessary;
 - e) arrange site inspections for the Group, if requested;
 - f) take minutes of the Group's meetings and make these minutes available to the public for inspection within 14 days of the Group meeting, or as agreed to by the Group;
 - g) respond to any advice or recommendations the Group may have in relation to the environmental management or performance of the development; and
 - h) maintain a record and a copy of the minutes of each Group meeting, and any responses to the Group's recommendations, to be provided to the Planning Secretary upon request.

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6. ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan (CEMP)

- 6.1 The Applicant shall update the Construction Environmental Management Plan (CEMP) to the satisfaction of the Planning Secretary. The updated CEMP shall:
- a) be approved by the Planning Secretary prior to the commencement of construction;
 - b) identify the statutory approvals that apply to the development;
 - c) outline all environmental management practices and procedures to be followed during construction works associated with the development;
 - d) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;
 - e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - f) describe the roles and responsibilities for all relevant employees involved in construction works associated with the development; and
 - g) include the management plans required under condition 6.1A and 6.2 of this consent.
- 6.1A As part of the CEMP required under condition 6.1 of this consent, the Applicant shall include the following:
- a) Construction Traffic Management Plan;
 - b) Erosion and Sediment Plan;
 - c) Construction Noise Management Plan;
 - d) Construction and Demolition Waste Management Plan;
 - e) a protocol to manage groundwater and contaminated soil; and
 - f) a Community Consultation and Engagement Plan, including complaints management.
- 6.1AB. Prior to the commencement of construction of any works approved under a modification to this consent, the Applicant must update the Construction Environmental Management Plan required under condition 6.1 of this consent to the satisfaction of the Planning Secretary.
- 6.1B The Applicant shall carry out the construction of the development in accordance with the CEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time), unless otherwise agreed by the Planning Secretary.
- 6.2 ³As part of the CEMP for the cement works upgrade, required under condition 6.1 of this consent, the Applicant shall prepare and implement the following Management Plans:
- a) a **Fire Safety Study** for the cement works upgrade, covering all relevant aspects detailed in the Department's publication *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall be submitted for the approval of the Commissioner of the NSW Fire Brigades prior to inclusion in the CEMP.
 - b) a **Hazard and Operability Study** of the cement works upgrade chaired by an independent, qualified person or team approved by the Director-General. The Study shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines*.
 - c) a **Construction Safety Study** for the cement works upgrade, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.
 - d) an **Erosion and Sedimentation Management Protocol** to detail measures to minimise erosion during construction of the cement works upgrade. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:
 - i) details of erosion, sediment and surface water pollution control measures and practices to be implemented during construction of the cement works upgrade; and

³ Incorporates an EPA General Term of Approval (O3.2)

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- ii) demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the DLWC's publication *Urban Erosion and Sedimentation Handbook*, the EPA's publication *Pollution Control Manual for Urban Stormwater*, and the Department of Housing's publications *Soil and Water Management for Urban Development* and *Managing Urban Stormwater – Soils and Construction*.

- 3.33 Prior to the commencement of any clearing works or construction of the site access road approved under MOD 14, the Applicant must, in addition to the requirement under condition 6.1AB, update the CEMP required under condition 6.1 to include a Vegetation Management Plan to the satisfaction of the Planning Secretary. The Vegetation Management Plan must:
- a) include the mitigation measures in Section 5 of the Biodiversity Development Assessment Report prepared by Lodge Environmental, Version 2, dated 3 August 2023, approved under MOD 14;
 - b) include a compensatory revegetation plan to replace any juvenile *Eucalyptus macarthurii* (Paddys River Box) removed as a result of the works approved under MOD 14;
 - c) specify that where successful translocation of *Eucalyptus macarthurii* (Paddys River Box, Camden Woollybutt) is not feasible or reasonable, this species must be sourced from a nursery instead and planted, with a maintenance period specified.
 - d) include measures to protect native vegetation that would be retained on site from construction and operational activities, including tree protection methods outlined in the Australian Standard 4970-2009 *Protection of trees on development sites*;
 - e) specify performance indicators and completion criteria, including criteria for triggering remedial action, if necessary; and
 - f) include a maintenance and monitoring schedule for construction and operation of the development.

Operation Environmental Management Plan (OEMP)

- 6.3 The Applicant shall prepare and implement an **Operation Environmental Management Plan (OEMP)** to detail an environmental management framework, practices and procedures to be followed during the operation of the cement works upgrade. The plan shall include, but not necessarily be limited to:
- a) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the cement works upgrade, including all consents, licences, approvals and consultations;
 - b) a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;
 - c) overall environmental policies and principles to be applied to the operation of the cement works upgrade;
 - d) standards and performance measures to be applied to the cement works upgrade, and a means by which environmental performance can be periodically reviewed and improved;
 - e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; and
 - f) the Management Plans listed under condition 0 of this consent.

The OEMP shall be submitted for the approval of the [Planning Secretary](#) no later than one month prior to the commencement of operation of the cement works upgrade, or within such period otherwise agreed by the [Planning Secretary](#). Operation shall not commence until written approval has been received from the [Planning Secretary](#). Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the OEMP to the EPA and Council as soon as practicable.

- 6.3A Prior to the receipt of any Non-Standard Fuels, the Applicant shall update the OEMP required by condition 6.3 of this consent to include the following:
- a) details of how the development will comply with the requirements of the EPL and development consent throughout operation;

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- b) an update of the Community Consultation and Engagement Plan required by Condition 6.1A that outlines how the community will be kept informed about the results of the PoP trials and the ongoing use of SWDF;
- c) the environmental monitoring requirements outlined in the EPL and under conditions 4.1A, 4.1B and 4.1C of this consent; and
- d) an updated Air Quality Management Plan, as required by condition 6.4A of this consent.

Following completion of the PoP trials, the Applicant shall amend the Operation Environmental Management Plan, to the satisfaction of the Planning Secretary, to describe any proposed changes to limits contained in the EPL and development consent including detailed justification for the changes and relevant results of the PoP trials.

- 6.3B Prior to the use of isotainers on the site, the Applicant must update the OEMP required by condition 6.3 of this consent to include the following:
- a) a Code of Practice for operators of the isotainer reach stacker to reduce L_{Amax} noise events
 - b) the noise monitoring and management requirements specified in conditions 3.3 to 3.6 of this consent.

- 6.4 As part of the OEMP for the cement works upgrade, required under condition 6.3 of this consent, the Applicant shall prepare and implement the following Management Plans:

- a) a **Noise Management Plan** to outline measures to minimise the impacts from the operation of the cement works upgrade on local noise levels. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:
 - i. identification of all major sources of noise that may be emitted as a result of the operation of the cement works upgrade;
 - ii. specification of the noise criteria as it applies to the particular activity;
 - iii. procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the EPA;
 - iv. protocols for the minimisation of noise emissions;
 - v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
 - vi. description of procedures to be undertaken if any non-compliance is detected.
- b) an **Air Quality Management Plan** to outline measures to minimise and manage any impacts from the operation of the cement works upgrade on local air quality. The Plan shall address the requirements of the EPA, should there be any. The Plan shall include, but not necessarily be limited to:
 - i. identification of all major sources of particulate and gaseous air pollutants that may be emitted as result of the operation of the cement works upgrade, including identification of the major components and quantities of these emissions;
 - ii. monitoring of particulate and gaseous emissions from the cement works upgrade, in accordance with any requirements of the EPA;
 - iii. procedures for the minimisation of particulate and gaseous emissions from the cement works upgrade, and the reduction of these emissions over time, where appropriate;
 - iv. protocols for regular maintenance of process equipment to minimise the potential for dust emissions;
 - v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
 - vi. description of procedures to be undertaken if any non-compliance is detected.
- c) an **Emergency Plan** for the cement works upgrade. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. Should an Emergency Plan for the cement works already be in existence, this condition may be satisfied by updating the Plan to reflect changes to the site as a result of the cement works upgrade.
- d) a **Safety Management System**, covering all operations at the cement works upgrade and associated transport activities involving any hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be

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developed in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*. Should a Safety Management System for the cement works already be in existence, this condition may be satisfied by updating the System to reflect changes to the site as a result of the cement works upgrade.

- e) a **Water Supply Strategy** with an aim to investigate and pursue options for the use of alternative sources of water, such as stormwater reuse or treated effluent from sewage treatment plants, in order to reduce the dependency on extracting water from the Wingecarribee River.

Note: Options for the use of alternative water sources considered as part of the Water Supply Strategy may be the subject of a separate approvals process.

- f) The Applicant shall prepare and implement a **Transport Code of Conduct** to outline management of traffic conflicts associated with the construction and operation of the cement works upgrade. The Code shall meet the requirements of Council, NSW Police and the RTA, should there be any. The Code shall include, but not necessarily be limited to:
 - i. details of any restriction to traffic routes;
 - ii. minimum requirements for vehicle maintenance to address noise and exhaust emissions;
 - iii. speed limits to be observed along routes to and from the sites and within the site; and
 - iv. behaviour requirements for vehicle drivers to and from the site and within the site.

- g) the **Vegetation Management Plan** approved under condition 6.2A.

6.4A As part of the updated OEMP required under condition 6.3A of this consent, the Applicant shall provide an updated Air Quality Management Plan prepared in consultation with the EPA. The updated plan shall be prepared by a suitably qualified and experienced person and shall:

- a) verify whether the development is complying with the air quality criteria specified in the EPL, and identify the additional measures to be implemented to ensure compliance should any non-compliance be detected;
- b) validate that the performance of the project reflects the assumptions, estimates and conclusions made in the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9;
- c) provide details of any complaints received relating to air quality generated by the development, and action taken to respond to those complaints;
- d) include ambient monitoring of emissions from the development, including PM_{2.5} and PM₁₀;
- e) include stack emissions monitoring at Kiln 6, including for each pollutant considered and assessed as a part of the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9. The pollutants shall include but not be restricted to individual VOCs, heavy metals, dioxins and PAHs;
- f) include an ambient air monitoring program; and
- g) include details of all proposed emission control measures.

6.4B Prior to the commencement of operation of the permanent AKF5 storage and feed infrastructure approved under MOD 15 to this consent, the Applicant must review and update the OEMP to the satisfaction of the Planning Secretary. The must include a review and update of the following sub-plans:

- a) Water Management Plan;
- b) Emergency Plan; and
- c) Pollution Incident Response Management Plan.

6.4C The updated OEMP required by condition 6.4B must include:

- a) all operational requirements for the receipt, storage and handling of AKF5;

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- b) details of the water management measures in the AKF5 storage area, including a description of how this area will be drained and connected to the existing stormwater management system;
 - c) details of how the fire water catchment bund adjacent to the AKF5 storage area will be managed during a storm event and following a fire incident;
 - d) the quality assurance / quality control measures for AKF5, including the approved AKF5 fuel specification and details of how non-conforming waste will be managed; and
 - e) an Emergency Services Information Package prepared in accordance with the Fire and Rescue NSW Fire Safety Guideline - *Emergency services information package and tactical fire plans*.
- 6.4D Prior to the commencement of operation of the site access road approved under MOD 14, the Applicant must review and update the Water Management Plan, a sub-plan of the OEMP required under condition 6.3 of this consent, to the satisfaction of the Planning Secretary. The updated Water Management Plan must:
- a) be prepared in consultation with WaterNSW; and
 - b) include a maintenance program for the stormwater quality improvement devices and drainage infrastructure along the new site access road for the life of the development.
- 6.4E Prior to the commencement of operation of the new SWDF storage infrastructure approved under MOD 14, the Applicant must review and update the Emergency Services Information Package required under condition 6.4C of this consent and the Emergency Plan required under condition 6.4B of this consent, in consultation with FRNSW to the satisfaction of the Planning Secretary.
- 6.5 Within three years of the commencement of operation of the cement works upgrade, and at least every three years thereafter, the Applicant shall undertake a formal review of the Operation Environmental Management Plan (OEMP) required under condition 0 of this consent. The review shall ensure that the OEMP is up-to-date and all changes to procedures and practices since the previous review have been fully incorporated into the OEMP. The Applicant shall notify the Planning Secretary, Council and the EPA of the completion of each review, and shall supply a copy of the updated OEMP to those parties on request. The Applicant shall also make any revised OEMP available for public inspection on request.
- 6.6 Prior to the use of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall update the Operation Environmental Management Plan required under conditions 6.3 and 6.4 of this consent to reflect any modifications required at the development in light of the use of Non-Standard Fuels. Where the Applicant considers that the Operation Environmental Management Plan does not require any amendment then a clear justification of this must be provided. The Applicant shall not receive or use Non-Standard Fuels at the development until the Planning Secretary has approved the amended Operation Environmental Management Plan. Updating of the Plan shall include, but not necessarily be limited to providing additional detailed measures to the Air Quality Management Plan to minimise the emissions of air pollutants (including toxic pollutants and dioxins) to ensure compliance with the EPL.
- Non-Standard Fuels Quality Control Management Procedures**
- 6.7 Prior to the receipt of any Group 1 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall establish and implement quality control management procedures to ensure Group 1 Non-Standard Fuels delivered to the development comply with the fuel specifications. The procedures shall be prepared in consultation with the EPA and, be approved by the Planning Secretary and shall, at the request of the Planning Secretary, be updated to reflect the recommendations of the annual Non-Standard Fuels audit required under condition 4.6 of this consent. The procedures shall include:

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- a) assessment of the sampling and laboratory processes used by the Non-Standard Fuel suppliers with a view to ensure these processes are sufficient for the Applicant to meet the requirements of this consent;
 - b) carrying out of periodic, random parallel sampling of Non-Standard Fuels with analysis of substances to which limits have been applied in the fuel specifications; and
 - c) measures to ensure handling, processing and analysis of information provided by Non-Standard Fuel suppliers and that generated by the activities under b) is appropriately stored and managed.
- 6.8 Prior to the receipt of any Group 2 Non-Standard Fuels at the development in accordance with this consent, the Applicant shall adopt and implement the approved *Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels*, dated 11 July 2016, prepared by the Applicant (Appendix 1 of this consent), to ensure Group 2 Non-Standard Fuels delivered to the development comply with the fuel specifications. The procedures shall, at the request of the Planning Secretary, be updated to reflect the recommendations of the annual Non-Standard Fuels audit required under condition 4.6 of this consent and the First-Year Monitoring and Modelling Assessment Report required by condition 7.6 of this consent.

7. ENVIRONMENTAL REPORTING

Incident Reporting

- 7.1 The Applicant shall notify the Planning Secretary and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the facility immediately after the Applicant becomes aware of the incident.
- 7.2 Within seven days of the date of this incident, the Proponent shall provide the Planning Secretary and any relevant agencies with a detailed report on the incident.

Notice of Incident to NSW Health

- 7.2A Prior to the commencement of the use of Non-Standard Fuels under this consent, the Applicant shall establish an agreed arrangement with the Sydney South West Public Health Unit to ensure that NSW Health is advised in a timely manner of the details of any incident with actual or potential significant off-site impacts on human health or amenity.

Annual Performance Reporting

- 7.3 The Applicant shall, throughout the life of the cement works upgrade, prepare and submit for the approval of the [Planning Secretary](#), an **Annual Environmental Management Report (AEMR)**. The AEMR shall review the performance of the cement works upgrade against the Operation Environmental Management Plan (refer to condition 0 of this consent), the conditions of this consent and other licences and approvals relating to the cement works upgrade. The AEMR shall include, but not necessarily be limited to:
- a) details of compliance with the conditions of this consent;
 - b) a copy of the Complaints Register (refer to condition 0 of this consent) for the preceding twelve month period (exclusive of personal details), and details of how these complaints were addressed and resolved;
 - c) a comparison of the environmental impacts and performance of the cement works upgrade against the environmental impacts and performance predicted in the SEE and the additional information listed under condition 0;
 - d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person;
 - e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the cement works upgrade have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;
 - f) identification of trends in monitoring data over the life of the cement works upgrade to date;

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- g) a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period; and
- h) environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results.

7.3A In each Annual Environmental Management Report submitted after the First Year Monitoring and Modelling Assessment Report required in accordance with condition 7.6 has been submitted, the Applicant shall include the details of the use of all Non-Standard Fuels at the development, including, but not necessarily limited to:

- a) the nature, quantity and quality of Non-Standard Fuels used at the development;
- b) details of any fuels that did not meet the Fuel Specification, including the source of the fuels and how the rejected fuels were managed or disposed of;
- c) a review of the results of the Non-Standard Fuels Tracking Program and the Non-Standard Fuels Quality Control Management procedures; and
- d) the results of all monitoring undertaken in accordance the requirements of this consent and an assessment of these monitoring results, including comparison of stack emissions against the concentration limits set in condition 3.10.

7.4 The Applicant shall submit a copy of the AEMR to the [Planning Secretary](#), the EPA and Council every year, with

- a) the first AEMR to be submitted within twelve months of commencement of operation of the cement works upgrade; and
- b) the second and subsequent AEMRs to be submitted concurrently with the EPA's Annual Return.

7.5 The [Planning Secretary](#) may require the Applicant to address certain matters in relation to the environmental performance of the cement works upgrade, in response to review of the Annual Environmental Report and any comments received from the EPA and/or Council. Any action required to be undertaken shall be completed within such period as the [Planning Secretary](#) may agree.

Note: The AEMR does not aim to satisfy any requirement of the EPA with regard to any Annual Return required under any licence issued for the cement works upgrade under the *Protection of the Environment Operations Act 1997*.

Non-Standard Fuels First Year Assessment Report

7.6 One year after the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall prepare a First-Year Monitoring and Modelling Assessment Report. The Report shall be submitted to the Planning Secretary, the NSW Department of Health and the EPA not more than 15 months after the commencement of the use of Non-Standard Fuels in accordance with this consent, and shall:

- a) detail the nature, quantity and quality of Non-Standard Fuels used at the development;
- b) assess the results of the Continuous Emissions Monitoring, the Ambient Air Quality Monitoring Program and the Process Monitoring requirements under conditions 4.1A, 4.1B and 4.1C of this consent against the relevant emission limits and process parameters prescribed by this consent and within the context of the predictions made in the documents listed under condition 1.2 i) of this consent;
- c) assess the results of the Non-Standard Fuels Tracking Program including detailed description and assessment of any trends identified through the Program;
- d) assess the adequacy of the Non-Standard Fuels Quality Control Management Procedures required under condition 6.7; and
- e) based on this assessment, review the necessity for continuing or modifying any of the emissions monitoring, reporting or pollutant tracking requirements of this consent.

7.7 Within three months of:

- a) the submission of an Annual Environmental Management Report under condition 7.3;
- b) the submission of an incident report under condition 7.1;

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- c) the approval of any modification of the conditions of this consent; or
- d) the issue of a direction of the Planning Secretary,

the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing of any actions arising out of any review.

- 7.8 If the review under condition 7.7 identifies any revisions required to any strategies, plans or programs, or if any revisions are considered necessary to improve the environmental performance of the development, the relevant strategies, plans and programs must be revised to the satisfaction of the Planning Secretary. The revised document(s) must be submitted to the Planning Secretary via the Major Projects Portal for approval within six weeks of the review carried out under condition 7.7, or such other timing as agreed by the Planning Secretary.

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

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APPENDIX 1

Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels

Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels

1. Purpose of Procedure

The purpose of this procedure is to define a standard approach for ensuring that the quality of solid waste derived fuels (SWDF) received and used at the Boral Berrima Cement Works (hereafter 'the Works') meet the specified fuel requirements and relevant statutory regulations and policies including the *NSW Energy from Waste Policy* (hereafter 'the Policy').

Solid waste derived fuel is a general term used to describe any solid fuels processed from waste materials to be utilised as a heat source in the kiln at the Works. This includes fuels derived from the processing of commercial and industrial and construction and demolition waste (referred to as Solid Recovered Fuel) together with fuels derived from waste wood material (referred to as Waste Wood Derived Fuels).

2. Supplier Quality Control, Quality Assurance and Testing

Any supplier proposed to be engaged for the supply of SWDF to the Works must meet certain pre-qualification criteria designed to give confidence that the supplier can meet the requirements of the Policy before any SWDF is supplied by that supplier on an ongoing basis to Boral. The methodology for prequalifying of suppliers is provided in **Appendix 2**.

Each solid waste derived fuel supplier will be contractually required to maintain an appropriate quality control/quality assurance (QA/QC) procedure to ensure that fuels supplied to the Berrima cement works meet the requirements of the Solid Waste Derived Fuels (SWDF) Specification presented in **Appendix 1** and the Policy. These supplier QA/QC procedures will define processes for controlling the quality of raw materials received and the testing and processing stages to be followed to ensure compliance with the Solid Waste Derived Fuels (SWDF) Specification and the Policy.

The suppliers' QA/QC procedures will be independently audited on an annual basis in order to demonstrate that the supplier is complying with these procedures. An initial audit of the suppliers QA/QC system will be conducted prior to the commencement of the supply of SWDF to the Works by the supplier. The QA/QC audits will be conducted in accordance with AS 19011-2014 *Guidelines for Auditing Management Systems*.

3. Supplier Compliance with NSW Waste to Energy Policy

Boral will only engage with suppliers of SWDF who demonstrate they have the technical expertise, facilities and processes required to meet the requirements of the Policy, including the resource recovery criteria.

A formal assessment of the supplier's capabilities to meet the requirements of the Policy will be made by Boral prior to contractually engaging a supplier. This will include an assessment of the supplier's capabilities as per **Appendix 2** of this document to ensure they meet the resource recovery criteria defined in **Table 1** of the Policy, remove hazardous materials and ensure that halogenated organic substances, expressed as chlorine remain below 1%.

The supplier QA/QC procedures will include requirements for regular reporting in a manner that demonstrates regulatory compliance and compliance with the Policy. Each month the supplier will demonstrate compliance with the resource recovery criteria of the Policy and provide a report to Boral detailing tonnages of SWDF they have supplied and delivered to the Works during the month.

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The report from the supplier will include the following:

- Each delivery of SWDF;
- Location of the processing facility where SWDF delivery was loaded;
- Details of waste stream (e.g.: MSW, C&I, C&D, source separated recyclables, source separated green waste, and source separated food waste); and
- Recycling systems in use and associated with the supply of SWDF (e.g. including differentiation of tonnages received from areas with dry recyclables collections, a combination of dry and garden collections, and a combination of dry, garden and food collections).

4. Tracking and Checking of Waste Deliveries

There will be an auditable chain of custody of SWDF from the supplier's facility to the Works. Each vehicle load of SWDF despatched from the supplier's facility will be assigned a transport certificate detailing the:

- delivery date;
- time of departure;
- description of SWDF (e.g. Solid Recovered Fuel or Waste Wood Derived Fuel);
- gross/tare and net weights of delivering/exporting vehicle;
- vehicle registration number; and
- unique reference number assigned to the load.

On arrival at the Works each load of SWDF will be weighed over a weighbridge and the data recorded, detailing the:

- arrival date;
- time of arrival;
- description of SWDF;
- gross/tare and net weights of delivering/exporting vehicle;
- vehicle registration number; and
- unique reference number assigned to the load.

Each month a reconciliation will be made between the supplier delivery data and the arrival data received at the works to confirm a match-up of delivered and received loads. Any mismatch between delivered and received loads will be investigated by the supplier and Boral.

At least one vehicle load of SWDF per supplier will be visually inspected by suitably trained Boral staff each day where deliveries are received. This visual check will confirm as far as practicable that prohibited materials are not included in the load.

Relevant staff will be trained in the QA/QC procedures outlined in this document, including:

- the SWDF specifications;
- identifying prohibited waste materials;
- procedures for managing contaminated loads;
- recording details of the inspection;
- procedures for waste acceptance and rejection; and
- the method of and communicating with the relevant third parties as required.

5. Receipt of SWDF

Only deliveries of SWDF from approved suppliers carrying the necessary transport certificate, as defined above, will be permitted to be received and discharged into the SWDF storage and handling system at the Works.

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A register of pre-approved delivery vehicles will be maintained by Boral and only such approved vehicles will be permitted to weigh-in at the Works.

Only drivers who have successfully completed the relevant site safety and operations induction will be permitted to weigh-in and discharge SWDF at the Works.

On arrival of a load of SWDF at the Works, the transport certificate will be checked by site personnel or via an automatic check system prior to being discharged into the SWDF storage and handling system. Automatic interlocks or barrier systems will be installed to prevent discharge without prior authorisation.

Records of daily inspections will be maintained by the site.

In the case that wastes cannot be accepted at the cement works (for either legal or technical reasons) the vehicle will be directed to a dedicated quarantine area for non-acceptable SWDF and not discharged. For those loads not accepted, the supplier will be notified in writing and the load will be directed to return to the supplier. The return of such loads will be the responsibility of the supplier.

The point of discharge of SWDF from delivery vehicle into the cement work's SWDF storage and handling system will be monitored by video camera and the image will be displayed in the central control room at the Works. Where discharged loads are observed or suspected to contain prohibited materials, this material will be transferred to a designated quarantine area within the SWDF storage building and not transferred to the kiln feed system unless the suspect material has been checked and approved by site personnel.

Sufficient vacant storage capacity must be maintained within the SWDF storage shed to cater for the storage of up to 200 m³ of quarantined SWDF.

Records of disputed loads will be included in a rejected loads register and stored on site.

6.Storage of SWDF

All acceptable SWDF received and discharged at the Berrima Cement Works will be stored inside an enclosed storage shed.

Levels of materials within the storage shed will be monitored by site personnel and if necessary deliveries from the supplier will be cancelled or restricted to ensure the capacity of the shed is not exceeded.

Sufficient spare capacity must be maintained within the storage shed to receive deliveries in transit from the supplier.

7.Additional Sampling and Testing of SWDF

In addition to the ongoing sampling and testing outlined in **Appendix 1** of this document, for any new SWDF type introduced to the Berrima kiln, a series of representative samples will be collected from the new SWDF. This will enable the characterisation of the fuel in terms of its typical composition and variability. Characterisation sampling will allow for an assessment of the SWDF and its ability to conform to the fuel specification, prior to its use.

Twenty composite samples will be collected and analysed for all parameters specified in **Table A1.1** using the corresponding test methods (or equivalent as agreed with Boral), for the purposes of characterisation. Sampling will be undertaken with reference to EN14780:2011 "*Solid Biofuels – Methods for sample preparation*".

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A **composite sample** is a sample that combines four discrete sub-samples of equal size into a single sample for the purpose of analysis.

8. Notification and Reporting

Boral will keep a written record of the following for a period of six years (at least):

- The sampling plan required to be prepared under this procedure.
- All characterisation, routine and/or one-off sampling results in relation to the SWDF supplied.
- The quantity of SWDF supplied.
- The name and address of each person that supplied SWDF to Boral.

Boral must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for the SWDF supplied. Boral must notify the EPA within seven days of becoming aware of any material that does not meet this specification, having entered the cement kiln.

Appendix 1 - Specification for Solid Waste Derived Fuel (SWDF)

Part 1

A1.1 The Supplier is responsible for sampling and testing Solid Waste Derived Fuel in accordance with the requirements of this Agreement.

A1.2 Supplier will ensure appropriate procedures are developed and implemented with the aim of qualifying the supply of SWDF to Boral and assuring that SWDF meets the following requirements:

- Nil Iodine, pharmaceutical, pesticide and biocide products in any formulation except as a constituent of another material and at levels, which are minimised as far as is reasonably practical;
- Nil Radioactive, nuclear, hospital and clinical waste; and
- Nil Explosive materials including propellants and cartridges.

A1.3 The Supplier will ensure that the results for each monthly composite sample of SWDF delivered under this agreement as sampled in accordance with A2.2 and tested in accordance with A2.1 complies with the Specification in **Table A1.1**.

A1.4 The supplier must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.

Table A1.1. SWDF Specification

Parameter	Specification	Notes
Gross Calorific Value (MJ/kg)	≥15.0	3
Ash	≤30.0% m/m	3
Moisture (as H ₂ O)	≤30.0% m/m	3
Chlorine (as Cl)	≤1% m/m	2
Total Fluorine, Bromine, Iodine (as F, Br, I)	≤0.25% m/m	3

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Sulphur (as S)	≤1.0% m/m	3
Particle size	≤ 100 mm in any direction	3
K ₂ O (%)	1.0	3
Na ₂ O (%)	0.5	3
Mercury (Hg) (mg/kg)	≤1.2	2
Cadmium (Cd) (mg/kg)	≤20	4
Thallium (Tl) (mg/kg)	≤20	4
Total Group II metals (mg/kg)	≤30	4
Cadmium (Cd) + Thallium (Tl)		
Copper (mg/kg)	≤1000	4
Lead (mg/kg)	≤1000	4
Total Group III metals (mg/kg)	≤3000	4
Antimony (Sb) + Arsenic (As) + Cobalt (Co) + Copper (Cu) + Chromium (Cr) + Lead (Pb) + Manganese (Mn) + Nickel (Ni) + Vanadium (V)		
PCBs (Polychlorinated biphenyls)	< 10mg/kg	5
PCPs (Phencyclidines)	< 100mg/kg	5

Notes

1. All parameters to be reported on as received basis
2. Limits based on EN 15359:2011 "Solid recovered fuel – Specification and classes"
3. Limits specified to ensure process stability and/or meet clinker quality requirements.
4. Limits based on cement industry experience and practice. Limits further checked through process mass balance calculations by Boral to ensure exceedances of specified gaseous emission limits for these species are unlikely if fuel specifications are met.
5. Limits based on cement industry experience and practice to provide a check of the quality of feed materials used to produce SWDFs.

A1.5 The supplier is permitted for just two (2) of the gross calorific value or moisture results in any of the twelve (12) consecutive monthly composite samples to be outside the values specified in **Table A1.1**, however, any such result must comply with the following limits:

Gross calorific value	≥ 10.0 MJ/kg
Moisture (as H ₂ O)	≤ 35.0% (m/m)

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Part 2

Quality Assurance for SWDF

A2.1 Supplier Test Methods

A2.1.1 The Supplier will ensure that the test methods in Table below are completed according with relevant standards and used to demonstrate compliance with the Specification:

Parameter	Test Method
Gross and Net Calorific Value	EN 15400:2011
Moisture content	EN 15414:2010
Chlorine	EN 15408:2011
Sulphur	EN 15408:2011
Nitrogen	EN 15407:2011
Carbon Content	EN 15407:2011
Biomass	EN15440:2011
Ash	EN15403:2011
K ₂ O, Na ₂ O	EN 15410:2011
Particle Size	EN 15412-1:2011
Metals – Mercury, cadmium, thallium, copper, lead, Total Group II metals, Total Group III metals	EN 15411:2011

A2.1.2 The Supplier will agree in writing with Boral any changes to the test methods and procedures for testing and sampling SWDF as specified in A2.1 and A2.2.

A2.1.3 The Supplier will ensure that testing of all parameters in **Table A1.1** is undertaken according to the requirements and by a laboratory certified to NATA or otherwise testing to similar standards for the test procedures specified above. This requirement does not apply to samples tested as per A2.2.2 below.

A2.2 Supplier Sampling

A2.2.1 The supplier will sample each separate type of SWDF they supply to the Works.

The routine sampling frequency outlined herein assumes a baseline (characterisation) data set of at least 20 composite samples. Prior to the use of any SWDF, characterisation sampling must be undertaken to assess the SWDF's typical composition, variability and ability to conform to the fuel specification. Further information on characterisation sampling is provided in part 7 of this document.

The routine sampling process will be as follows:

- Every month, two composite samples (one primary and one duplicate sample) will be collected from the SWDF prior to despatch. Composite samples will be comprised of four discrete sub-samples of equal size, into a single sample for the purposes of analysis.
- The samples will be taken from a belt conveyor, falling stream or truck.
- The monthly samples must be taken batch, truckload or stockpile that has not been previously sampled for the purposes of assessing compliance with the fuel specification.
- Every composite sample will be sealed and labelled. All samples collected during a month will be sent to an independent NATA accredited laboratory. The samples will be prepared with consideration for the guidance provided in EN14780:2011 "Solid Biofuels – Methods for sample preparation". The

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primary composite sample will be tested for all parameters specified in **Table A1.1** using the corresponding test methods (or equivalent as agreed with Boral) The duplicate composite sample will be retained as a reference for a period of 3 months stored in a correctly labelled and suitable sealed container.

A2.2.2 The Supplier will ensure that the particle size analysis test is carried out at least weekly using a representative composite sample made up from the samples taken during that week and will provide the test result to Boral by the next working day.

A2.2.3 The Supplier will agree with Boral on the details for final procedures of sampling and testing SWDF as part of Supplier's QA/QC system.

A2.3 Supplier Reporting

A2.3.1 The Supplier will ensure that tests for all parameters in **Table A1.1** are carried out on each monthly composite sample of SWDF using the test methods define in A2.1. The Supplier will provide Boral in writing with the individual monthly composite sample results within 21 days of the collection of the last sample within the month.

A2.3.2 The Supplier should provide written notification to Boral of any exceedances of the limits provided in **Table A1.1**, as soon as reasonably practicable. If an exceedance is reported for any material that has already been received by Boral from the supplier Boral will review the causes of the exceedance with the Supplier with a view to the supplier making changes to prevent further exceedances.

A2.3.3 Any dispute as to the quality or specification of the SWDF which cannot be amicably resolved between Boral and the supplier within 60 days either party may refer such dispute for determination by an Expert agreed between the parties. Such person will act as expert and not arbitrator and make such determination within 20 days of appointment and the Expert's determination will be final and binding on both parties.

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Appendix 2 – Supplier Capability Assessment

Capability Compliance Checklist					
Category	Description	Response	Criteria	Compliant	Comments
Safety and Compliance	Boral Contractor Safety Management system		Sufficiently advanced to comply with the Boral Contractor Safety Management requirements.	Yes/No/NA	
	Insurance – Certificates of Currency		Public Liability \$20 million Motor Vehicle \$20 million	Yes/No/NA	
	Safety Management Plan		Safety Management Plan developed reviewed and approved by Boral. Not operating under Boral Safety Management Plan	Yes/No/NA	
	Environmental Management Plan		Environmental Management Plan developed, reviewed and approved by Boral. Not operating under Boral Safety Management Plan.	Yes/No/NA	
	Operational risk assessment conducted		Full operational risk assessment conducted for the contract activities and evidenced by Boral.	Yes/No/NA	

□

Company Name: _____ ABN: _____

Address: _____ ACN: _____

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Phone No.:		Fax No.:		Mobile No.:	
Goods:	Waste Wood Derived Fuel	☐		Refuse Derived Fuel	

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Category	Description	Response	Criteria	Compliant	Comments
Manufacture and Storage Facilities	Location of facility		Facility to be located with NSW ideally within 2 -4 hours of Berrima.	Yes/No/NA	
	Size of facility – volume facility capable of producing		The facility must be capable of producing SWDF to meet the minimum volumes stipulated in the contract.	Yes/No/NA	
	Recycling system in use/proposed		Must be a system authorised for use under the NSW Energy from Waste Policy.	Yes/No/NA	
	Licence to operate as a waste facility including SWDF production.		Evidence of operating licence.	Yes/No/NA	
	Experience or knowledge in sourcing raw materials and producing SWDF		Evidence of experience or knowledge including operations in other regions/countries, key personnel's experience etc.	Yes/No/NA	
Personnel	Organisational size/capacity		Tier 1 waste organisation with support networks in place to meet the contract requirements.	Yes/No/NA	
	Contract representative		Key representative for all operational and commercial matters.	Yes/No/NA	
	Volume and experience of personnel within the organisation.		Experience of key personnel in the waste industry including previous waste processing.	Yes/No/NA	
Transport	In house or sub-contract arrangement. If sub-contract is there a formal contract arrangement in place which demonstrates requirements from head contract.		The volume of vehicles must be available to meet the delivery requirements for the minimum volumes stipulated in the contract. There must be adequate numbers of qualified drivers to meet the delivery	Yes/No/NA	

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Category	Description	Response	Criteria	Compliant	Comments
	If sub-contract regular checking of processes and procedures to ensure continued compliance.		requirements for the minimum volumes stipulated in the contract. Sub-contract only – Evidence of a formal contract in place between the Supplier and the Sub-contractor noting compliance must be as a minimum in accordance with the overarching Boral/Supplier contract. Evidence of processes and procedures in place with the Supplier to periodically ensure compliance of the Sub-contractor to the requirements		
	Delivery tracking capability		Ability to produce and maintain delivery records to meet the requirements of the contract.	Yes/No/NA	
	Vehicle configuration options		Vehicles used must be in accordance with the contract and be capable of tipping into the Boral storage facility.	Yes/No/NA	
	Licenced to transport the goods		Where required, the Supplier must provide evidence that they or their Sub-contractor are licenced to transport the goods.	Yes/No/NA	
	Traffic management plan for the SWDF processing facility		Evidence of a formal traffic management plan in place at the SWDF facility to manage vehicle movements and reduce human interaction with heavy vehicles	Yes/No/NA	
QA/QC	ISO Accredited		Evidence of accreditation	Yes/No/NA	

CONSOLIDATED CONSENT

Category	Description	Response	Criteria	Compliant	Comments
	Formal documented QA/QC policy in place including; - Sampling regime - Sample storage and tracking - NATA accredited laboratory for testing - Labelling and storing duplicate sample - Logistics for samples to lab		Evidence of a formal QA/QC policy which complies with all QA/QC requirements in the contract and the NSW Energy from Waste Policy, including the removal of hazardous materials and ensuring that halogenated organic substances, expressed as chlorine remain below 1%	Yes/No/NA	
	Weekly particle size testing including - Sampling regime - Consolidation process - Testing facilities		Evidence of formal process in place for the Supplier to conduct weekly particle size testing including recording, documenting and storing the results.	Yes/No/NA	
	Daily monitoring on CV and moisture including - Sampling - Testing - Testing equipment		Evidence of formal process in place for the Supplier to conduct daily monitoring on CV and moisture including recording, documenting and storing the results.	Yes/No/NA	
	Adherence to the conditions of the Boral Cement Works – QA/QC Procedure for Receipt and Use of SWDF		Written commitment to meet all the sampling, testing, reporting and other requirements provided in Boral's QAQC procedure	Yes/No/NA	
Product	Type of waste stream		In accordance with NSW Energy from Waste Policy table 1.	Yes/No/NA	
	Area of SWDF Origin		Area of origin must be in accordance with any requirements under the NSW Energy from Waste Policy.	Yes/No/NA	
	Adherence to Specification		Evidence that the SWDF produced by the supplier will meet the	Yes/No/NA	

Category	Description	Response	Criteria	Compliant	Comments
	specifications in the contract including				
Reporting and Commercial	Retention and communication of testing and monitoring reports		Evidence of a system in place to store and retain all testing and monitoring records for the duration of the agreement and beyond.	Yes/No/NA	
	Data management and accessibility of information.		Evidence of a formal process for managing data from testing and monitoring equipment and evidence of accessibility to meaningful reporting from this data.	Yes/No/NA	
	Ongoing reports for compliance and delivery		Evidence of ability to develop and provide ongoing consistent reports for monthly reviews against compliance and delivery.	Yes/No/NA	
	Commercial compliance including payment processes, remittance notes etc.		Ability to meet the minimum payment requirements and issue regular remittance advice regarding payments.	Yes/No/NA	
Continuous Improvement	Identification and analysis of costs for ongoing optimisation		Evidence of ongoing commitment to improving the overall process and product to optimise production.	Yes/No/NA	

multiple samples and laboratory testing reports.

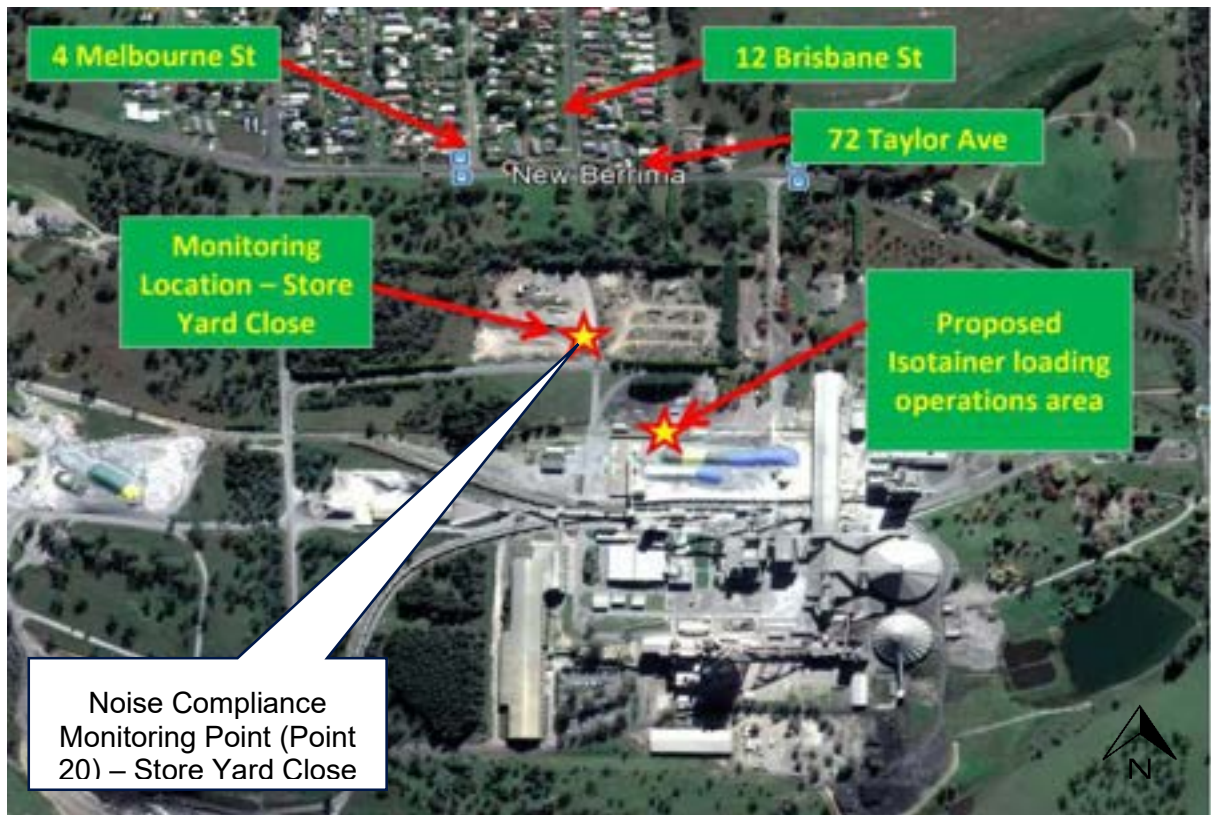
Verification

Checklist prepared by:

Checklist verified by:

APPENDIX 2

Noise Compliance Monitoring Location





APPENDIX 2 ENVIRONMENT PROTECTION LICENSE



Environment Protection Licence

Licence - 1698

Licence Details	
Number:	1698
Anniversary Date:	01-May

Licensee
BORAL CEMENT LIMITED
PO BOX 6041
NORTH RYDE NSW 2113

Premises
BERRIMA CEMENT WORKS
TAYLOR AVENUE
NEW BERRIMA NSW 2577

Scheduled Activity
Cement or lime works
Energy recovery
Extractive activities
Resource recovery
Waste storage

Fee Based Activity	Scale
Cement or lime production	> 500000 T annual production capacity
Energy recovery from general waste	Any capacity
Extractive activities	> 100000-500000 T annually extracted or processed
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Contact Us
NSW EPA
6 Parramatta Square
10 Darcy Street
PARRAMATTA NSW 2150
Phone: 131 555
Email: info@epa.nsw.gov.au
Locked Bag 5022
PARRAMATTA NSW 2124



Environment Protection Licence

Licence - 1698

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Information about this licence

Dictionary

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

Responsibilities of licensee

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

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

Variation of licence conditions

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

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

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

Duration of licence

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

Licence review

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

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

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



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

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

Transfer of licence

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

Public register and access to monitoring data

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

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

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

This licence is issued to:

BORAL CEMENT LIMITED
PO BOX 6041
NORTH RYDE NSW 2113

subject to the conditions which follow.



Environment Protection Licence

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1 Administrative Conditions

A1 What the licence authorises and regulates

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

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

Scheduled Activity	Fee Based Activity	Scale
Cement or lime works	Cement or lime production	> 500000 T annual production capacity
Energy recovery	Energy recovery from general waste	Any capacity
Extractive activities	Extractive activities	> 100000 - 500000 T annually extracted or processed
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
BERRIMA CEMENT WORKS
TAYLOR AVENUE
NEW BERRIMA
NSW 2577
LOT 1013 DP 15995, LOT 1041 DP 15995, LOT 22 DP 582276, LOT 1 DP 582277, LOT 2 DP 774598, LOT 1 DP 1017008, LOT 2 DP 1136734

A3 Information supplied to the EPA

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

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

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

Environment Protection Licence

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2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

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

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
2	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Kiln Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
4	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Cement Mill Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
5	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Kiln Cooler Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
7	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.5 Cement Mill Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated March 2006, provided to the EPA on 15 March 2006.
10	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.7 Cement Mill Stack on map entitled Site Environmental Layout, Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
11	Dust monitoring		Dust deposition gauge labelled as 1 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
12	Dust Monitoring		Dust deposition gauge labelled as 2 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
13	Dust Monitoring		Dust deposition gauge labelled as 3 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
14	Dust Monitoring		Dust deposition gauge labelled as 5 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.

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15	Dust Monitoring	Dust deposition gauge labelled as 7 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
16	Dust Monitoring	Dust deposition gauge labelled as 8 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
17	Dust Monitoring	Dust deposition gauge labelled as 9 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
18	Ambient air quality monitoring - high volume air sampler or equivalent	High volume air sampler or equivalent located on the south eastern side of the works and labelled HVAS in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
19	Parameter Monitoring	In the Calciner in the vicinity of the point where the Non-Standard fuel enters and is fired.

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
9	Discharge to waters Effluent quality monitoring.	Discharge to waters Effluent quality monitoring.	Lake Quality Overflow Sampling on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
20	Noise monitoring	Noise Compliance Point known as 'Store Yard Close'



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3 Limit Conditions

L1 Pollution of waters

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

L2 Load limits

L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

Assessable Pollutant	Load limit (kg)
Arsenic (Air)	
Benzene (Air)	
Benzo(a)pyrene (equivalent) (Air)	
Coarse Particulates (Air)	60000.00
Fine Particulates (Air)	240000.00
Lead (Air)	
Mercury (Air)	
Nitrogen Oxides (Air)	3500000.00
Sulfur Oxides (Air)	1600000.00

L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Air Concentration Limits

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POINT 2

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Mercury	milligrams per cubic metre	0.05	Dry, 273K, 101.3kPa	10%	1 hour*
Type 1 and Type 2 substances in aggregate	milligrams per cubic metre	0.5	Dry, 273K, 101.3kPa	10%	1 hour*
Solid Particles	milligrams per cubic metre	50	Dry, 273K, 101.3kPa	10%	24 hour
Nitrogen Oxides	milligrams per cubic metre	1000 & 1250	Dry, 273K, 101.3kPa	10%	24 hour & 1 hour respectively
Cadmium+Thallium	milligrams per cubic metre	0.05	Dry, 273K, 101.3kPa	10%	1 hour*
Chlorine	milligrams per cubic metre	50	Dry, 273K, 101.3kPa	10%	1 hour block
Dioxins & Furans	nanograms per cubic metre	0.1	Dry, 273K, 101.3kPa	10%	6-8 hours
Hydrogen chloride	milligrams per cubic metre	10	Dry, 273K, 101.3kPa	10%	1 hour*
Hydrogen fluoride	milligrams per cubic metre	1	Dry, 273K, 101.3kPa	10%	1 hour*
Sulfur dioxide	milligrams per cubic metre	50	Dry, 273K, 101.3kPa	10%	1 hour block
Sulfuric acid mist and sulfur trioxide (as SO ₃)	milligrams per cubic metre	50	Dry, 273K, 101.3kPa	10%	1 hour*
Volatile organic compounds	milligrams per cubic metre	40	Dry, 273K, 101.3kPa	10%	1 hour rolling

POINT 4

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Solid Particles	milligrams per cubic metre	100	Dry, 273K, 101.3kPa	-	as per test method

POINT 5

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Solid Particles	milligrams per cubic metre	100	Dry, 273K, 101.3kPa	-	as per test method

POINT 7

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period



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Solid Particles	milligrams per cubic metre	100	Dry, 273K, 101.3kPa	-	as per test method

POINT 10

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Total Solid Particles	milligrams per cubic metre	20	Dry, 273K, 101.3kPa	-	as per test method

- Note:
- For the purpose of this condition, Type 1 and Type 2 substances are defined as an aggregate of Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni, Se, Sn and V.
 - Volatile organic compounds may be replaced by Total organic carbon (TOC) or other equivalents as agreed by the EPA.
 - # for continuous monitoring, averages calculated as per method agreed to by the EPA
 - * or the minimum sampling period specified in the relevant test method, whichever is the greater

Note: 24 hour average calculated from hourly averages of CEMS data as agreed to by the EPA for continuous monitoring; as per test method for campaign monitoring.

Note: Refer to Special Condition E1 - *Off White Clinker Production* for the applicable NOx Limit at Licenced Discharge Point 2, while manufacturing Off-White Clinker in No. 6 Kiln. This includes the transition from the manufacture of Grey Clinker to Off-White Clinker and vice versa. 'Transition' in this note refers to the time period of 24 hours prior to and post off-white clinker production.

L3.3 The limits specified in the table above apply to the burning of all fuels, that is: coal, coke fines, natural gas, fuel oil, diesel and Non-Standard Fuels as defined in Table O6.3 in kiln 6.

Calciner Temperature

L3.4 For monitoring point 19 specified in the table below, the temperature must be equal to or greater than the limit specified in the table when burning Non-Standard Fuels.

Point	Parameter	Units of Measure	Limit	Averaging Period
19	Temperature	Degrees Celsius	850	Instantaneous

L4 Waste

- L4.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a condition of this licence.
- L4.2 Except as provided by any other condition of the licence, the licensee must assess, classify and dispose of all wastes generated as result of the use of Non-Standard fuels in accordance with the NSW EPA's *Waste Classification Guidelines*.

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L5 Noise limits

- L5.1 Noise generated at the premises must not exceed the noise limits at the times and locations in the table below. The locations referred to in the table below are indicated by Figure 4.1A, within PRP-7 Response – Identifying Environmental Noise Objectives for Berrima Cement Plant, dated 27 March, 2018 (Ref RRRep:004) by Recognition Research.

Location	Day, Evening & Night LA90(15 minute) in dB(A)
The Noise Compliance Point (Point 20) - Store Yard Close	58

- L5.2 For the purposes of Conditions 5.1:
- Day means the period from 7am to 6pm Monday to Saturday and the period from 8am to 6pm Sunday and public holidays.
 - Evening means the period from 6pm to 10pm.
 - Night means the period from 10pm to 7am Monday to Saturday and the period from 10pm to 8am Sunday and public holidays.
- L5.3 Standard Meteorological Conditions
- The noise emission limits identified in condition L5.1 apply under the following meteorological conditions for the Day, Evening and Night assessment period:
 - Stability Categories A, B, C and D with wind speeds up to and including 0.5m/s at 10m above ground level.
 - For those meteorological conditions not referred to in condition L6.3(a), the noise limits that apply are the noise limits in condition L6.1 plus 5dB.
- L5.4 For the purposes of condition L5.3:
- The meteorological conditions are to be determined from meteorological data obtained from the nearest, representative Bureau of Meteorology weather station
 - Stability category shall be determined using the following method from Fact Sheet D of the *Noise Policy for Industry* (NSW EPA, 2017):
 - Use of sigma-theta data (section D1.4).
- L5.5 For the purpose of determining the noise generated from the premises, the modifying factor corrections in Table C1 in Fact Sheet C of the Noise Policy for Industry (NSW EPA, 2017) may be applied, if appropriate, to the noise measurements by the noise monitoring equipment.
- L5.6 Noise measurements must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.

Note: Noise Policy for Industry - the document entitled “*Noise Policy for Industry*” published by the NSW Environment Protection Authority in October 2017.

Note: Noise is ‘sound pressure levels’ for the purposes of conditions L5.1 to L5.6.

Note: LAeq (15 minute) - the value of the A-weighted sound pressure level of a continuous steady sound that, over a 15 minute time interval, has the same mean square sound pressure level as a sound under consideration with a level that varies with time (AS1055-2018).

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4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Processes and management

O4.1 Exemptions relating to start-up and shutdown periods

The standards of concentration prescribed by this licence do not apply to or in relation to any plant during the following periods:

(a) a start-up period—that is, while the No. 6 Kiln is being brought up to normal operation following a period of inactivity,

(b) a shutdown period—that is, while the No. 6 Kiln is being taken out of service from normal operation to inactivity.

Note. While the standard concentrations do not apply, the licensee will be subject to the requirements of section 128 (2) of the *Protection of the Environment Operations Act 1997* in relation to the prevention and minimisation of air pollution.

O5 Waste management

O5.1 TYRES (AKF5)



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- O5.2 The total quantity of AKF5 stockpiled at the premises must not exceed 1,000 tonnes at any time.
- O5.3 The licensee must store AKF5 at the premises in accordance with the Fire & Rescue NSW (Fire Safety Branch) Guideline for Bulk Storage of Rubber Tyres.
- O5.4 Any AKF5 stored outside or in storage bunkers must be roofed to exclude rainwater.

O6 Other operating conditions

O6.1 REINSTATEMENT OF NON-STANDARD FUEL USE

The licensee must give prior written advice to the EPA on the date of commencement of the use of Non-standard Fuels AKF1, AKF5 and Hi Cal 50 in Kiln 6.

O6.2 APPROVED FUELS

- O6.3 Except as permitted by any other condition of this licence, the following fuels only are permitted to be fed to Kiln 6 string at the firing rates or proportions as specified in the table below.

Fuel	Category	Tonnes per annum	Tonnes per hour	Percent of total fuel (by mass)
Natural gas, Fuel oil, Diesel	Standard Fuel	-	No Limit	-
Coal	Standard Fuel	No limit	No limit	equal to or greater than 50.0
Coke Fines	Standard Fuel	No limit	equal to or less than 10.0	equal to or less than 30.0
Hi Cal 50	Non-Standard Fuel	10000	equal to or less than 1.0	equal to or less than 4.0 in the coal blend
AKF1	Non-Standard Fuel	20000	equal to or less than 2.8	equal to or less than 10.0
AKF5	Non-Standard Fuel	30000	equal to or less than 4.5	equal to or less than 21.0
Wood Waste	Non-Standard Fuel	100000		Equal to or less than 50
RDF	Non-Standard Fuel	200000		Equal to or less than 50

- O6.4 The combined annual usage of Wood Waste and RDF must not exceed 250,000 Tonnes for the Reporting Period and must not be greater than 50% of total fuel mass.

Note: This condition is subject to Special Condition E4.

- O6.5 The receipt and use of wood waste and RDF must be in compliance with the Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels prepared and updated by the licensee from time to time, as approved by the EPA.
- O6.6 Only standard fuels and Non-Standard Fuel HiCal50 are permitted to be used in kiln 6 during start-up and shut-down.



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O6.7 PROCESS PARAMETERS

The licensee shall not burn Non-Standard Fuels in kiln 6 unless:

- the feed rates for Non-Standard Fuels are maintained at a steady controlled rate to provide combustion in a proper and efficient manner; and
- a temperature of above 850°C is maintained in the zone where Non-Standard Fuels are fired at the main-firing end of the kiln; and
- a temperature of above 800°C is maintained in the zone where Non-Standard Fuels are fired at or in the vicinity of the pre-calciner/de-Nox system of the kiln; and
- a temperature of above 300°C is maintained at the outlet of the pre-heater strings of the kiln; and
- a temperature of below 200°C is maintained at the inlet to the electrostatic precipitator and fabric filter of the kiln

O6.8 The temperature requirements of Condition O6.7 – Process Parameters - do not apply to the Non-Standard Fuel Hi Cal 50, when Hi Cal 50 is blended with coal to create a homogenous blend. The concentration of Hi Cal 50 in the coal blend must not exceed 4%.

O6.9 Notwithstanding Condition O6.8 the feed rate of the Non-Standard Fuel Hi Cal 50, must not exceed 400 kilograms per hour when the temperature at the outlet of the preheater strings is below 300°C.

O6.10 REPORTING OF AIR EMISSIONS LIMITS EXCEEDANCES

The licensee must report all air emissions limit exceedances for Monitoring/Discharge Point 2 (Kiln 6 Stack) within 7 days, reporting the nature, duration and cause of the exceedance. This condition does not remove any reporting requirements specified under Part 5.7 sections 147-153 of the Protection of the Environment Operations Act (1997) and described in Condition R2.

O6.11 ALTERNATIVE RAW MATERIALS

O6.12 Except as provided by any other condition of this licence, the licensee is permitted to use the following alternative raw materials in the No 6 Cement Kiln only at the maximum quantity specified:

Alternative Raw Material	Source	Maximum Rate (Tonnes per annum)	Reference Documents located on EPA File LIC06/331
BOS Secondary Fines	BlueScope Steel Ltd Port Kembla	80000	Recovered Resource Specification BOS Secondary Baghouse Fines version 0.02, 9 October 2005 and Specific Immobilisation Approval 2006-S-03 valid until 30 June 2018. Approved for trial by EPA Notice No. 1055405 31 March 2006 and approved for use on 18 January 2008.

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Mill Scale	BlueScope Steel Ltd Port Kembla, OneSteel Pty Ltd Newcastle	50000	Approved by EPA for use as separate input in Berrima cement kiln January 2005. Recovered Resource Specification for Mill Scale January 2005.
Steel Slag	BlueScope Steel Pty Ltd Port Kembla	190000	Recovered Resource Specification for Steel Slag 20 May 2004. Approved by EPA Notice No. 1038051 23 June 2004.
Spent Fluidised Cracking Catalyst	VIVA Refining (Australia) Proprietary Limited - Corio (Vic) and Mobil Refining Australia Pty Ltd - Altona (Vic)	10000	Specific Immobilisation Approvals No. 2005-S-17 valid till 30 April 2018 and No. 2013-S-03 and Resource Recovery Order and Resource Recovery Exemption 'The Boral Cement spent FCC order May 2015' and 'The Boral Cement spent FCC exemption May 2016'
Cement Fibre Board	CSR Wetherill Park; James Hardie Australia Pty Ltd sites	80000	Resource Recovery Order and Resource Recovery Exemption for Cement Fibre Board - 'The cement fibre board waste order 2014' and 'The cement fibre board waste exemption 2014' and the Specific Resource Recovery Order and Exemption for James Hardie cement fibreboard 'James Hardie cement fibreboard waste order 2019 ('order') and James Hardie cement fibreboard exemption 2019 ('exemption') 16 December 2019 - 16 December 2020.
Blast Furnace Slag	Australian Steel Mill Services (ASMS) or JFE Mineral Company Ltd (Japan)	150,000	Resource Recovery Order and Resource Recovery Exemption for blast furnace slag - 'The Boral Cement blast furnace slag alternative raw material order November 2016' and 'The Boral Cement blast furnace slag alternative raw material exemption November 2016'

Note: 1. Gypsum produced from the Port Kembla Steelworks Sinter Plant sulphur rich gas stream was approved on 24 July 2007 as an additive to clinker. Approval filed on EPA file LIC07/908.



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Note: The licensee may also receive uncontaminated non-conforming, off-specification or surplus cement or lime for blending with raw meal and recycling in the No 6 kiln.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:
- M2.2 Air Monitoring Requirements

POINT 2

Pollutant	Units of measure	Frequency	Sampling Method
Cadmium	milligrams per cubic metre	Special Frequency 1	TM-12, TM-13 & TM-14
Carbon dioxide	percent	Special Frequency 1 & Continuous	TM-24, CEM-3 & Procedure 1*
Carbon monoxide	percent	Special Frequency 1 & Continuous	TM-32, CEM-4 & Procedure 1*
Chlorine	milligrams per cubic metre	Special Frequency 1	TM-7
Chromium (hexavalent)	milligrams per cubic metre	Special Frequency 1	OM-4
Dioxins & Furans	nanograms per cubic metre	Special Frequency 1	TM-18
Dry gas density	kilograms per cubic metre	Special Frequency 1	TM-23



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Hydrogen chloride	milligrams per cubic metre	Special Frequency 1 & Continuous	TM-8, PS-18 & Procedure 6*
Hydrogen fluoride	milligrams per cubic metre	Special Frequency 1	TM-9
Mercury	milligrams per cubic metre	Special Frequency 1	TM-12, TM-13 & TM-14
Moisture content	percent	Special Frequency 1	TM-22
Molecular weight of stack gases	grams per gram mole	Special Frequency 1	TM-23
Nitrogen Oxides	milligrams per cubic metre	Special Frequency 1 & Continuous	TM-11, CEM-2 & Procedure 1*
Oxygen (O2)	percent	Special Frequency 1 & Continuous	TM-25, CEM-3 & Procedure 1*
Solid Particles	milligrams per cubic metre	Special Frequency 1 & Continuous	TM-15, PS-11 & Procedure 2^
Sulfur dioxide	milligrams per cubic metre	Special Frequency 1 & Continuous	TM-4, CEM-2 & Procedure 1*
Sulfuric acid mist and sulfur trioxide (as SO3)	milligrams per cubic metre	Special Frequency 1	TM-3
Temperature	degrees Celsius	Special Frequency 1 & Continuous	TM-2
Thallium	milligrams per cubic metre	Special Frequency 1	TM-12, TM-13 & TM-14
Type 1 and Type 2 substances in aggregate	milligrams per cubic metre	Special Frequency 1	TM-12, TM-13 & TM-14
Velocity	metres per second	Special Frequency 1 & Continuous	TM-2 & CEM-6
Volatile organic compounds	parts per million	Special Frequency 1 & Continuous	TM-34 & CEM-8
Volumetric flowrate	cubic metres per second	Special Frequency 1 & Continuous	TM-2 & CEM-6

POINT 4

Pollutant	Units of measure	Frequency	Sampling Method
Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
Solid Particles	milligrams per cubic metre	Yearly	TM-15

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POINT 10

Pollutant	Units of measure	Frequency	Sampling Method
Solid Particles	milligrams per cubic metre	Yearly	TM-15

POINT 11,12,13,14,15,16,17

Pollutant	Units of measure	Frequency	Sampling Method
Insoluble solids	grams per square metre per month	Monthly	Australian Standard 3580.10.1-2003

POINT 18

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

POINT 19

Pollutant	Units of measure	Frequency	Sampling Method
Temperature	degrees Celsius	Continuous	TM-2

Note: For the purpose of this condition,

- i) Type 1 and Type 2 substances are defined as an aggregate of Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni, Se, Sn and V.
- ii) Volatile organic compounds may be replaced by Total organic carbon (TOC) or other equivalents as agreed by the EPA.

Special frequency 1 is defined as a round of air emission monitoring (for each of the pollutant/parameter nominated for a discharge point) conducted: every 3 months for the first 12 months, then every 6 months thereafter (following the successful completion of Proof of Performance Trials (PoP Trials)).

* Procedure 1 Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used For Compliance Determination, US EPA

^ Procedure 2 Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources, US EPA

Performance Specification 18 – Performance Specifications and Test Procedures for Hydrogen Chloride Continuous Emission Monitoring Systems at Stationary Sources and Procedure 6 Quality Assurance Requirements for Gaseous Hydrogen Chloride (HCl) Continuous Emission Monitoring Systems Used for Compliance Determination at Stationary Sources, USEPA



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Note: LDP 2 - Continuous Solid Particle monitoring must be carried out in accordance with 'Performance Standard 11' (PS-11)

M2.3 Water and/ or Land Monitoring Requirements

POINT 9

Pollutant	Units of measure	Frequency	Sampling Method
Biochemical oxygen demand	milligrams per litre	Each overflow event	Grab sample
Oil and Grease	milligrams per litre	Each overflow event	Grab sample
pH	pH	Each overflow event	Grab sample
Total suspended solids	milligrams per litre	Each overflow event	Grab sample

M2.4 The selection of sampling plane position for all air emissions monitoring must be carried out in accordance with test method TM-1.

M2.5 Continuous monitoring equipment for emissions, temperature and fuel feed rate, as required to meet the conditions of this licence and as agreed to by EPA must be installed prior to receipt of and use of Non-Standard Fuels in kiln 6.

M2.6 For the purposes of the above tables, a data verification audit for all Continuous Emissions Monitoring Systems (CEMS) shall be conducted at the time of installation in accordance with the requirements of the applicable CEMS Performance Specification and Procedure. The frequency of ongoing data verification audits must be agreed to by the EPA in writing. The results of all data verification audits must be submitted to the EPA within one month after completion of the tests.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2022* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods



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Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Testing methods - load limits

Note: Division 4 of the *Protection of the Environment Operations (General) Regulation 2022* requires that monitoring of actual loads of assessable pollutants listed in L2.2 must be carried out in accordance with the relevant load calculation protocol set out for the fee-based activity classification listed in the Administrative Conditions of this licence.

M5 Weather monitoring

M5.1 At the Weather Station Monitoring Point, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	millimetres	Continuous	24 hour	AM-4
Temperature @2m	Degrees Celsius	Continuous	1 hour	AM-4
Temperature @10m	Degrees Celsius	Continuous	1 hour	AM-4
Wind Speed @10m	meters per second	Continuous	1 hour	AM-2
Wind Direction @10m	Compass points	Continuous	1 hour	AM-2
Solar Radiation @10m	Watts per square meter	Continuous	1 hour	AM-4
Barometric Pressure	hectopascals	Continuous	1 hour	AM-4
Siting	-	-	-	AM-1

M6 Recording of pollution complaints

- M6.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M6.2 The record must include details of the following:
- a) the date and time of the complaint;
 - b) the method by which the complaint was made;
 - c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the licensee, the reasons why no action was taken.

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M6.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M6.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M7 Telephone complaints line

M7.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M7.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M7.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M8 Other monitoring and recording conditions

M8.1 MONITORING OF PROCESS PARAMETERS

The licensee must continuously monitor gas temperatures at the following process locations:

- a) in the zone where Non-Standard Fuels are fired at the main-firing end of Kiln 6;
- b) in the zone where Non-Standard Fuels are fired at or in the vicinity of the pre-calciner/de-Nox system of Kiln 6;
- c) at the outlet of the pre-heater strings of Kiln 6; and,
- d) at the inlet to the electrostatic precipitator and fabric filter.

6 Reporting Conditions

R1 Annual return documents

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

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

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

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

R1.3 Where this licence is transferred from the licensee to a new licensee:

- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
- b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

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

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:

- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
- b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date.

The notification must specify:

- a) the assessable pollutants for which the actual load could not be calculated; and
- b) the relevant circumstances that were beyond the control of the licensee.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

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R3 Written report

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

7 General Conditions

G1 Copy of licence kept at the premises or plant

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

G2 Other general conditions

G2.1 Completed Programs

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Program	Description	Completed Date
PRP 2: Alternative Fuels Program	BCSC is being given one year to trial specified alternative fuels with the objectives of reducing their TSP limit to 100mg/m ³ and Haz Subs to 1mg/m ³ . The PRP becomes invalid if the kiln upgrade is approved prior to the end date. A reduction in emissions from the main cement clinker kiln while utilising alternative fuel sources and conserving fossil fuels.	23-December-2003
PRP 1: Develop Site Specific Emission Limits	Original Title: Development of Site Specific Emission Concentration Limits. Desktop study to determine site specific emission factors appropriate to the stack from kiln 6 to protect ambient levels and meet ground level concentration criteria. Determine appropriate emission limits for key pollutants	11-December-2003
PRP 3: Cementitious Waste Management Plan	Original Title: Long Term Management Plan for Cementitious Wastes in Dry Tip Area. Control of environmental risk from potential asbestos contamination in waste cementitious aggregates in dry pit area. Better environmental controls.(&)	30-April-2008
PRP 6: Control of Fugitive Dust	The aim of this pollution reduction program is to minimise the local impact of fugitive dust emissions from the site by developing a management plan to address fugitive dust controls.	30-September-2011
PRP 7: Project Specific Noise Limits	To undertake background noise monitoring and establish Project Specific Noise Levels in respect of operational noise from the premises for all time periods (eg day, evening and night) that activities are carried on at the premises.	30-April-2018
PRP 8 Fugitive Dust Action Plan	Agreed actions from Dust Management Plan	28-September-2012
PRP 9: Landscape and Rehabilitation Works	Undertake revegetation/planting works as per schedule specified in PRP 9 and as described in Boral Cement Berrima Landscape and Rehabilitation Plan dated 28 September 2012.	31-March-2016
EIP: Investigation of new Chlorine and Sulphuric Acid Mist Limits - LDP 2 - Kiln 6 Stack	The licensee will investigate, through additional monitoring/stack testing achievable and appropriate limits (representing proper and efficient operation) for Chlorine and Sulphuric Acid Mist discharge limits for LDP 2 - Kiln 6 main stack. The EPA initially set limits at 50mg/m ³ for each pollutant following DPE granting consent for Mod 9 - Use of Waste Derived Fuels in Kiln 6. Prior to Mod 9 the limit for each pollutant was 100mg/m ³ . With additional stack monitoring requirements the licensee will derive appropriate and achievable limits and submit a report to the EPA.	26-August-2022

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8 Pollution Studies and Reduction Programs

U1 EIP: Further Investigation of new Chlorine and Sulphuric Acid Mist Limits - LDP 2 - Kiln 6 Stack

- U1.1 **Background:** Prior to the use of non-standard fuels, the LDP2 limit for Chlorine was 200mg/m³ and the limit for Sulphuric Acid Mist was 100 mg/m³.

Following The Department of Environment and Planning (DPE) issuing approval for Modification 9 (Mod9) - Use of Waste Derived Fuels in Kiln 6 - the EPA reviewed this licence and modified monitoring, limit and operational requirements to be consistent with the consent and application documents submitted by the licensee. The limits attached to this licence for both Chlorine and Sulphuric Acid mist are 50mg/m³.

Based on modelling these limits will achieve appropriate ground level impact assessment criteria. The licensee has stated these limits are achievable, however they were based on a small data set, and it is possible that the licensee will be able to achieve lower limits.

The licensee previously undertook an investigation into new Chlorine and Sulphuric Acid Mist limits and collected data over a two-year period. The data supported a lower limit for both Chlorine and Sulphuric Acid Mist. The licensee has now installed and will commission a new Chloride Bypass System, and will investigate through additional monitoring/stack testing achievable and appropriate limits (representing proper and efficient operation) for Chlorine and Sulphuric Acid Mist discharge limits for LDP 2 - Kiln 6 main stack.

- U1.2 **Undertaking:** The licensee must undertake emissions stack testing as required by the monitoring requirements of this licence over a two-year period, that is four 6-monthly stack tests.

The licensee must review the monitoring data obtained during the above period, and the monitoring data obtained during the previous EIP - *Investigation of new Chlorine and Sulphuric Acid Mist Limits - LDP 2 - Kiln 6 Stack*, and prepare a written report to the EPA recommending feasible and reasonable Chlorine and Sulphuric Acid Mist concentration limits. The recommended limits must consider data obtained from emissions stack testing, and the requirements of S124 of the Protection of the Environment Operations Act (1997), in particular demonstrating Kiln 6 is being operated properly and efficiently.

DUE DATE: 3 Months from the date of the fourth stack test (approximately 1st Quarter 2026).

9 Special Conditions

E1 Off-White Clinker Production - NOx Limits

- E1.1 **Background:** The licensee manufactures both grey and off-white clinker at the Berrima plant. Production of off-white clinker occurs for several days at a time, approximately 4 times per year. This represents less than 10% of total annual clinker production at the Berrima plant. When making off-white clinker, kiln output is typically 15-24% less than when making grey clinker.

During production of off-white clinker in No. 6 Kiln, changes in gas flow and kiln temperature may result in elevated NOx concentrations at licensed discharge point 2 (the No. 6 Kiln stack). While NOx concentrations



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may be higher, the volumetric flow rate from the kiln will be lower. NOx emissions at LDP 2 are continuously monitored. Previously the licensee had limited stack test data for NOx while producing off-white clinker at Berrima, as this product was previously produced at the Boral Maldon Plant.

Prior to the commencement of use of non-standard fuels the licensee undertook a study on NOx emissions from discharge point 2 while producing off-white clinker. The Licensee collected monitoring data from 12 months of production (a minimum of 4 production runs of off-white clinker) to inform a written 'Off-White Clinker NOx Report'. The report concluded that NOx emissions from licenced discharge point 2 are slightly higher while producing off-white clinker when compared to grey clinker. The report also concluded that this elevated NOx was primarily due to the elevated temperature required for this process and that there are limited feasible and reasonable opportunities to reduce the NOx emissions during these periods. The Limits below apply to NOx emissions from licenced discharge point 2 when off-white clinker is produced.

E1.2 **Limits:** During periods of off-white clinker production in No. 6 Kiln (including a 24 hour period of transition to and from off-white clinker production) the following emission limits for NOx apply in place of the limits shown for grey clinker production in L3.2 Point 2:

- Continuous 24 hourly NOx limit - 1250mg/Nm3
- Continuous 1 hourly NOx limit - 1550mg/Nm3.

All other concentration limits specified in condition L3.2 Concentration Limits – Point 2 will apply when making off-white clinker.

E2 Special Dictionary - Non-Standard Fuel

E2.1 In this licence, unless the contrary is indicated, the terms below have the following meanings:

Word	Meaning
AKF1	A Non-Standard Fuel, being liquid oily residues comprising of recovered oil from the treatment of wash waters, oils, dewatered sludges and grease trap emulsions, that is approved as a Non-Standard Fuel by the EPA and in accordance with the requirements of development consent MOD-2-1-2004-i.
AKF5	A Non-Standard Fuel, being used and unwanted tyres, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of development consent MOD-2-1-2004-i.
HICAL 50	A Non-Standard Fuel, being spent aluminium electrode carbon, that is approved for use as a Non-Standard Fuel by the EPA and in accordance with the requirements of development consent MOD-2-1-2004-i.
Wood Waste	Residual wood waste sourced directly from a waste generator e.g. manufacturing facility. (Note Consent Definition - Mod 9 05.10.2016: organic fibrous wood residues and natural wood wastes that result from the processing of waste)



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RDF (Refuse Derived Fuel)	A Non-Standard Fuel, being a fuel produced by processing the residues of waste by sorting and shredding (particle size reduction), dehydrating (moisture removal), and removal of recyclable and hazardous materials.
Non-standard Fuel	Any Non-Standard Fuel as defined by the Department of Planning and Environment Consent No. 401-11-2002-i.

E3 Implementation of Updated Ambient Dust Monitoring Network

E3.1 Background

Special Condition SC E3 *Review and Update of Ambient Dust Monitoring Network* required the licensee to undertake a review of the existing dust monitoring network at the premises and provide a proposal for a revised air quality monitoring system that uses real-time dust monitors to inform a trigger action response plan.

This condition now requires the licensee to implement the proposal.

E3.2 Requirements

The licensee must implement and commission a real-time dust monitoring network in accordance with the proposal titled ‘*Boral Berrima Cement Works Air Quality Monitoring System Review*’ dated 5 June 2024. When implementing the proposal, the licensee must confirm in writing to the EPA, the completion of each of the following steps (1-5) by the due date:

1. By **31 January 2025** install a network of real-time dust monitoring units at the Premises in accordance with the proposal.
2. By **7 March 2025** install the real-time monitoring dashboard to the control room
3. By **6 June 2025** trial and finalise a site-specific trigger action response plan and alert system for the real-time dust monitors.
4. By **5 December 2025**, commission the real-time dust monitoring network and associated systems and procedures to a fully operational status in accordance with the proposal.
5. By **19 December 2025**, provide to the EPA a report confirming the real-time dust monitoring network and associated systems and procedures are fully operational. The report must include details of the proposed alert system and trigger action response plan that the licensee developed during the trial phase.

E4 Proof of Performance Trials - 10% Increase in SWDF Percentage of Total Fuel Mass

- E4.1 The combined usage of Wood Waste and RDF permitted to be fed to Kiln 6 can be up to 60% of total fuel mass for the purpose of a proof of performance trial involving stack emissions testing for pollutants listed for

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point 2 under condition L3.2.

- E4.2 The licensee must notify the EPA 7 days prior to the commencement of a proof of performance trial.
- E4.3 If any limits set under condition L3.2 are exceeded during a proof of performance trial, the licensee must immediately cease the trial and notify the EPA of the exceedance.
- E4.4 The end date for this special condition is 1 July 2025. The EPA may remove this special condition earlier than the end date if any exceedances of limits under condition L3.2 occur during a proof of performance trial.



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Dictionary

General Dictionary

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



Environment Protection Licence

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



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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste
Wellhead	Has the same meaning as in Schedule 1 to the Protection of the Environment Operations (General) Regulation 2021.

Mr Niall Johnston

Environment Protection Authority

(By Delegation)

Date of this edition: 17-November-2000

Environment Protection Licence

Licence - 1698

End Notes

- 1 Licence transferred through application 140469, approved on 03-Jun-2002, which came into effect on 15-Jun-2001.
- 2 Licence varied by notice 1017975, issued on 23-Sep-2002, which came into effect on 25-Sep-2002.
- 3 Licence varied by notice 1021197, issued on 11-Jun-2003, which came into effect on 11-Jun-2003.
- 4 Licence varied by notice 1033484, issued on 24-Dec-2003, which came into effect on 18-Jan-2004.
- 5 Licence varied by notice 1038051, issued on 23-Jun-2004, which came into effect on 18-Jul-2004.
- 6 Licence varied by notice 1055405, issued on 31-Mar-2006, which came into effect on 25-Apr-2006.
- 7 Licence varied by notice 1063377, issued on 27-Jul-2006, which came into effect on 27-Jul-2006.
- 8 Licence varied by notice 1076344, issued on 03-Aug-2007, which came into effect on 03-Aug-2007.
- 9 Licence varied by notice 1079995, issued on 17-Dec-2007, which came into effect on 17-Dec-2007.
- 10 Licence varied by notice 1082098, issued on 16-Jun-2008, which came into effect on 16-Jun-2008.
- 11 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 12 Licence varied by notice 1092083, issued on 02-Dec-2008, which came into effect on 02-Dec-2008.
- 13 Licence varied by notice 1104214, issued on 08-Jul-2010, which came into effect on 08-Jul-2010.
- 14 Licence varied by correction to Scheduled Activity name, issued on 04-Nov-2010, which came into effect on 04-Nov-2010.
- 15 Licence varied by notice 1126350, issued on 03-May-2011, which came into effect on 03-May-2011.
- 16 Licence varied by notice 1502347 issued on 03-Nov-2011
- 17 Licence varied by notice 1503064 issued on 30-Mar-2012
- 18 Licence varied by notice 1505791 issued on 30-Apr-2012
- 19 Licence varied by notice 1507292 issued on 16-Jul-2012
- 20 Licence varied by notice 1508990 issued on 25-Sep-2012



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21	Licence varied by notice	1509568 issued on 18-Mar-2013
22	Licence varied by notice	1514371 issued on 31-May-2013
23	Licence varied by notice	1523277 issued on 14-Jul-2015
24	Licence varied by notice	1535513 issued on 23-Dec-2016
25	Licence varied by notice	1582981 issued on 18-Dec-2019
26	Licence varied by notice	1613505 issued on 06-Oct-2023
27	Licence varied by notice	1635232 issued on 15-Dec-2023
28	Licence varied by notice	1638679 issued on 29-Apr-2024
29	Licence varied by notice	1640988 issued on 30-Jul-2024
30	Licence varied by notice	1647692 issued on 14-Mar-2025



APPENDIX 3 COMMUNITY CONSULTATION AND ENGAGEMENT PLAN

Boral Berrima Cement
Tyre Chip Storage
Stakeholder Engagement & Consultation Plan
EXTERNAL VERSION



May 2026

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1.0 Background

- The Boral Berrima Cement Works is the flagship operation of Boral's integrated cement supply network. The site hosts the only operating kiln of scale in the state, which in turn provides more than 60 percent of cement products consumed by the NSW/ACT building and construction market.
- From the commencement of operations in 1929 through until 2013, the heat energy source used in the Cement Works' various kilns was primarily provided via coal mined at the Berrima (Medway) Colliery, eight kilometres to the west of the site.
- Various economic challenges forced the Colliery to revert to a 'care and maintenance' mode in 2013, with the site's permanent closure announced during July 2014. A program of works has been under implementation ever since to deliver a consequent Closure Plan.
- The discontinuation of supply from Medway meant the Cement Works transitioned to coal transported from mines in the Illawarra. While this has continued successfully to date, cost of production pressures associated with the 100 percent use of coal as fuel energy for the kiln have persisted.
- Several years ago, Boral Cement began exploring options to integrate solid waste-derived fuels (SWDF) into the kiln's energy mix. Successfully doing so would reduce the Cement Works' reliance upon coal given a portion would no longer be required as a result of using SWDFs.
- The use of SWDFs by Boral is not new. The Berrima site has an existing approval to use rubber tyre 'chips' as gained in the early 2000s, while Boral's former Waurin Ponds (Geelong) kiln also ran SWDFs until its closure in 2013. SWDFs are in standard use by cement kilns throughout Europe.
- The modification process was undertaken between 2014 and 2016 and sought not only to permit the use of SWDF and RDF as fuels, but also to have several air emission limits adjusted to align with the expected outputs resulting from their use.
- The NSW Department of Planning Industry and Environment (DPIE) granted approval for the modification at the beginning of October 2016. The obtaining of the approval was announced to the public at the Cement Works' regular community meeting of 10 November 2016.
- As per condition 1.4CA, following consultation with the EPA on 8 October 2021 and a letter of support on 22 October 2021, Boral notified the DPE on 21 December 2021 of the intention to undertake a six-month trial to receive and use up to 205 tonnes of AKF-5 tyre chips at the site. On 21 January 2022, the DPE responded and were satisfied with undertaking the trial and the proposed temporary storage of chipped tyres during the trial.
- The trial commenced on the 25 January 2022 when the first delivery of tyre chips was received from Molycop360 in Cootamundra (EPL 21294). A total of 102 tonnes of tyre chips were delivered and used at various feed rates of 1t/hr, 2t/hr and 4.5t/hr. The trial was considered to have a positive result, in that the kiln operation did not change due to the use of the AKF-5 tyre chips in the pre-calciner, the environmental performance of the operation did not change (air/water), the existing feeding conveyor CO75 could handle the AKF-5 tyre chips at the trial feed rates. In addition, no steel accumulation was observed in the slopped section of the riser in the calciner.
- In the last trial report on 29 July 2022, it was concluded the trial has met all the trial objectives in that the Kiln operation will not change due to the use of alternative fuels (tyre chips AKF-5) in pre calciner. Given the success of the trial, Boral sought a modification to the existing consent to permit the external storage of AKF-5 tyre chip fuel and the loading of the fuel via an external feeding system (hopper or unloading docking station) and the existing feeding conveyor CO75. Modification 15 was approved in early 2023.
- As part of the requirements of the modification approval, before works can begin a Construction Environmental Management Plan (CEMP) is to be submitted to the DPE for approval. A component of the CEMP is a 'community consultation plan' which is fulfilled by this document.
In 2024, discussions commenced with the EPA and DPHI regarding the recommencement of the use of AKF1 fuels. The Community has been advised of the recommencement of the use of this fuel. This was undertaken at the CLC meeting held on the 27th June 2024 and again of the 14th November 2024.
Updates on the progress towards the recommencement of the use of AKF1 continued in 2025 at the 13 June and 10 December CLC meetings. The CLC will be kept advised on the Proof of Performance trials and the use of the AKF1 fuel.
- Further to the approval of Modification 14,, this community consultation plan has been reviewed in line with the ongoing requirements of the Operational Environment Management Plan.

2.0 Aims of Engagement and Consultation

The objectives of the Berrima Cement Modification 14 and continued use of SWDF are:

- To operate plant and equipment necessary to successfully integrate the use of approved SWDFs as heat energy into the clinker production process;
- To remain in compliance with the Cement Works' modified planning consent throughout the construction, testing, commissioning and ongoing usage phases;
- To achieve the anticipated reduction in the costs of clinker production, assisting with the long-term viability of the Berrima operations.

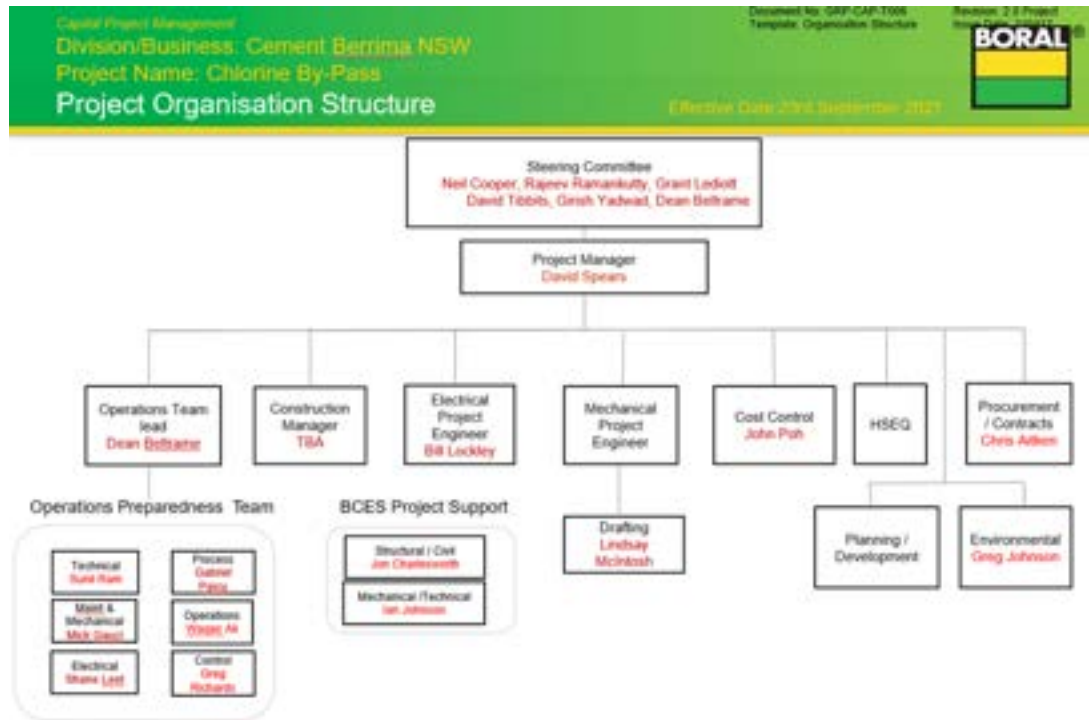
In supporting the objectives of the Project, the aims of this Engagement and Consultation Plan (E&C Plan) are therefore to:

- Build upon the positive outcomes of the previous E&C Plans implemented during the planning modifications;
- Ensure the local community is aware of the construction and operational schedule and provided with advance notice of any activities which have potential to influence them;
- To keep local stakeholders up-to-date with the testing of the new plant and equipment, and the results of same, in order to gather feedback which assists with completion of the Project and ongoing operations;
- To ensure the business and its contractors remain aware to potential matters of community complaint, and address any feedback in an appropriate and timely fashion;
- To make the Berrima site more accessible to the local community through promotion of both the Project and day-to-day business;
- To highlight the positive benefit the Project will provide to the local area and wider state in terms of environmental and social outcomes; and
- To meet the community engagement obligations of the CEMP, general modified planning consent, and NSW Environment Trust grant funding.

3.0 Project Team and Internal Resources

The Berrima Cement SWDF Implementation Project is an initiative of Boral Cement. The business is wholly responsible for providing budget and ancillary resources (eg administration support) as required by members of the Project Team, including Boral's Stakeholder Relations team.

Members of direct relevance to the delivery of this E&C Plan are detailed in the Table below:



4.0 The IAP2 Spectrum as part of this Plan

The International Association for Public Participation Spectrum (IAP2) is an internationally recognised tool which is used to guide the development and implementation of stakeholder engagement programs.

It consists of a number of public participation 'goals', with a 'promise' attached to each goal which outlines the level of interaction stakeholders can expect with the proponent of any project requiring stakeholder engagement.

IAP2 has been used by Boral for a number of years to determine the level at, and approach which, individual stakeholder groups should be engaged during projects and initiatives. The table below outlines each of the five levels included within the Spectrum.

Level	IAP2 Goal	Promise
Inform	Provide balanced and objective information to stakeholders and assist their understanding	Keep stakeholders informed
Consult	Obtain stakeholder feedback on analysis, alternatives and/or decisions	Acknowledge stakeholder concerns and provide feedback on how stakeholder input influenced the final decisions
Involve	Work directly with stakeholders throughout the process to measure concerns. Stakeholder aspirations are understood and considered.	Stakeholder concerns directly reflected in alternatives
Collaborate	Partner stakeholders in each aspect of the decision including alternatives and solutions	Incorporate stakeholder advice and recommendations in decisions
Empower	Final decision making in the hands of the public	Implement community decisions

5.0 Who are our Stakeholders?

Boral's Berrima operations have been intrinsically linked to the local community ever since the establishment of the Cement Works during the 1920s. The adjacent township of New Berrima, immediately to the north of the site, was settled as an ancillary village for staff of the cement operations.

In recognition of this relationship, the Cement Works has maintained an active community engagement program through which regular opportunities for interaction with local residents and other stakeholders are facilitated. The program is broad reaching and includes a number of communications channels and a community contributions approach.

Thanks to the frequent participation of stakeholders in these opportunities, the Cement Works has formed firm relationships with numerous individuals and groups in almost all of the 13 categories used by Boral to classify its stakeholders.

The result for this Project is that virtually all stakeholders with the potential to have an interest are readily identified. As this E&C Plan has been written to follow the similar one developed in support of the initial planning modification process, the previous Plan's Stakeholder Register will again be used.

5.1 Primary (critical) stakeholders

Boral regards all stakeholders as of equal importance when communicating about day-to-day initiatives or 'special projects'. Stakeholder engagement and consultation plans are accordingly tailored to be inclusive of all parties, with emphasis on those groups most likely to be influenced or affected by any changes or new proposals.

Of these, the 'primary' stakeholders are summarised in the table below:

Primary Stakeholder	IAP 2 Engagement Level	Involvement / Key Issues
New Berrima residents and businesses	Inform / Consult	Potentially affected by any activity at the Cement Works Sensitive receivers of any outputs generated by CBS construction and usage Were largely supportive during planning application process Effects of changed air emissions limits – concerns over perceived health risks Concerns related to construction activity – noise / dust / traffic Concerns about SWDFs – air emissions / odour / nature of materials being imported to site Long-term positive outcomes for local employment if cost of production decreases achieved.
Wingecarribee Shire Council	Inform / Consult	Representative body for local community Strict adherence to conditions of consent, especially concerning air quality Previous discussions about intaking wood waste from Council landfill site Support for retaining of long-term employment and ratepayer
NSW Member for Goulburn (Wendy Tuckerman MP)	Inform	Recent concern and opposition about EfW projects such as Jerrara Power, specifically those located near Goulburn. Generally supports Berrima Cement as it is located within established industrial routes and zones Access to monitoring data for residents is a key issue
NSW Department of Planning, Housing and Infrastructure	Collaborate	Regulator for overall planning consent Compliance with all terms of the new consolidated and construction specific components of the planning consent

Primary Stakeholder	IAP 2 Engagement Level	Involvement / Key Issues
Environment Protection Authority of NSW / NSW Environment Trust	Collaborate	Regulator for Environment Protection Licence – part of consent conditions Environmental outputs, specifically air quality. Completion of obligations under terms of grant
Contractors and Boral project employees	Collaborate	Responsible for the physical implementation of the Project Compliance with the modified conditions of consent for the site – CEMP Appropriate conduct of activities on site in accordance with day-to-day site community engagement standards Ensuring local community receives appropriate notice for activities with potential to affect surrounding properties Timely and professional addressing of complaints/feedback received

6.0 Issues for consideration

Ahead of the implementation of an E&C Plan, it is important to identify or reasonably predict the range of issues which could arise as a result of the associated Project.

This can be achieved as the result of structured research or surveying using tools such as Boral's Stakeholder Perception Benchmark, and through listing out known issues of relevance which have arisen through day-to-day contact and general community engagement activities at the site.

Once identified, predicting the risk of each issue upon the overall project and the potential mitigations which can be put in place becomes key to the effectiveness of the E&C Plan. Risk and likelihood ratings are configured through use of Boral's Risk Assessment Matrix.

For the SWDF Implementation Project, a number of potential issues have been identified. These have been predicted based upon topics raised during the planning modification process, and observations picked up through day-to-day site stakeholder engagement activities during the past two years.

These matters, their relative level of risk, and the proposed 'control' mechanisms remain confidential to Boral, however a broad summary of the topics considered includes:

- Potential for the scheduled construction activities to generate effects which influence surrounding properties and residents;
- Due notification of intent to undertake works which may have an effect on surrounding properties and residents;
- Revisitation of issues which were addressed during the planning modification assessment phase, such as the consequences of the amended air emission limits;
- Regional perception of the import of waste into the local area;
- The Project's testing and commissioning phase;
- The potential for the Project not to deliver the expected economic and/or environmental outcomes; and
- Non-compliance with any aspect of the site's or Project's planning consents and other approvals.

7.0 How will we engage our Stakeholders (channels)?

The following channels will be used to ensure the broadest reach of stakeholders can be informed and included:

- **Letters** – formal to key stakeholders, initially to update about the transition of the Project from approval to implementation, then to notify ahead of key stages.
- **Phone briefings and emails** – for timely notification and as a precursor to the sending of formal information.
- **One-on-one briefings** – as required to explain the detail of the Project implementation.

- **Site visits/inspections** – will be offered to key stakeholders as an extension of one-on-one briefings or formal presentations, with the aim of allowing them to visualise potential effects of the Project.
- **Formal presentations** – for larger structured groups such as Council.
- **Community meetings** – The Cement Works operates a Community Liaison Group (CLG) as a requirement of the site's planning approval. The CLG, which re-formed in June 2019 to replace a series of regular open community meetings held between 2011-18, meets bi-annually as a primary communication channel between the site and local residents. As described in the planning approval, the CLG consists of community representatives, an appointed representative of Wingecarribee Shire Council, and Boral personnel. To ensure the wider community remains 'connected' to the Cement Works, we also organise Whole of Community (WoC) Meetings if any significant changes are planned at the Cement Works, or if there has been a major issue or topic needing broad communication.
- These sessions also act as a 'report back' on the previous year's activities.
- **Site Open Day/experience** – consideration will be given to hosting a 'controlled' site inspection at a strategic point during the construction phase. This will be arranged to tie into the site's normal stakeholder engagement program of activities, for example the regular community meetings (above).
- **Information/fact sheets** – the 'dot point' fast facts used as part of the collateral produced for the approval phase of this Project will be updated to reflect the implementation phase.
- **Community newsletters** – the site's *Community Update* newsletter will be continued to raise awareness of the Project implementation with local residents, as well as opportunities to provide feedback.
- **Editorial / advertorial** – opportunities will be proactively sought to promote the implementation of the Project as a demonstration of Boral's 'best practice' and industry expertise. Opportunities for photos will form a part of this process. Messaging will centre on the social, environmental and economic benefits of the Project.
- **Website** – The existing Berrima Cement website, <https://www.boral.com.au/locations/boral-cement-works-berrima>, will be used to convey detailed information in support of the Project. Other communications collateral will reference the website accordingly.

8.0 When will we engage our Stakeholders (timeframes)?

The following project benchmarks will be used to notify associated stakeholders:

- **Pre-construction activities** – preparation works such as detailed survey marking, arrangements for construction power and other services and erection of construction fencing and setup areas.
- **Phase 2: Commencement of Construction Work** –
 - **Mod 14** - the first phase of construction will focus on the preparation of groundwork associated with the construction of the road and storage facilities. The location of the construction works means it will remain almost totally out of external view.
 - **AKF1** – upgrades to current facilities will be undertaken. These works will be within the Cement works.

Engagement will continue with the CLC as works commence and progress.. **Phase 3: Pre-testing / commissioning** – to ensure continuation of the level of support for the Project notionally received through the planning approval phase, it will be critically important to ensure stakeholders are given notice of the recommencement of the use of AKF1 and the commencement of the change to road transport and the use of the Mod 14 road.

The importance arises because if the testing is successful and no noticeable effects occur beyond stakeholders' normal experience of the site, any lingering doubts about the use of SWDFs and their external effects can be virtually eliminated.

- **Phase 4: Completion of project / start-up of regular operations** – as the ongoing use of the SWDFs is incorporated into the operations an update will be provided at Community Liaison Group meetings.

9.0 What will we tell our Stakeholders (key messaging)?

Using the aims and objectives of this E&C Plan (Section 2) as guidance, all communications collateral will be developed from a foundation of supporting 'key' messages. While these remain confidential to Boral, the general themes which the messaging incorporates include:

- An overview of the SWDF Program, including the schedule of construction and the activities contained within it, as well as the structures to be established;
- Details about day-to-day operations, including hours of works, Boral's commitment to reduce any risk of external effects from the Project upon neighbours, and how stakeholders can provide feedback, seek more information or register complaints;
- Details about the testing and commissioning phase of the Project, and the information sought and to be shared with the community about same; and
- Messaging from the original E&C Plan implemented during the planning modification phase concerning the rationale for using SWDFs, what SWDFs are, and the benefits of using SWDFs at the site.

10.0 Stakeholder enquiries and complaints process

Enquiries and complaints regarding the Project will be managed in alignment with the site's normal processes for addressing same. Management and resolution of all complaints is the **responsibility of the Berrima site and Cement business**.

Enquiries and complaints may be received via the following channels:

- Directly to the site, site personnel (regular or Project) or contractors;
- Directly to Stakeholder Relations Manager;
- Via members of the Community Liaison Group;
- Via contact with Boral's NSW or Corporate offices;
- Via other Boral personnel; or
- Through Boral's 'feedback' email address (feedback@boral.com.au) or website (www.boral.com.au/feedback)

Enquiries or complaints received by site personnel should be responded to by the appropriate Project Team member unless involvement of the Stakeholder Relations Manager appears necessary.

If the enquiry is deemed a complaint, it will be registered in the site incident register SEQUENCE and managed per associated protocols. The Stakeholder Relations Manager will be notified of all enquiries and complaints received and will be advised of the resolution.

If an enquiry or complaint is received by a contractor, it should be forwarded to the Project Team for resolution.

Any enquiries or complaints received by the Stakeholder Relations Manager via any channel will be responded to and managed in a timely and professional manner by the business in consultation with the Manager. Such management will adhere to the following timelines where possible:

Nature of enquiry / complaint	Response timeframe
Complaint relating to presently occurring works / operations	Acknowledge and action within one day of receipt, ideally on the same working day . If issue raised is complex to resolve, advice to be provided on same day as complaint made, with regular updates provided until resolution.
General enquiry via any channel	Acknowledge within one day of receipt. Response provided within five working days
Written correspondence	Response provided within 10 working days

11.0 Monitoring, Adjusting and Measuring Success

In order to verify that this E&C Plan is reaching the required range of stakeholders, and that the main messaging is being understood, continual monitoring of stakeholder reaction will be undertaken.

The main avenues for monitoring will be:

- Reactions of, and subsequent feedback and questions from, members of the New Berrima community, Wingecarribee Shire Council and other regular participants in the Cement Works' community meetings;
- Commentary received from, and queries passed on by, the State Member for Goulburn's office;
- Input from the DPE and EPA based on community feedback received by them;

- Media attention and resulting editorial; and
- Feedback offered directly to Boral via the provided channels.

Pending stakeholder feedback, adjustments to the Plan may be required to account for issues including:

- Insufficient reach across all stakeholder groups;
- Identification of new stakeholder groups not previously known to the business;
- Non-suitability of preferred channels to stakeholder needs; and
- The need to re-introduce messaging and communications collateral which was used during the approval phase as a way of re-explaining SWDFs or the Project concept.

The ultimate success of this E&C Plan will be defined by the achievement of the overall objectives for the Project as listed in Section 2.0. However, criteria which will be assessed when evaluating success include:

- Direct engagement with Boral about the Project and ongoing SWDF use by a wider group of stakeholders beyond those who normally interact with the Cement Works through the regular community meetings;
- Efficient management of any issues identified by stakeholders and their appropriate addressing in the formal documentation;
- Neutral to favourable local media coverage; and
- Formal and anecdotal positive feedback on the information sharing and engagement processes deployed in support of the Project by both stakeholders and assessing authorities.

12.0 Anticipated cost implications of this Plan

This section of this E&C Plan remains commercial-in-confidence to Boral.



APPENDIX 4 AIR QUALITY MANAGEMENT PLAN



Boral Cement Limited

Berrima Works

Air Quality Management Plan (Appendix 4 of OEMP)

Document Filename:	CMT-ENV-003 Berrima Air Quality Management Plan
Document Owner:	Operations Manager, Berrima Works
Approved By:	Operations Manager, Berrima Works

Version History:

Version	Date	By Whom	Description of Changes
1	30 November 2007	Grant Williams	Original version
2	7 October 2008	Grant Williams	Update to include requirements of Boral Cement corporate procedure, include NSF requirements.
3	September 2011	Alex Wnorowski	Global revision and formatting change
4	September 2014	Michael Curley	3-yearly review
5	April 2018	Todoroski Air Sciences	Update to include new requirements from Modification 9 consent
6	28 April 2020	Greg Johnson	Update to include outcomes of PoPT, inclusion of a trial real-time dust monitor and reference to the Dust TARP, Modification 11 consent (Use of HiCal 50) and MOD 12 (Isotainer and Whole of Site Noise Limits).
7	12 May 2023	Sharon Makin	Update to include new requirements from Modification 15 consent
8	15 April 2025	Sharon Makin	Update to include requirements of Mod 14 Development Consent Update to include revised AKF5 specification Update to include review for usage of AKF1
9	23 March 2026	Sharon Makin	Reviewed in response to DPHI RFI. No changes required

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1. PURPOSE

Many activities at the Berrima Cement Works (the Works) generate point source and fugitive air emissions. These activities include grinding and crushing of materials, loading and unloading of freight wagons, truck movements, adding and subtracting from the raw material stockpiles, burning of clinker, cement milling, and product despatch (clinker and cement). The storage of certain non-standard fuels (NSF), solid waste derived fuels (SWDF) or alternative raw materials (ARM) can result in the emissions of odours.

The purpose of the Air Quality Management Plan (the Plan) is to ensure that all personnel are aware of their obligations relating to air quality, such as site emission limits, and are able to apply appropriate controls and management techniques for the operation of the Works to control and minimise fugitive dust, odours, point source emissions and minimise the impact of emissions on the local community and the environment.

The Plan forms part of the Operation Environmental Management Plan (OEMP).

The Plan also enables compliance with the conditions specified in the development approvals (DAs) for Kiln 6 (DA No. 401-11-2002-i) and Cement Mill 7 (DA No. 85-4-2005-i), including the consolidated DA for modifications 1 to 15 to DA No. 401-11-2002-i (MOD 14 consent); and Environmental Protection License 1698 (EPL).

2. SCOPE

Requirements

The Plan addresses the following air quality related matters:

1. Identification of all possible gas and dust emission sources;
2. Control of potential emissions;
3. Planning for minimal environmental impact from emissions;
4. Compliance with environmental legislative requirements;
5. Promotion of employee and community environmental awareness;
6. Compliance with all relevant legislative requirements;
7. Compliance with Boral OHS Procedures; and
8. Describing procedures for dealing with non-compliance, if identified.

Air quality related conditions in the consolidated consent and the section of the Plan where they are addressed are shown in Table 1.

Table 1 Air quality related consent conditions

Condition	Requirement	Section
3.7	The Applicant shall design, construct, operate and maintain the cement works upgrade in a manner that minimises dust emissions from the site and complies with the EPL.	CMT-ENV-001 Berrima Dust Management Plan
3.7A	The Applicant shall apply all reasonable and feasible measures to minimise the generation of dust from coal stockpiles, including but not necessarily limited to: a) compaction of stockpile batters to minimise pick up of dust; b) installation of water sprays or use of a water cart to keep stockpile surfaces wet, if dust is being generated; and c) cessation of stockpile generation during periods of high wind, if dust generation cannot be controlled.	CMT-ENV-001 Berrima Dust Management Plan
3.8	The Applicant shall take all practicable measures to ensure that all vehicles entering or leaving the site and carrying a load that may generate dust are covered at all times, except during loading and unloading. Any such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicle at all times.	CMT-ENV-001 Berrima Dust Management Plan
3.9	All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation or emission of wind blown or traffic generated dust from the site at all times.	CMT-ENV-001 Berrima Dust Management Plan
3.10	The Applicant shall install and operate equipment in line with best practice to ensure that the Development complies with all load limits, air emission limits and air quality monitoring requirements as specified in the EPL for the site.	Work instructions (not attached to Plan)
4.1B	Prior to the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall develop and implement an Ambient Air Quality Monitoring Program in consultation with, and to meet the requirements of, the Secretary and the EPA. The monitoring program shall be consistent with the EPA's <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> , shall monitor fugitive emission from site works, and be designed to generate sufficient information to meet the requirements of this consent. The ambient monitoring program shall include: a) appropriately located ambient air quality monitoring station/s designed to obtain representative air quality data; b) monitoring of TSP, PM10 and PM2.5 and other listed	4.1B(a): 5.2 (Monitoring/discharge locations and Figure 2) 4.1B(b): 5.2 (Monitoring schedule) 4.1B(c): 5.2 (Monitoring schedule) 4.1B(d): 5.2 (Monitoring schedule) 4.1B(e): 5.2



	pollutants; c) sampling at a continuous or other appropriately justified frequency (to be agreed with the EPA); d) sampling over an appropriate period (to be agreed with the EPA); and e) generation of suitable continuously sampled meteorological data including wind speed, wind direction, temperature, and variability of wind direction (sigma theta) in general accordance with the current Australian Standard/s. The Applicant must ensure the ambient air monitoring program is underway prior to the PoP Trials starting. The continuation of ambient monitoring may be reviewed after analysis of at least one year's ambient monitoring data.	(Monitoring schedule)
6.3A	Prior to the receipt of any Non-Standard Fuels, the Applicant shall update the OEMP required by condition 6.3 of this consent to include the following: c) the environmental monitoring requirements outlined in the EPL and under conditions 4.1A, 4.1B and 4.1C of this consent; and d) an updated Air Quality Management Plan, as required by condition 6.4A of this consent.	6.3A(c): 5.2 6.3A(d): this revised Plan
6.4(b)	...an Air Quality Management Plan to outline measures to minimise and manage any impacts from the operation of the cement works upgrade on local air quality. The Plan shall address the requirements of the EPA, should there be any. The Plan shall include, but not necessarily be limited to: i. identification of all major sources of particulate and gaseous air pollutants that may be emitted as result of the operation of the cement works upgrade, including identification of the major components and quantities of these emissions; ii. monitoring of particulate and gaseous emissions from the cement works upgrade, in accordance with any requirements of the EPA; iii. procedures for the minimisation of particulate and gaseous emissions from the cement works upgrade, and the reduction of these emissions over time, where appropriate; iv. protocols for regular maintenance of process equipment to minimise the potential for dust emissions; v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and vi. description of procedures to be undertaken if any non-compliance is detected.	6.4(b)(i): 5.1 (Emission sources), Table 4 6.4(b)(ii): 5.2 (Monitoring/discharge locations and Figure 2), 5.2 (Stack emission limits), 5.2 (Monitoring requirements) 6.4(b)(iii): 5.2 (Air quality management controls) 6.4(b)(iv): Work instructions not attached to this Plan 6.4(b)(v): 5.2 (Air quality management controls), dust management plan 6.4(b)(vi): 7 (Incident reporting), OEMP (pollution incident response management plan, emergency plan, Section 6.2)



6.4A	As part of the updated OEMP required under condition 6.3A of this consent, the Applicant shall provide an updated Air Quality Management Plan prepared in consultation with the EPA. The updated plan shall be prepared by a suitably qualified and experienced person and shall: a) verify whether the development is complying with the air quality criteria specified in the EPL, and identify the additional measures to be implemented to ensure compliance should any non-compliance be detected; b) validate that the performance of the project reflects the assumptions, estimates and conclusions made in the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9; c) provide details of any complaints received relating to air quality generated by the development, and action taken to respond to those complaints; d) include ambient monitoring of emissions from the development, including PM2.5 and PM10; e) include stack emissions monitoring at Kiln 6, including for each pollutant considered and assessed as a part of the Human Health Risk Assessment and Air Quality Impact Assessment submitted with MOD 9. The pollutants shall include but not be restricted to individual VOCs, heavy metals, dioxins and PAHs; f) include an ambient air monitoring program; and g) include details of all proposed emission control measures.	This version review incorporates the PoPT outcomes. 6.4A(a): POPT final report accepted see attachment 3 which approved continual use. Additional measures outlined under 'Proof of performance trials' compliance will be verified, and this Plan updated, after monitoring results from the proof of performance trials are analysed 6.4A(b): assumptions in the MOD 9 environmental assessment documents was validated by the independent audit dated 31 October 2019, 6.4A(c): 7 (Pollution complaints) and Section 5.3 of OEMP 6.4A(d): 5.2 (Monitoring/discharge locations and Figure 2) 6.4A(e): 5.2 (Stack emission limits), 5.2 (Monitoring requirements) 6.4A(f): 5.2 (Monitoring/discharge locations and Figure 2) 6.4A(g): 5.2 (Air quality management controls), dust management plan

Proof of performance trials

As per conditions 3.25 – 3.28 of the MOD 9 consent, a proof of performance trial (PoP) was to be undertaken for the burning of SWDF. The use of SWDF was not to be permitted (outside of the approved PoP Trials) until such time as the Secretary indicated in writing that they were satisfied with the results for an individual SWDF. The SWDF PoPT commenced in August 2018 and ran until April 2019.

On 23 April 2019 the Secretary approved the Proof of Performance Trial Consolidated Six Month Report for Solid Waste Derived Fuels prepared by Boral Cement dated 28 February 2019 which demonstrated the suitability of the ongoing use of SWDF in Kiln 6, subject to:

- a) Limiting the amount of SWDF to be fired in Kiln 6 to 40%, as a percentage of total fuel,
- b) periodic stack testing being undertaken every 3 months for the first 12 months of use of SWDF. The monitored pollutants must be consistent with the requirements of the EPL 1698
- c) provision of a monitoring report that outlines the results of the quarterly stack testing required in (b) above and provides an assessment of compliance against the air emission limits for the facility, to the satisfaction of the secretary.
- d) periodic measurements of HCl taken every 3 months until such time the Secretary agrees the accuracy of the HCl CEMs is confirmed through successful calibration audits undertaken in accordance with USEPA Performance Specification 18.

The EPA licence was amended on 18 December 2019 to reflect the fuel limitation to 40%, as a percentage total of fuel until such time further testing is undertaken.

On Friday 23 February 2022 Boral submitted the final Proof of Performance Trial reports to the DPE to increase SWDF usage permitted to 50%. On 8 December 2022 the Secretary and EPA acknowledged that the PoP trials and stack tests demonstrate compliance with the consent and environment protection licence conditions under high feed rate conditions (>40% and <50%) with the Secretary approving the increase of the SWDF feed rate in Kiln 6 from 40% to a maximum of 50%.

No other changes were required in regards to emission limits or changes to fuel specifications.

Modification 14 requires as per Condition 1.4AB that

“the Applicant must:

- a) limit the combined annual usage of SWDF to no more than 50% of total fuel mass until appropriate Proof of Performance Trials are undertaken to the satisfaction of the EPA and the Planning Secretary for each 10% incremental increase in SWDF usage above 50%; and

b) not co-fire non-standard fuels permitted by condition 1.4A of this consent unless compliance with the air emission limits on the EPL has been demonstrated for that combination of fuel types through a Proof of Performance Trial to the satisfaction of the EPA and the Planning Secretary.”

With the proposed recommencement of the use of AKF1, a Proof of Performance Trial will be undertaken to satisfy condition 1.4AB to co-fire AKF1 with other Non-Standard Fuels at the existing approved specification as well as trialling AKF1 at a higher Zn concentration to support requests to vary the existing specification.

AKF1 will be used during this PoPT at a rate <2.8 tph and <10% of fuel by mass co-fired with SWDF and AKF5 (tyre chips) and a maximum concentration for Zn of 5000 mg/kg.

The trial will run for a period of up to 6 months from the day of the first load of AKF1 material received. During this period the site will consume AKF1 on a regular basis over the entire period, undertake stack testing trials, report on the outcome to the EPA and DPHI and seek to gain the necessary approvals for ongoing usage beyond that date.

The OEMP and AQMP will be revised to reflect the outcome of the PoPT if necessary.

Fuel types

Along with standard fuels Natural Gas, Fuel Oil, Diesel, Coal and Coke Fines, Boral is currently approved to use Group 1 non-standard fuels; AKF5 (used and unwanted tyres), HiCal 50 (spend aluminium electrode) and AKF1 (liquid oily residues comprising of recovered oil from the treatment of wash waters, oils, dewatered sludges and grease trap emulsions) and Group 2 non-standard fuels SWDF (Solid waste derived fuel including wood waste and refuse derived fuel).

The consent, as modified, only permits the use of the standard and non-standard fuels outlined in Condition 1.4A Table 1. The consent does not approve the establishment of a protocol for general use of Non-standard Fuels other than those permitted.

Fuel	Category	Tonnes per annum	
Natural Gas, Fuel Oil, Diesel	Standard Fuel	No limits	
Coal	Standard Fuel	No Limit	
Coke Fines	Standard Fuel	No Limit	
Hi Cal 50	Non-Standard Fuel	10,000	
AKF1	Non-Standard Fuel	20,000	
AKF5	Non-Standard Fuel	30,000	
Wood Waste	Non-Standard Fuel	100,000	≤ 250,000 combined
RDF	Non-Standard Fuel	200,000	
Woodchips	Standard Fuel	150,000	

Along with annual tonnage limits per annum, there are also restriction on Non-standard Fuel storage, use during Kiln start-up and feed rates. These include:

- Only Standard Fuels and Group 1 Non-Standard Fuel, Hi Cal 50, are permitted to be used at the development during start-up and shutdown
- Non-standard fuel are not permitted to be stored at the site for longer than 3 months, except with the written permission of the Secretary.
- Hi Cal 50 must only be use in Kiln 6 when blended with coal to create a homogenous blend. The concentration of Hi Cal 50 in the coal blend must not exceed 4%.
- The feed rate of Hi Cal 50, must not exceed 400kg per hour when the temperature is below 300 degrees C at the outlet of the preheater strings.

3. DEFINITIONS

Table 2 Definitions

Term	Definition
CEMS	Continuous Emission Monitoring System
DA	Development Approval - a consent issued by the Department of Planning and Environment, detailing site-specific construction and operational conditions that Boral Cement must comply with
DPHI	NSW Department of Planning, Housing and Infrastructure
OEH	NSW Office of Environment and Heritage
EPA	NSW Environment Protection Authority
EPL	The site-specific Environment Protection Licence (No 1698) issued and managed by the EPA
Greenhouse gases	Greenhouse gases are the gases present in the atmosphere which reduce the loss of heat into space and therefore contribute to rise of global temperatures through the greenhouse effect. The six greenhouse gases covered under the Kyoto Protocol are carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons. The main greenhouse gas from cement manufacture is CO₂
HVAS	High volume air sampler

NSF	Non-Standard Fuels i.e. any fuel that does not meet the criteria for Standard Fuel (approved NSFs are Hi-Cal 50, AKF1, AKF5 and SWDF)
SWDF	Solid waste derived fuels (includes wood waste and RDF)
Wood waste	Organic fibrous wood residues and natural wood wastes that result from the processing of waste
RDF	Refuse derived fuel – A fuel produced by processing the residues of waste by sorting and shredding (particle size reduction), dehydrating (moisture removal), and removal of recyclable and hazardous materials
OEMP	Operation environmental management plan
PM _{2.5}	Particulate matter of 2.5 micrometers or less in diameter
PM ₁₀	Particulate matter of 10 micrometers or less in diameter
TARP	Trigger Action Response Plan
TSP	Total suspended particulates

4. ROLES AND RESPONSIBILITIES

In addition to specific responsibilities listed in the procedures in Section 7, the general responsibilities in Table 3 apply.

Table 3 Responsibilities

Role	Responsibility
<i>Employees</i>	Responsible for ensuring that the atmospheric emission goals in their work area are achieved. This includes: ➤ observing any air emission control instructions and procedures that apply to their work, including the Berrima Dust TARP; ➤ taking action to prevent or minimise air emission incidents; ➤ identifying and reporting air emission incidents; and ➤ monitoring and controlling air emissions to ensure emissions are maintained within defined limits.
<i>Team Leaders / Front Line Supervisors</i>	Responsible for the prevention of emissions to air arising from work methods and the working environment. This includes: ➤ identifying, reducing and preventing emissions to air; ➤ monitoring operations and maintenance work to ensure

	emissions to air are maintained within approved levels; ➤ initiating preventative actions with respect to air emissions exceedances and fugitive dust as per the Berrima Dust TARP ; ➤ identifying, reporting and recording air emissions incidents; and ➤ initiating corrective actions to overcome air emissions breaches.
<i>Production Manager / Technical Manager</i>	Responsibility and authority to ensure that the site environmental air emission objectives are achieved. This includes: ➤ ensuring staff are trained and updated on air emission awareness, responsibilities, instructions and procedures; ➤ ensuring air emission incidents are investigated and corrective and preventative action taken; ➤ ensuring operations comply with DA and EPL conditions, and relevant legislative requirements; ➤ ensuring periodic emission monitoring is carried out and that the results comply with the emission limits for the site ➤ reviewing operations and implementing strategies to reduce fugitive and point source air emissions from the works as per the Berrima Dust TARP; and ➤ developing and implementing contingency plans to respond to air emission incidents and minimise fugitive and point source air emissions. ➤ handling air emission complaints received,
<i>HSE Advisor or designated Environmental Representative</i>	Responsibility for environmental compliance and further improvement. This includes: ➤ monitoring compliance with DA, EPL and site procedures; ➤ reporting outcomes of compliance monitoring and identify opportunities for improvement; ➤ reviewing periodic emission monitoring to ensure results comply with the emission limits for the site; ➤ ensuring appropriate corrective actions and management plans are updated and implemented if emissions are found to be exceeding the limits; and ➤ review complaints, investigations and corrective actions, observing and reporting trends.
<i>Site Operations Manager</i>	➤ approving any communications to external parties on air emission generating activities before their release;

	and ➤ ensuring all personnel are aware of EPL, DA and other regulatory requirements relating to plant operation and environmental performance relating to emissions to air, including the Berrima Dust TARP

5. PROCESS

5.1 MANUFACTURING OPERATIONS – POTENTIAL EMISSION SOURCES

Cement is produced at the Works by the dry process in No. 6 Kiln (see Figure 1 for process schematics). The sequence of operations at the Works with respect to their air emission potential is described in Table 4.

Subject to compliance with the conditions of the DAs and EPA Environment Protection Licence, Kiln 6 and Cement Mill 7 can be operated 24 hours per day, seven days per week.

Table 4 Sequence of operations

Operation	Description	Potential for Emissions
Unloading of limestone	Limestone/limestone-yellow shale mixture from Marulan Limestone Mine is transported to the works by rail. The limestone is unloaded and taken by conveyor belt to the pre-blend heaps. The conveying system is enclosed and the transfer points are fitted with dust collection systems.	Minor fugitive dust emissions
Quarrying	Blue shale is excavated using a bulldozer.	Minor fugitive dust emissions
Additive raw material delivery, storage and transfer	The additive materials such as blue shale, yellow shale, iron source materials and gypsum for cement production are delivered to the works by road. They are stockpiled on site in open stockpiles and/or on the Shale Pad. The various materials are transferred to the Shale Pad or Shale Crusher by road transport and/or front end loaders. The Shale Pad area is bunded and covered. The area is swept to remove spilt material.	Significant fugitive dust emissions

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Operation	Description	Potential for Emissions
Coal delivery and storage	Raw coal is delivered by road and unloaded through a hopper for transfer to the raw coal blending system. When coal shed is full, excess coal is stored in an open stockpile. The raw coal is wet and the transfer system and coal blending is enclosed.	Very minor fugitive dust emissions
SWDF storage, handling and feeding system	SWDF delivered to site in covered vehicles to designated storage building.	Minor fugitive odour emissions
AKF5 storage pad	AKF5 is delivered directly into designated ground bins and moved by loader to feed hopper (stage 1) or directly into hopper (stage 2). Site water cart used to control potential fugitive dust from vehicle movements.	Minor fugitive dust emissions
Additive raw material crushing	The additive materials, blue shale, yellow shale, iron source materials are crushed in the Shale Crusher and transferred to the Proportioning Bins. The crusher is fitted with a dust collection system and conveying system is enclosed and the transfer points are fitted with dust collection systems.	Minor fugitive dust emissions
Preblending	The limestone from rail deliveries is laid down in a series of windrows on the preblend heap. These windrows form layers that help to reduce the effect of any variations in the limestone quality. One heap is being built while the other is being reclaimed. The operation is contained in a building.	None
Reclaiming	The preblend heaps are reclaimed by the reclaimer. The reclaimer scrapes limestone from the face of the heap across all the layers laid down during the build of the heap. This further reduces any effects of variation in limestone quality. The operation is contained in a building.	None
Proportioning of raw materials	During the reclaiming of the limestone from the preblend heap the other raw materials are added from bins in careful controlled proportions to adjust the chemistry of the mixture to ensure that the finished clinker will have the right quality. The operation is contained in a building.	None



Operation	Description	Potential for Emissions
Grinding of raw materials	The mixture of raw materials is ground up finely in the raw mills to make raw meal. Hot air from the kiln is drawn through the mills to dry the raw materials. The raw milling is to help the raw materials mix properly and make the mixture easy to burn in the kiln. The operation is contained in a building.	None
Homogenising	The raw meal is stored in the homogenising silo. The homogenising silo mixes the raw meal, reducing any variations in the chemistry raw meal.	None
Burning	The raw meal is fed to the preheater tower. As the raw meal is heated in the preheater tower and kiln, carbon dioxide (CO ₂) is liberated from the limestone. In the hottest part of the kiln, the burning zone, chemical reactions take place, which convert the raw meal into "clinker". Hot gases from the preheater system are quenched in the conditioning towers and then used to dry the raw materials in the raw mills. The gases from the raw mills are de-dusted in either an electrostatic precipitator or bag filter.	Point source emissions of atmospheric pollutants. Significant emissions of greenhouse gases.
Cooling	The hot clinker that is formed in pieces about the size of large marbles is passed through the cooler where air cools the clinker. The hot air from the cooler is recycled to burn the fuel in the kiln. This helps reduce the amount of fuel needed. Excess cooling air is cooled in an air-to-air heat exchanger then de-dusted in a bag filter.	Point source emissions of atmospheric pollutants.
Clinker transfer to storage	Clinker is transferred from the clinker cooler to storage in bucket conveyors. The transfer system is enclosed and the transfer points are fitted with dust collection systems.	Minor fugitive dust emissions
Clinker storage	Clinker is tipped from the bucket conveyor to the storage areas, the Mole or the A Frame. The Mole is fitted with a de-dusting system. The A Frame has no de-dusting system.	Point source emissions of atmospheric pollutants. Minor fugitive dust emissions

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Operation	Description	Potential for Emissions
Clinker transfer to milling/despatch	Clinker from Mole and A Frame are transferred to the cement mill feed hoppers or the clinker despatch silo by a conveyor system. The transfer system is enclosed and the transfer points are fitted with dust collection systems. The road despatch silo is fitted with a telescopic chute that had eliminated dust during loading.	Minor fugitive dust emissions
Clinker despatch	Clinker is stored in the despatch silo prior to loading and despatch. Clinker is despatched by road trucks or by rail bulk wagons. Trucks and rail wagons are fitted with covers to prevent fugitive emissions during transport. The clinker despatch silo and load out points have de-dusting systems.	Point source emissions of atmospheric pollutants. Minor fugitive dust emissions
Finished cement grinding	The cooled clinker together with a small amount of gypsum to control how fast the cement sets is ground in the cement mills to make the finished product cement. Other additives can be mixed with the clinker to make different types of cement. The cement mills and separators are fitted with dust collections systems.	Point source emissions of atmospheric pollutants.
Cement storage and despatch	The ground cement is stored in silos until required by our customers. Cement is despatched by road bulk trucks or by rail bulk wagons to other despatch depots. The storage silos and load out points are fitted with de-dusting systems.	Point source emissions of atmospheric pollutants.

Production of Clinker by the DRY Process

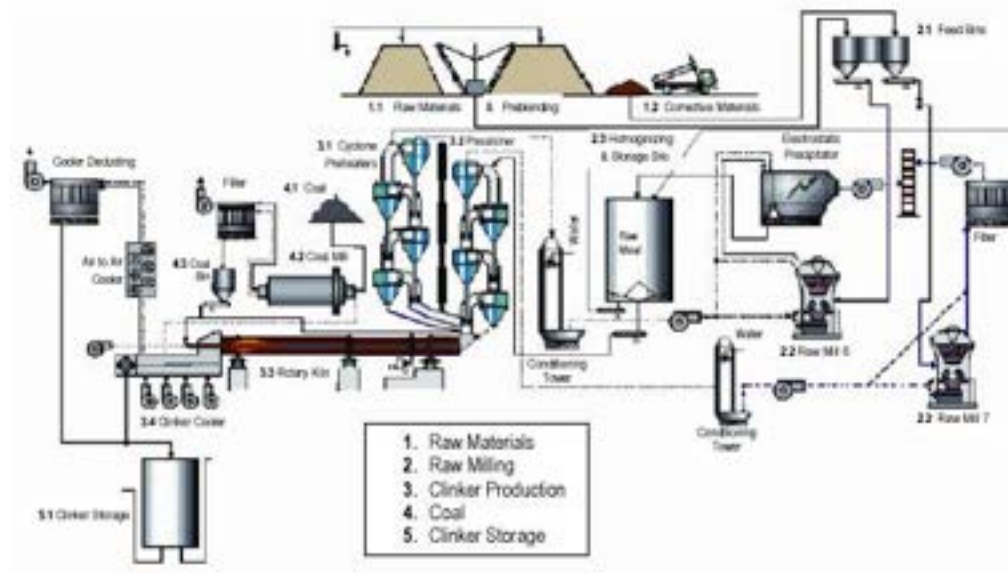


Figure 1 Clinker Manufacturing Process

Emission sources

The emission sources used for modelling in the MOD 9 application are summarised in Attachment 1.

5.2 EMISSION LIMITS & EMISSION MONITORING

Air Quality Monitoring

The following monitoring occurs at the Works:

- Fugitive dust emissions: nine dust deposition gauges have been installed around the boundary.
- Isokinetic stack monitoring program to measure emissions at point sources (stacks).
- Continuous emission monitoring (CEM) for particulate in the kiln stack.
- Ambient air quality monitoring using a HVAS to measure PM₁₀, TSP and heavy metals.
- Ambient air quality monitoring to measure PM_{2.5}.
- Meteorological monitoring.

All monitoring is undertaken in accordance with methods described in Australian Standards and the NSW Approved Methods by qualified persons trained in emission monitoring procedures.

In addition to the above, the site, has committed to a Pollution Reduction Program with the EPA to expand the existing use of 1 real time continuous dust monitor to 4 real time dust monitors. These monitors will be used as a management tool incorporated in the Berrima Dust TARP for the site to identify nuisance dust that may be impacting residents of New Berrima.

Monitoring Schedule

The environmental dust monitoring program is conducted continually with the deposition gauges being changed monthly by an independent service provider (ALS).

Samples from the HVAS are collected every 6 days by an independent service provider (ALS). Sampling will continue until instructed otherwise by the EPA. Material collected on the filters is analysed for PM₁₀, TSP and a range of heavy metal contaminants in the TSP matter.

Note: As with any type of monitoring equipment there is potential for failure to run. Should a sample not be collected due to equipment error and unintentional human

error, this would not be considered a non-compliant event and an additional day will be added to make up for the missed sample.

Meteorological monitoring is conducted continually and record the following parameters; rainfall, temperature at 2m and 10m, wind speed and wind direction at 10m, solar radiation at 10m and barometric pressure.

Particulate, NO_x, SO_x, VOCs, CO, CO₂, HCL and O₂ in the kiln stack is being monitored continuously, with raw data sent to Central Control Room.

Data from the continuous emission monitoring system (CEMS) are recorded by Control Room and by equipment provider, Ecotech who also provides monthly reports.

The isokinetic stack sampling program is conducted according to the requirements of the DA and EPL – once a year for standard fuels and since the commencement of the NSF program, quarterly in the first year, twice a year in the second year. Further schedule will be agreed upon a review of monitoring results.

The 4 continuous dust monitors, connected directly to the control room. As per the Berrima Dust TARP, the operators monitor dust results and where required notify Managers/Supervisors of real-time alerts. This monitor is a management tool, not a compliance tool, to assist operations to identify potential dust events or conditions that could lead to nuisance dust complaints from residents within New Berrima. A trial of the Berrima Dust TARP and the Alerts associated with the new real time monitors in underway with reporting required to the EPA on a regular basis.

In addition to the above on going monitoring, Condition 1.4 BA and 1.4 BB of Modification 15 Conditions of Consent requires air emission stack testing once commencement of the use of AKF5 as a fuel.

“1.4BA Notwithstanding condition 1.4B of this consent, the Applicant must undertake an air emissions stack test within three months of the commencement of use of AKF5 as a fuel in Kiln 6, or as otherwise agreed to by the Planning Secretary. The Applicant must:

- a) carry out the air emissions stack test to the satisfaction of the Planning Secretary;
- b) undertake the air emissions stack test at a high feed rate of 4.5 tonnes per hour of AKF5, or as otherwise approved by the EPA;
- c) engage a suitably qualified and experienced person(s) to carry out the air emissions stack test;
- d) notify the Planning Secretary and EPA prior to the commencement of the air emissions stack test; and
- e) report the outcomes of the trial and stack test to the Planning Secretary and the EPA within one month of the conclusion of the test period, unless otherwise agreed by the Planning Secretary.

1.4BB The air emissions stack test report required by condition 1.4BA must include the following information:

- a) the dates and times when the air emissions stack test was carried out;
- b) the rates of feed of AKF5 during the air emissions stack test;

- c) the results of the air emissions stack test, including identification of any non-compliance with the conditions of this consent and the EPL; and
- d) details of additional measures to be implemented to address any non-compliance

Stack testing was undertaken over the 28th and 29th November 2023 in relation to Condition 1.4BA and BB.

The resulting report and required details were issued to DPHI on the 28th February 2024.

The report concluded that all analytes were in compliance with the licence limits set by the NSW EPA as per EPL 1698.

Monitoring / Discharge Locations

The point source monitoring locations at the Works are described in Table 5, below.

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EPA ID No:	Type of Monitoring Point	Type of Discharge Point	Description of Location
2	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Kiln Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
4	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Cement Mill Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
5	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.6 Kiln Cooler Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
7	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.5 Cement Mill Stack on map entitled Site Environmental Layout - Drawing 40405 Rev C, dated March 2006, provided to the EPA on 15 March 2006. This Mill has not been in service in several years so currently no emissions are being measures at that source.
10	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	No.7 Cement Mill Stack on map entitled Site Environmental Layout, Drawing 40405 Rev C, dated 14 March 2006, provided to the EPA on 15 March 2006.
11	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 1 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
12	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 2 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
13	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 3 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
14	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 5 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.



EPA ID No:	Type of Monitoring Point	Type of Discharge Point	Description of Location
15	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 7 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
16	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 8 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
17	Dust Monitoring	Fugitive	Dust deposition gauge labelled as 9 in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
18	Ambient air quality monitoring - high volume air sampler or equivalent	Fugitive	High volume air sampler or equivalent located on the south eastern side of the works and labelled HVAS in aerial photograph of Boral Cement Berrima premises attached to Boral letter dated 28 September 2012 and held on EPA file LIC06/331-27.
19	Parameter Monitoring		In the Calciner in the vicinity of the point where the Non-Standard fuel enters and is fired.

Current locations of the dust deposition gauges are shown on Figure 2.

Figure 3 shows the locations of the 4 real time dust monitors installed at the end of 2024.

The ambient air monitoring station is located to the west of the Works in a location approved by the EPA.

As required by the NSW *Protection of Environment Legislation Amendment Act 2011*, the monitoring data are provided on the Work's website. The summary report is updated each month with all new results received in the preceding month and uploaded by the 10th working day of the next month.

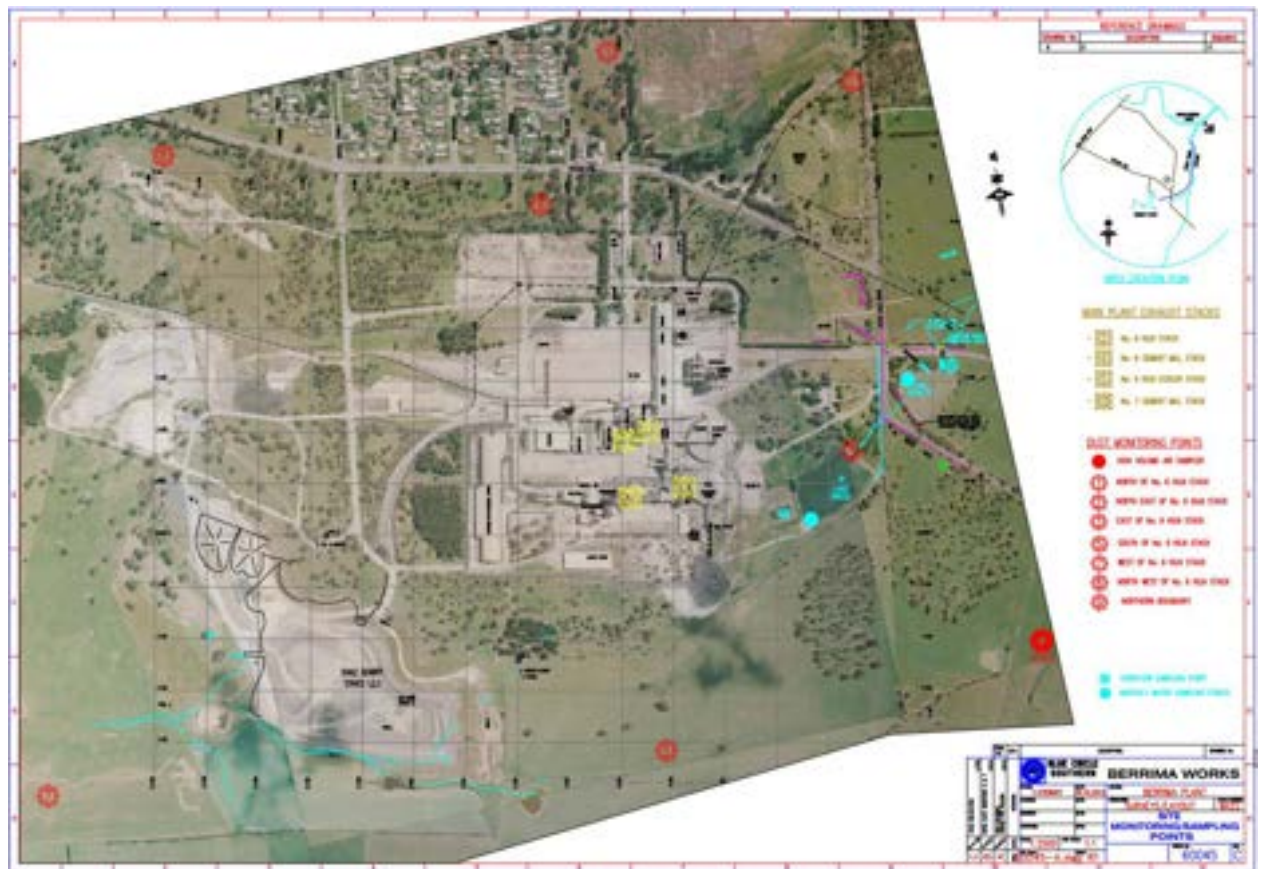


Figure 2 Monitoring and sampling points



Figure 3 – R-time dust monitor locations

Stack Emission Limits

For each monitoring/discharge point the concentrations of pollutants must not exceed the limits in Table 6, as specified in the EPL.

Table 6 Emission limits

Emission Point	Pollutant/Parameter	Units of measure	100 percentile concentration limit	Averaging period
No. 6 Kiln stack	Mercury	mg/m ³	0.05	1 hour*
	Type 1 and Type 2 substances	mg/m ³	0.5	1 hour*
	Solid particles	mg/m ³	50	24 hour
	Nitrogen Oxides	mg/m ³	1000 & 1250	24 hour & 1 hour respectively
	Cadmium+Thallium	mg/m ³	0.05	1 hour*
	Chlorine	mg/m ³	50	1 hour block
	Dioxin & Furans	ng/m ³	0.1	6-8 hours
	Hydrogen chloride	mg/m ³	10	1 hour*
	Hydrogen fluoride	mg/m ³	1	1 hour*
	Sulphur dioxide	mg/m ³	50	1 hour block
	Sulfuric acid mist and sulfur trioxide	mg/m ³	50	1 hour*
	Volatile organic compounds	mg/m ³	40	1 hour rolling
No. 6 Cement Mill stack	Solid particles	mg/m ³	100	As per test method
No. 6 Kiln Cooler stack	Solid particles	mg/m ³	100	As per test method
No. 5 Cement Mill stack	Solid particles	mg/m ³	100	As per test method
No. 7 Cement Mill stack	Solid particles	mg/m ³	20	As per test method

Notes:

Type 1 and Type 2 substances are defined as an aggregate of Sb, As, Be, Cd, Cr,

Co, Pb, Mn, Hg, Ni, Se, Sn and V.

Reference conditions = Dry, 273K, 101.3kPa

* or the minimum sampling period specified in the relevant test method, whichever is greater.

Limits specified in the table above apply to the burning of all fuels, that is: coal, coke fines, natural gas, fuel oil, diesel and Non-Standard fuels.

Monitoring at Point 2 (Kiln No. 6) will be in accordance with the standard fuel monitoring requirements in the table at Condition E2.3 of the EPL until the commencement of the use of non-standard fuels.

The feed rate of HiCal 50 must not exceed 400kg per hour when the temperature is below 300°C at the outlet of the preheater strings and must only be used when blended with coal to make a homogenous blend where the concentration of coal must not exceed 4. This is reflected in the latest EPL variation 18/12/19.

Table 7 Temperature limit

Point	Parameter	Units of Measure	Limit	Averaging Period
19	Temperature	°C	850	Instantaneous

Further to the EPL limits there is a requirement to comply with sulfur in liquid fuel requirements under the Protection of the Environment Operations (Clean Air) Regulation 2022 (Clean Air Reg), with the Wingecarribee Council Jurisdiction. The recommencement of the use of AKF1 required a review against these limits and an exemption against the regulations.

The EPA granted approval on the 16 April 2025 for Boral to burn the liquid fuel (HFO) under these provisions of the Clean Air Reg, subject to conditions that will be issued in a notice of licence variation. In granting this exemption the EPA considered the high temperature process in the kiln and the chemical reactions within those processes that capture sulfur in the final cement product or as dust in the emission controls.

Monitoring Requirements

Emissions to air from Kiln 6 must be monitored at the frequency shown in Table 8 using the specified sampling method.

Table 8 Kiln 6 monitoring frequency

Pollutant/Parameter	Units of measure	Frequency	Sampling Method
Cadmium (Cd)	mg/m ³	Special Frequency 1	TM-12, 13 & 14
Carbon dioxide	%	Special Frequency 1 and Continuous	TM-24, CEM-3 & Procedure 1*
Carbon monoxide	%	Special Frequency 1 and Continuous	TM32, CEM-4 & Procedure 1*
Chlorine	mg/m ³	Special Frequency 1	TM-7
Chromium 6 (Cr 6+)	mg/m ³	Special Frequency 1	OM-4
Dioxins & Furans	ng/m ³	Special Frequency 1	TM-18
Dry gas density	kg/m ³	Special Frequency 1	TM-23
Hydrogen chloride	mg/m ³	Special Frequency 1 and Continuous	TM-8, PS-18 & Procedure 6*
Hydrogen fluoride	mg/m ³	Special Frequency 1	TM-9
Mercury (Hg)	mg/m ³	Special Frequency 1	TM-12, 13 & 14
Moisture content	%	Special Frequency 1	TM-22
Stack gas molecular weight	g/g-mole	Special Frequency 1	TM-23
Nitrogen Oxides (as NO ₂)	mg/m ³	Special Frequency 1 and Continuous	TM-11, CEM-2 & Procedure 1*
Oxygen (O ₂)	%	Special Frequency 1	TM-25, CEM-3 &

Pollutant/Parameter	Units of measure	Frequency	Sampling Method
		and Continuous	Procedure 1*
Solid Particles	mg/m ³	Special Frequency 1 and Continuous	TM-15, PS-11 & Procedure 2^
Sulphur dioxide	mg/m ³	Special Frequency 1 and Continuous	TM-4, CEM-2 & Procedure 1*
Sulphuric acid mist and/or sulphur trioxide	mg/m ³	Special Frequency 1	TM-3
Temperature	°C	Special Frequency 1 and Continuous	TM-2
Thallium	mg/m ³	Special Frequency 1	TM-12, 13 & 14
Type 1 and Type 2	mg/m ³	Special Frequency 1	TM-12, 13 & 14
Velocity	m/s	Special Frequency 1 and Continuous	TM-2 & CEM-6
VOC	ppm	Special Frequency 1 and Continuous	TM-34 & CEM-8
Volumetric flow rate	m ³ /s	Special Frequency 1 and Continuous	TM-2 & CEM-6

Notes:

Type 1 and Type 2 substances are defined as an aggregate of Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni, Se, Sn and V.

Volatile organic compounds may be replaced by Total organic carbon (TOC) or other equivalents as agreed by the EPA.

Special frequency 1 is defined as a round of air emission monitoring (for each of the pollutant/ parameter nominated for a discharge point) conducted:

- every 3 months for a minimum of 12 months following the successful completion of the PoP Trials;
- then every 6 months thereafter (following approval from the EPA)

* Procedure 1 Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination, US EPA.

^ Procedure 2 Quality Assurance Requirements for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources, US EPA.

The Boral Cement Limited Work Instruction WI-09-01.47 – No. 6 Kiln document provides further detail on the continuous monitoring of temperature and fuel feed rate.

For the stack monitoring points, frequency and the specified sampling method is outlined in Table 9.

Table 9 Stack monitoring frequency

Emission Point	Pollutant/Parameter	Units of measure	Frequency	Sampling Method
No. 6 Cement Mill stack	Solid particles	mg/m ³	Yearly	TM-15

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Emission Point	Pollutant/Parameter	Units of measure	Frequency	Sampling Method
No. 6 Kiln Cooler stack	Solid particles	mg/m ³	Yearly	TM-15
No. 5 Cement Mill stack	Solid particles	mg/m ³	Yearly	TM-15
No. 7 Cement Mill stack	Solid particles	mg/m ³	Yearly	TM-15

Air Quality Management Controls

Design

As a general principle, Boral Cement adopts the best practicable technology when designing new and when upgrading existing plant and equipment.

In addition, Boral Cement applies general principles of emission control and management in the design process.

Dust nuisance, which can be a major problem in the cement industry, is managed according to **CMT-ENV-001 Berrima Dust Management Plan and the Berrima draft Dust TARP**.

Measures that are being implemented or considered for the reduction of emissions to air from the Works include:

For thermal processing equipment

- selection of dry precalciner process technology to reduce fuel use;
- use of high efficiency spray system quench technology in conditioning towers to minimise the formation of dioxins and furans;
- selection of NO_x reduction burners/precalciner technology to reduce emissions of NO_x;
- selection and installation of bag filters and other dust control devices to reduce solid particulate emissions; and
- selection of technology to reduce the emissions of other air contaminants.

For materials handling, crushing and preparation equipment

- installation of dust control equipment such as bag filters to reduce solid particulate emissions;
- design of conveyors to minimise drop-height at chutes and the number of transfer points to reduce dust emissions; and
- enclosing the equipment to contain emissions.

Stockpiles, roads

- use of barriers/wind breaks to minimise wind pick up;
- stockpile locations selected to minimise wind pick of dust; and
- use of water carts and dust control chemicals to prevent dust emissions.



Buffer Zone and Screening

The Works are located in a rural environment. There are significant distances between the plant and potentially affected residences except for New Berrima village directly north of the Works and in the path of prevailing southerlies.

Boral Cement has undertaken a vegetation programme on the site. This programme will be continued and assists in containing fugitive emissions on site and the impact of emissions on potentially affected residences.

6. BASELINE DATA

The results of ongoing ambient air quality monitoring will continue to be published on Boral's Environmental Reporting site at

[Environmental Reporting | Boral](#)

7. IMPLEMENTATION, COMPLIANCE & TRAINING REQUIREMENTS

Training

Through delivery of an appropriate training program, staff are provided information regarding a number of issues, including:

- The potential for emissions from the various operations and the relevant operating and licence limits;
- The control technologies used to ensure emissions are maintained below the operating and licence limits;
- Action to be taken when emissions exceed the operating and licence limits; and
- The notification procedures when licence limits are breached.

Further information can be found in the Boral Cement's Corporate SOP No. **CEM-ENV-005 Environmental Training**.

Incident reporting

Incidents and non-conformances are managed in accordance with the emergency plan and pollution incident response management plan (attached to the OEMP) and safety management system (the system is on the Boral Cement intranet).

See Section 6 Incident and Non-Conformance Response within the Berrima OEMP.

Pollution complaints

Boral Cement will record water pollution related complaints in accordance with Condition M6 of the EPL and the complaints and dispute resolution procedure in Section 5.3 of the OEMP.

Reporting

Boral Cement has various reporting and record keeping requirements defined in the DAs and the EPL. Condition 7.3 of the consolidated consent requires preparation of an annual environmental management report (AEMR) and Condition R1 of the EPL requires preparation of an annual return. Refer to sections 5.2.1 and 5.2.2 of the OEMP for details.

Record Keeping

All records associated with the Non-Standard Fuel Program are to be maintained for a minimum of four years and be available for inspection by EPA and/or DPHI if requested. The process data recording system has three backup systems to minimise the risk of data loss.



- Record keeping is undertaken in accordance with Site Procedure **SP05-01-01 Document Control – Electronic Data**.
- Boral Cement maintains a document storage system through a Sharepoint platform to facilitate effective management and document control over controlled documents.
- Boral Cement currently use SeQuence* software to record HSE incidents on site, with any actions arising that are tracked until progressed and closed.

All records are to be kept for the time periods required by statutory timeframes and/or Boral policies (Refer to Boral HSEQ Group Standard GRP-HSEQ-2-04-Document Control and Records Management).

8. LEGAL REFERENCES

The business has access to the applicable legislation relevant to the OEMP via the Boral Group Standards GRP-HSEQ-1-04 Legal and Other Requirements.

Attachment 1 – emission estimations used in MOD 9 application

Source: Air Quality Professionals 2015 *Boral Cement Berrima Works – Use of Solid Waste Derived Fuels in Kiln 6 – Air Quality Impact Assessment*. Report prepared for Boral Cement Limited.

Table 1.1 No.6 Kiln stack mass emission rates for dispersion modelling for NO_x, TSP and NMHC (non-methane hydrocarbons) (24-hour average, continuous emissions)

	Units	NO	NO ₂	TSP	NMHC
Specified emission concentration	24-hour average, mg/Nm ³ at 10% O ₂	648	6.5	50	64.3
Peak-to-mean ratio to calculate equivalent near worst-case 1-hour average for dispersion model		1.20	1.39	1.37	1.37
Representative emission concentration, 1-hour basis	1-hour average, mg/Nm ³ at 10% O ₂	778	8.9	68.5	88.1
Gas flow rate	Nm ³ /s 10% O ₂	200	200	200	200
Mass emission rate	g/s	156	1.78	13.7	17.6

Table 1.2 No. 6 Kiln stack emission rates for heavy metals and trace pollutant modelling (continuous emissions)

Contaminant	Assumed emission concentration for dispersion model, mg/Nm ³ (10% O ₂)	Calculated emission rate (g/s) with gas flow rate of 200 Nm ³ /s (10% O ₂)
Sulfur dioxide	50	10
Sulfuric acid mist and/or sulfur trioxide	100	20
Arsenic	0.006	0.0012
Beryllium	0.006	0.0012
Cadmium	0.025	0.005
Cobalt	0.015	0.003
Chromium	0.04	0.008
Copper	0.13	0.026
Mercury	0.05	0.01
Manganese	0.71	0.142
Nickel	0.078	0.0156
Lead	0.06	0.012
Antimony	0.15	0.03
Selenium	0.029	0.0058
Thallium	0.025	0.005
Vanadium	0.024	0.0048
Tin	0.06	0.012
Hexavalent chromium	0.025	0.005
Chlorine	200	40
Hydrogen chloride	10	2
Hydrogen fluoride	1	0.2
PAHs as BaP-TEQ	0.000068 (68 ng/Nm ³)	1.36 x 10 ⁻⁵
Dioxins and Furans as I-TEQ	0.0000001 (0.1 ng/Nm ³)	2 x 10 ⁻⁶

Table 1.3 Cooler stack and cement mills TSP emission rates for pollutant modelling (continuous emissions)

Source	Assumed TSP emission concentration for dispersion model, mg/Nm ³ (see text for explanation of basis of assumptions)	Average flow rate from annual campaign testing, Nm ³ /min	Calculated TSP emission rate (g/s)
Kiln 6 Cooler	39	2562	1.7
Cement Mill 6	42	1314	0.92
Cement Mill 7	20	815	0.27

Table 1.4 No.6 Kiln and cement mills PM₁₀ and PM_{2.5} emission rates for pollutant modelling (continuous emissions)

Source	TSP emission rate, g/s	Percent of TSP that is PM ₁₀	Percent of TSP that is PM _{2.5}	PM ₁₀ emission rate, g/s	PM _{2.5} emission rate, g/s
Kiln 6 Stack	13.7	70%	33%	9.6 (35 kg/hr)	4.5 (16 kg/hr)
Kiln 6 Cooler	1.7	76%	40%	1.3	0.68
Cement Mill 6	0.92	100%	40%	0.92	0.37
Cement Mill 7	0.27	100%	40%	0.27	0.11

Modelled dust sources and their emissions were:

- Vehicle generated dust
 - TSP – 4.23 kg/vehicle kilometre travelled
 - PM₁₀ – 1.25 kg/vehicle kilometre travelled
- Movement and dumping of materials
 - Transfer points – 0.355 kg/hr TSP, 0.167 kg/hr PM₁₀
 - Excavators, shovels, front end loaders – 6.11 kg/hr TSP, 2.62 kg/hr PM₁₀
- Crushing
 - TSP – 0.11 kg/hr
 - PM₁₀ – 0.011 kg/hr



Attachment 2 – Site Air Emission Register

Site	Berrima Works	Last Updated	May 2023

Air Emission Source	Pollutant of Concern	What are the Control Measures in place?	Status
Limestone unloading	Fugitive dust (nuisance)	Wetting of material during loading at Marulan, partial enclosure of unloading operation, stopping of unloading operations during high winds	Review opportunity to de-dust unloading hopper.
Limestone transfer	Fugitive dust (nuisance)	System is enclosed, dust collection on transfer points.	On-going maintenance of dust collection systems to maintain low emissions.
Blue Shale Quarrying	Fugitive dust (nuisance)	Low speed operation with low dust emissions. Stopping operations during adverse weather conditions (high winds).	Ensure contractor stops operations during adverse weather.
Additive Raw Material Delivery, Storage and Transfer	Fugitive dust (nuisance)	Watering of unpaved road, use of dust control chemicals, sweeping of paved areas, stopping operations during adverse weather conditions (high winds).	Spray system to reduce fugitive dust emission being designed for Shale pad, reviewing use of dust control chemicals on uncovered stockpiles.

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<i>Air Emission Source</i>	<i>Pollutant of Concern</i>	<i>What are the Control Measures in place?</i>	<i>Status</i>
Additive Raw Material Crushing	Dust (nuisance)	Dust collection system installed on crusher. Conveyor system enclosed and transfer points fitted with dust collection systems.	Review use of water sprays to reduce fugitive dust emissions from crusher feed hopper.
Preblending	Dust (nuisance)	Operation enclosed in building	Ensure doors are kept closed to prevent dust emission to external.
Reclaiming	Dust (nuisance)	Operation enclosed in building	Ensure doors are kept closed to prevent dust emission to external.
Proportioning of Raw Materials	Dust (nuisance)	Operation enclosed in building. Conveyor system enclosed and transfer points fitted with dust collection systems.	Ensure doors are kept closed to prevent dust emission to external.
Grinding of Raw Materials	Dust (nuisance)	Operation enclosed in building	Ensure doors are kept closed to prevent dust emission to external.
Homogenising	Dust (nuisance)	Dry homogenising silo is fitted with dust collection system.	On-going maintenance of dust collection systems to maintain low emissions.
Burning	Solid particulates, NO _x , SO _x , CO, acid gases (HCl, HF, H ₂ SO ₄) VOC's, heavy metals, dioxin and furans, PAH's, PCB's, greenhouse gases	Electrostatic precipitator and bag filter for solid particulate, heavy metals, conditioning towers for dioxins and furans, low NO _x technology for NO _x , precalciner technology for PAH's, PCB, GHG emissions, acid gases, VOC's.	On-going maintenance of dust collection systems to maintain low emissions.

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<i>Air Emission Source</i>	<i>Pollutant of Concern</i>	<i>What are the Control Measures in place?</i>	<i>Status</i>
Cooling	Dust (nuisance)	Bag filter	On-going maintenance of dust collection systems to maintain low emissions.
Clinker Transfer and Storage	Dust (nuisance)	Bag filters	Ensure doors are kept closed to prevent dust emission to external.
Clinker Transfer and Despatch	Dust (nuisance)	Conveyor system enclosed and transfer points fitted with dust collection systems. Rail load out point fitted with dust collector Road load out point fitted with a telescopic chute.	Road load out point had no dust collection and used to be a major fugitive dust emission source. It has now been equipped with a telescopic chute and changed from a major fugitive dust source to negligible.
Finished Cement Grinding	Dust (nuisance)	Bag filters	On-going maintenance of dust collection systems to maintain low emissions.
Cement Storage and Despatch	Dust (nuisance)	Bag filters	On-going maintenance of dust collection systems to maintain low emissions.
Raw Coal Delivery and Storage	Dust (nuisance)	Coal is wet, system is enclosed	Dust emissions negligible.
SWDF storage, handling and feeding system	Odour	Keep storage area enclosed	
SWDF storage, handling and feeding system	Dust (nuisance)	All transfers, handling and storage undertaken within enclosed shed	Dust emissions are negligible

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<i>Air Emission Source</i>	<i>Pollutant of Concern</i>	<i>What are the Control Measures in place?</i>	<i>Status</i>
AKF5 Storage, handling and feeding system	Dust (nuisance)	Stabilised road, roofed storage, water cart used to dampen traffic areas as required.	Minimal dust, managed as part of day to day fugitive dust control.
HiCal Storage and Handling	Dust (Nuisance)	Tarped storage within shale pit.	Refer to DPE and EPA approved 190524 HiCal 50 Storage and Handling Procedure V4.

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Attachment 3 – NSW Department of Planning and Environment Proof of Performance Ongoing Use



Contact Name: Sally Munk
Number: 02 9274 6431
Email: sally.munk@planning.nsw.gov.au

Mr Greg Johnson
Environmental Sustainability Manager
Boral Cement
Level 3, 40 Mount Street
NORTH SYDNEY NSW 2060

Dear Mr Johnson

Boral Cement, Berrima - Proof of Performance Trial Report for the use of SWDF (DA 401-11-2002-I)

I refer to your letter dated 28 February 2019 seeking approval of the final consolidated Proof of Performance Trial (POPT) Report for the use of Solid Waste Derived Fuels (SWDF) in Kiln 6 at the Boral Cement Works at Berrima in accordance with Condition 3.27 of the consent (DA 201-11-2002-1, as modified).

The Department has reviewed the POPT Report, supporting continuous emissions monitoring system (CEMS) data and the additional information provided on 1 April 2019 in consultation with the Environment Protection Authority (EPA). A copy of the EPA's comments is attached.

The 'Proof of Performance Trial Consolidated Six Month Report for Solid Waste Derived Fuels', Version 1, prepared by Boral Cement Limited dated 28 February 2019, is approved and demonstrates the suitability of the ongoing use of SWDF in Kiln 6, subject to:

- limiting the amount of SWDF to be fired in Kiln 6 to 40%, as a percentage of total fuel,
- periodic stack testing being undertaken every three months for the first 12 months of use of SWDF. The monitored pollutants must be consistent with the requirements of the Environment Protection Licence (EPL 1698)
- provision of a monitoring report that outlines the results of the quarterly stack testing required in (b) above and provides an assessment of compliance against the air emissions limits for the facility, to the satisfaction of the Secretary
- periodic measurements of hydrogen chloride (HCl) taken every three months until such time the Secretary agrees the accuracy of the HCl CEMS is confirmed through successful calibration audits undertaken in accordance with USEPA Performance Specification 18.

As previously stated in the Department's letter dated 4 April 2019, Boral must ensure the community is kept up to date on activities at the Berrima Cement site, in particular, the use SWDF in Kiln 6. In accordance with Condition 5.4 of the consent, the Community Liaison Group must have access to all monitoring data, reporting and tracking and audit reports required by the consent, including the additional monitoring data and reporting required above.

Boral is also reminded of its obligations under Conditions 4.6 of the consent for an independent audit of the use of SWDF at the development within 12 months of the receipt of the first load of SWDF. The feed rate of SWDF may be increased to 50% as a percentage of total fuel subject to the approval of the monitoring reports required in (c) above and the independent audit required by Condition 4.6, subject to the approval of the Secretary.

Pursuant to Condition 6.3A of the consent, Boral is requested to confirm whether the Operational Environmental Management Plan requires updating following completion of the POPTs. Any amendments required must be submitted to the Secretary for review and approval.

Should you have any queries in relation to this matter, please contact Sally Munk, Principal Planning Officer, on the above contact details.

Yours sincerely

 23/4/19
Chris Ritchie
Director, Industry Assessments
as delegate of the Planning Secretary

cc. William Dove, Environment Protection Authority
Department of Planning and Environment
320 Pitt Street Sydney 2000 | GPO Box 39 Sydney 2001 | planning.nsw.gov.au

[illegible]



APPENDIX 5 DUST MANAGEMENT PLAN



Boral Cement Limited

Berrima Works

Dust Management Plan

(Appendix 5 of OEMP)

Document Filename:	CMT-ENV-001 Berrima Dust Management Plan
Document Owner:	Operations Manager, Berrima Works
Approved By:	Operations Manager, Berrima Works

Version History:

Version	Change Date	Summary of Change	Signed By
Rev.0	12 August 2011	New document	Alex Wnorowski
Rev.1	01 September 2014	Progress update of dust management on site	Alex Wnorowski
Rev.2	26 March 2018	Update to include new requirements from Modification 9 development consent	Mike Curley
Rev.3	28 April 2020	Minor changes to reflect Hi Cal storage	Greg Johnson
Rev 4	26 th May 2023	Minor changes to reflect Mod 15 Tyre Chips Storage and usage	

Rev 5	15 April 2025	Update to include requirements of Mod 14 Development Consent Update to include revised AKF5 specification Update to include review for usage of AKF1	Sharon Makin
Rev 6	23 March 2026	Reviewed in response to DPHI RFI. No changes required	Sharon Makin

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1. PURPOSE

This Dust Management Plan (the Plan) applies to the Boral Berrima Cement Works (the Works) site located at New Berrima, NSW.

This Plan was originally prepared to meet the requirements of the Pollution Reduction Program 6 (PRP 6) "Control of Fugitive Dust" incorporated into the site's Environment Protection Licence (EPL) No 1698 by the NSW Environment Protection Authority (EPA).

The overall aim of the Plan is to reduce offsite dust impacts to below the adopted values of:

- deposited dust – measured as annual rolling mean of 4 g/m²/month (as per AS 3580) using dust deposition gauges placed in the EPA-approved boundary locations;
- PM₁₀ and total suspended particulates (TSP) – measured using high volume air sampler (HVAS) equipment located offsite on Berrima Rd. as follows:
 - annual mean for PM₁₀ of 25 µg/m³;
 - annual mean for TSP of 90 µg/m³; and
 - 24-hr average mean for PM₁₀ of 50 µg/m³.

The Plan applies to all aspects of the Works. The focus will be on activities identified in the Plan as high and medium priority as the reduction of dust generation in these areas is expected to have the biggest impact on the overall success of dust mitigation.

2. SCOPE

This Plan addresses:

- current plant dust sources, issues and limits;
- monitoring dust emissions from the plant;
- compliance with relevant legislative requirements;
- provision of measures to manage the impact of all the dust issues at the site; and
- the management of non-compliance, if identified.

The Plan incorporates dust related conditions in the development approvals (DAs) for Kiln 6 (DA No. 401-11-2002-i) and Cement Mill 7 (DA No. 85-4-2005-i), including the consolidated DA for modifications 1 to 15 to DA No. 401-11-2002-i and EPL.

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3. DEFINITIONS

Table 1 Definitions

Term	Definition
EMS	Environmental management system. A collection of formally approved documents that define the Company's management practices aimed at protection of environment and minimisation of any adverse impacts on land, air, water and the community.
ESP	Electrostatic precipitator
SOP	Standard operating procedure. A formal procedure for undertaking complex and recurring tasks where neither physical nor environmental layout will change.
SWMS	Safe work method statement
HVAS	High volume air sampler
OEMP	Operational environment management plan
EPL	Environment protection licence
EPA	Environment Protection Authority
DA	Development approval

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4. RESPONSIBILITIES

The dust management responsibilities of personnel are summarised Table 2.

Table 2 Responsibilities

<i>Employees</i>	Responsible for ensuring that the dust issues for their work are minimised. This includes: ➤ observing any dust emission standards and procedures that apply to their work or operations; ➤ taking action to minimise or prevent dust emissions; ➤ identifying and reporting dust emissions; ➤ monitoring, reporting and assisting in the control of dust emissions to keep within approved levels.
<i>Team Leaders / Front Line Supervisors</i>	Responsible for minimisation of dust emissions arising from work methods and the working environment. This includes: ➤ identifying, reducing and preventing dust emissions; ➤ monitoring operations and maintenance work to ensure dust emissions are maintained within approved levels; ➤ initiating action to prevent dust incidents; ➤ identifying, reporting and recording dust emission incidents; ➤ initiating corrective actions to overcome dust emission incidents.
<i>Production Manager, Technical Manager and Engineering Manager</i>	Responsibility and authority to ensure that the site environmental dust objectives are achieved. This includes: ➤ ensuring staff are trained with respect to dust awareness, responsibilities, instructions and procedures; ➤ ensuring dust emission incidents are investigated and corrective and preventative action taken; ➤ ensuring operations comply with the conditions of DAs, EPL and relevant legislation; ➤ reviewing operations and implementing strategies to reduce dust emissions from the Works. ➤ developing and implementing contingency plans as required to remedy dust emissions and minimise dust complaints.
<i>Environmental Business Partner</i>	Responsible for: ➤ ensuring periodic dust monitoring is carried out. ➤ ensuring that an appropriate management plan is developed

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	and implemented if dust emission limits are found to have been exceeded. ➤ reviewing dust emission complaints received to determine if particular dust issues/trends are being identified.
<i>Site Operations Manager</i>	Responsible for: ➤ approving any communications to external parties on dust generating activities before their release. ➤ ensuring all personnel are aware of EPL, DA and other regulatory requirements relating to dust. ➤ implementing Boral environmental policy on site; ➤ ensuring site environment performance objectives and targets are established, monitored and achieved; ➤ defining responsibilities for the OEMP; ➤ ensuring the availability of resources; ➤ communicating the importance of the OEMP and meeting the statutory and regulatory requirements; ➤ Conducting management reviews of the OEMP; ➤ Ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities; ➤ verifying the implementation of corrective and preventive actions; and ➤ recognising and responding to community concerns.

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5. REGULATORY REQUIREMENTS

The Works are subject to a number of regulatory requirements governing the generation and management of fugitive dust emissions. These include, but are not necessarily limited to:

5.1 Protection of the Environment Operations Act 1997

Section 124 requires “the occupier of any premises who operates any plant in or on those premises in such a manner as to cause air pollution from those premises is guilty of an offence if the air pollution so caused, or any part of the air pollution so caused, is caused by the occupier’s failure:

- to maintain the plant in an efficient condition, or
- to operate the plant in a proper and efficient manner.”

Section 126 requires “the occupier of any premises who deals with materials in or on those premises in such a manner as to cause air pollution from those premises is guilty of an offence if the air pollution so caused, or any part of the air pollution so caused, is caused by the occupier’s failure to deal with those materials in a proper and efficient manner.

5.2 Environment Protection Licence No. 1698

The Works operates under EPL No. 1698, with the conditions in Table 3 applicable to fugitive dust emissions:

Table 3 Relevant EPL conditions

Clause	Requirement
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

5.3 Kiln 6 Upgrade Development Consent

Approval for Kiln 6 was granted on 12 May 2003 (last modified in 2023 (Modification 14)). The conditions in Table 4 are applicable to dust emissions.

Table 4 Development consent conditions

Condition	Requirement
3.7	The Applicant shall design, construct, operate and maintain the cement works

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	upgrade in a manner that minimises dust emissions from the site and complies with the EPL.
3.7A	The Applicant shall apply all reasonable and feasible measures to minimise the generation of dust from coal stockpiles, including but not necessarily limited to: a) compaction of stockpile batters to minimise pick up of dust; b) installation of water sprays or use of a water cart to keep stockpile surfaces wet, if dust is being generated; and c) cessation of stockpile generation during periods of high wind, if dust generation cannot be controlled.
3.8	The applicant shall take all practicable measures to ensure that all vehicles entering or leaving the site and carrying a load that may generate dust are covered at all times except during loading and unloading. Any such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicle at all times.
3.9	All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation of emission of wind blown or traffic generated dust from the site at all times.

5.4 Boral Group Environmental Policy

Boral Environmental Policy confirms the Group's support to the principle of sustainable development and requires that all sites and facilities comply with environmental regulations, standards and codes of practice relevant to the particular business as the absolute minimum requirement.

6. CURRENT DUST MONITORING

Air Quality monitoring, including gravimetric dust monitors and locations are detailed in Section 5.2 of CMT-ENV-003 Berrima Air Quality Management Plan.

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7. DUST MANAGEMENT MEASURES

7.1 Unsealed Haul Roads

Boral Cement is aware of the high dust generating potential of unsealed internal haul roads. The volume of dust generated is related to the road type, number of truck movements, truck speed and weather conditions.

Improvements to date

Some of the roads which were unsealed at the start of PRP6 are now sealed, some were closed for traffic and some are still remaining.

Wheel-wash facilities have been installed in two locations on unsealed sections of internal roads (before key intersections from unsealed to sealed roads) to prevent tracking of dust to sealed roads).

Management measures

The following measures will be undertaken to minimise fugitive dust from the unsealed haul roads:

- Selection of dedicated main haul routes and restriction of access to other unsealed roads or areas on a 'need to use' basis.
- Progressive sealing of unsealed haul roads.
- Availability of a suitable water cart with spray facilities for use as frequently as necessary to prevent the emission of fugitive dust. Note that during windy conditions and in prolonged dry weather water spraying will be required repeatedly during the day.
- Consideration of use of dust suppression agents to reduce the need of water sprays, if viable.
- Restriction of speed to 20km/hr on unsealed haul roads.
- Discipline in immediate cleaning of any material spilled onto a road. This will prevent it being pulverised into potentially fugitive dust. Truck drivers have a responsibility to immediately report spills to the Control Room.

7.2 Quarry and Crushing/Grinding Operations

When undertaking Quarry operations and outdoor Crushing and Grinding operations the following is considered:

- Raw material storage and batch processing.
- Planning how to cope with adverse weather conditions during operations.
- Water sprays onto material during the Quarrying process including ripping, stockpiling and loading of trucks.
- Water sprays during the outdoor Crushing/Grinding process including unloading, loading into crusher, crushing, crushed material exit, creation of crushed material stockpiles and loading of vehicles.
- The location of the external crushing units to minimise impacts from dust, noise etc.
- Management of haul roads including the use of water sprays, dust suppression agents,

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minimising dust track out to sealed roads etc.

- Minimising dust from haul truck loads (such as covers, load wetting, etc).

7.3 Outdoor Stockpile Management

Boral Cement Berrima requires the ability to stockpile outdoors raw materials, solid fuels and in certain circumstances clinker to conduct its operations under different market conditions. The generation of dust in outdoor storage may occur during transport to and from, unloading, construction, storing and extraction from the stockpiles. The following measures are undertaken to minimise fugitive dust from stockpile areas:

- Where possible, consolidation of existing stockpiles to reduce their overall numbers and footprint.
- Truck speed restriction to 20km/hour in stockpile areas.
- Restriction of outdoor stockpile height to a maximum of 8m outside of the quarry in areas where sprinklers are not available.
- Compaction of stockpile batters to minimise wind pick up of dust.
- To keep stockpile surfaces damp in dry weather, installation of water sprays for all stockpiles except clinker or use of a water cart with pumping facilities if adequate water sprays cannot be installed.
- Weather conditions, especially the strength and direction of wind, must be considered where any works are occurring on stockpiles. Adverse weather, in particular strong southerlies in drought conditions, can potentially cause significant impacts in the neighbouring residential area to the north of the Works. When such conditions are experienced or predicted, stockpile creation and extraction activities should be stopped until the weather changes.
- Stockpile operations, due to being especially weather-sensitive, should be managed by the Production Services and Logistics in cooperation with Shift Supervisors. Work schedule should be reorganised in adverse weather to minimise stockpile disturbance. Also, more frequent automatic or manual sprinkler system operation or water truck spraying.
- Progressive removal of stockpiles from high elevation areas to more appropriate low or below normal ground level areas e.g. to shale quarry areas not required for operations.
- Construction and vegetation of earth bund walls around dust-prone areas.
- Consideration of vegetation or engineered screens to be placed around stockpiles.
- Consideration of the possibility of using crusting agents for the management of dust generating stockpiles where they are to be undisturbed for more than 4 months.
- Management of the Hi Cal storage area in the Shale Pit includes the tarping of material.
- Management of tyre chips includes the storage of the chips within designated bunkers built to a height of 2.7m. Stockpiles will not be higher than the constructed walls. Bunkers are roofed.

SWMS must be prepared before the establishment of new stockpiles or significant handling/modification of existing stockpiles. At a minimum the SWMS should consider the following issues:

- materials to be stockpiled;
- location;

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- anticipated volume;
- dust generating potential;
- duration that the material is to be stockpiled; and
- Environmental risks, impacts and controls.

Standard operating procedures for stockpile management should also be developed and implemented to minimise the potential to generate fugitive dust.

The Environment Business Partner shall be made aware prior to the commencing of any new activities or modifications to existing activities at the stockpiles which may result in generation of excessive dust or any other environmental impacts.

7.4 No.6 Kiln Stack Emissions

No. 6 Kiln at Berrima is equipped with an Electrostatic Precipitator (ESP) and a bag filter for dust arrest. The ESP trips may cause a short spike of emissions but are closely watched and controlled to avoid excessive emissions. The particulate limit is 50 mg/m³ measured as a 24-hr average by a continuous meter.

7.5 Kiln Operational Controls

Maintenance of optimal operational conditions for No.6 Kiln will ensure that the likelihood of dust emissions is minimised. The kiln will be stopped if dust emissions are elevated and only restarted when emissions are addressed.

7.6 Sealed Internal Haul Roads

Boral Cement Berrima has an existing sealed internal road network for movement of materials and personnel. Sealed roads, if not maintained properly, can contribute significantly to fugitive dust. The following measures will be undertaken to minimise fugitive dust from sealed roads:

- Roads to be maintained in good working order with no large potholes.
- A street sweeper to be regularly used.
- Effective and disciplined covering of loads.
- Truck speed when carrying a covered load on sealed roads inside the plant to be limited to 50km/hr.
- Truck speed when carrying an uncovered load inside the plant to be limited to 20km/hr.
- Trucks carrying uncovered loads on internal roads, if cannot be avoided, to be loaded below 300mm of the freeboard.
- All trucks with a load must be covered on leaving the site.
- Immediate cleaning of any material spilled onto a road to prevent it being pulverised into potentially fugitive dust. Truck drivers have a responsibility to immediately report spills to the Control Room.
- Material from the interface between sealed and unsealed roads should be removed to limit the tracking of material and dust generation.
- Wheel wash facilities are provided for use by trucks entering intersections from unsealed to sealed roads.

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7.7 Unsealed Surface Areas

Exposed or unsealed areas have a potential to generate fugitive dust. The following measures will be undertaken to minimise fugitive dust from unsealed exposed areas:

- Minimising vehicle access through the use of bollards or road blocks (see Photo 3).
- Progressive re-vegetation (see Section 9),
- Progressive sealing, and
- Use of dust suppressants where temporary access is required.



Photo 3: Rock blocks in place to restrict vehicle movements to the stockpile area.

7.8 Truck Loading from Clinker Silo

Boral Cement has a clinker storage silo designed for the loading of clinker onto trains (see Photo 4) with little or no generation of fugitive dust. With the installation of a telescopic chute in 2012, this facility is able to load clinker onto road trucks, significantly reducing dust emissions from truck loading operations.

The present rail loading system from the clinker silo comprises three chutes configured to fit and seal over the three openings of a normal rail wagon. The chutes are connected to a single counterbalance system which makes them raise and lower together. With rail wagons, the two outer chutes are used for loading and the central chute is used for extracting the displaced air & fugitive dust to a dust collector where the dust is recovered and fed back to the wagon via one of the loading chutes.

The proprietary telescopic central loading chute assembly from a US company is designed to fill at a very high rate and is equipped with an integral dust collection system. The chute commences filling the truck close to its floor with detection devices automatically raising the chute while maintaining a minimal gap between the loaded materials and the enclosing chute skirts. The integral dust filter returns the collected dust to the truck.

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The loading operations are closely monitored in case process upsets result in elevated fugitive dust emissions.



Photo 4: Silo for the loading of clinker into trains and trucks

7.9 Operational Buildings

Operational buildings generally contain plant and machinery or are used for storage. The following activities will help to contain and minimise dust inside the buildings:

- Building doors/gates are to be kept closed/sealed to contain dust and noise, as well as improve safety and visual amenity.
- Dust collectors to be regularly maintained to provide effective de-dusting. They should be periodically inspected, and their maintenance planned in accordance with those inspections. Records to be kept of the inspections and of any remedial work carried out;
- Any excessive dust accumulated indoors to be regularly cleaned/removed;
- Dust spills and dust accumulated outside of buildings to be promptly removed;
- Clinker, being a material with high dust-generation potential during handling, should be stockpiled indoors as far as possible. This also prevents product losses due to inadvertent contact with moisture.

7.10 Routine Plant Operations

All plant operations including those of **Kiln, Cooler, Cement Mills, Raw Mills, Crushing, Cement Storage, Dispatch** and other operations mentioned previously are to be conducted in a manner that minimises fugitive dust emissions. Standard Operating Procedures (SOPs) and

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SWMS should specifically address environmental issues, in particular fugitive dust minimisation. Specific actions, procedures and processes are to be incorporated to all potentially dust-generating activities.

Special attention should be given to eliminating or minimising impacts from plant operational activities such as those below which have previously resulted in high fugitive dust emissions:

- Cleaning of blocked Kiln Preheater cyclones.
- Spillages and their cleaning from buildings at high elevations.
- Material transfer points due faulty or inadequate dust collection systems, belt cleaning equipment etc.
- Operation of equipment such as elevators, silos etc., with faulty ventilating dust collectors.
- Process faults due to incorrect procedures such as those that sometimes occur with K Damper, RM7 Fresh air damper etc.
- Process buildings and storage buildings with open or faulty doors.

8. LANDSCAPING AND REVEGETATION PROGRAMME

A major re-vegetation programme is being undertaken on site. The re-vegetation program was to accomplish the following main functions:

- Provide wind breaks for areas where dust may be generated through daily operations such as storage, loading, unloading etc.
- Reduce dust pickup from exposed areas. Vegetation is the most effective way of control of fugitive dust from exposed areas.
- Capture and immobilise dust generated during operations.
- Increase visual amenity.
- Enhance natural habitat.

Trees, shrubs and ground cover varieties indigenous to the local area were planted along with hydromulching, which incorporates native seed mixes. The initiative is following the Pollution Reduction Program (PRP 9) Landscape and Rehabilitation Works that was included in the EPL in 2012.

9. COMMUNICATION, REPORTING AND TRAINING

10.1 Incident Reporting

Incidents and non-conformances are managed in accordance with the emergency plan and pollution incident response management plan (attached to the OEMP) and safety management system (the system is on the Boral Cement intranet).

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See Section 6 Incident and Non-Conformance Response within the Berrima OEMP.

10.2 Pollution complaints

Boral Cement will record air pollution related complaints in accordance with Condition M6 of the EPL and the complaints and dispute resolution procedure in Section 5.3 of the OEMP.

10.3 Annual Reporting

Boral Cement has various reporting and record keeping requirements defined in the DAs and the EPL. Condition 7.3 of the consolidated consent requires preparation of an annual environmental management report (AEMR) and Condition R1 of the EPL requires preparation of an annual return. Refer to sections 5.2.1 and 5.2.2 of the OEMP for details.

10.4 Record Keeping

Record keeping is undertaken in accordance with Site Procedure **SP05-01-01 Document Control – Electronic Data**.

- Boral Cement maintains a document storage system named WizBiz to facilitate effective management and document control over controlled documents.
- SIMs/Sequence software is mandatory to record all incidents on site, with any actions arising that are tracked until progressed and closed.

All records are to be kept for the time periods required by statutory timeframes and/or Boral policies (Refer to Boral HSEQ Group Standard GRP-HSEQ-2-04-Documents Control and Records Management).

10.5 Training

Boral Cement undertakes an Environmental Awareness training programme for its employees. The Environmental Awareness training includes, among others:

- environmental legislative requirements applicable to the Works;
- responsibilities of each level of employees in ensuring environmental compliance and improvement;
- typical environmental breaches / non compliances, how they can be minimised or reduced and reporting protocols;
- video and photographic recordings of environmental incidents including fugitive dust emissions and their rectification (before and after) to generate performance improvement and encouragement;
- training of Berrima personnel, especially truck drivers and road maintenance staff, in terms of compliance with this Management Plan.

Boral Cement also communicates its environmental performance as required to Regulators, Senior Management, employees and local community in appropriate formats such as reports, newsletters etc.

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APPENDIX 6 NOISE MANAGEMENT PLAN



Boral Cement Limited

Berrima Works

Noise Management Plan (Appendix 6 of OEMP)

Document Filename:	CMT-ENV-004 Berrima Noise Management Plan
Document Owner:	Operations Manager, Berrima Works
Approved By:	Operations Manager, Berrima Works

Version History:

Version	Date	By Whom	Description of Changes
1	30 November 2006	Grant Williams	Original version
2	26 April 2007	Grant Williams	Update to include Cement Mill 7 Project Noise Criteria
3	25 May 2008	Grant Williams	Updated to comply with Boral Cement Corporate Environmental Noise Standard
4	16 June 2008	Grant Williams	Updated monitoring sites
5	27 October 2008	Grant Williams	Added contact details for monitoring sites
6	September 2011	Alex Wnorowski	Global revision and formatting change
7	September 2014	Michael Curley	3-yearly review
8	March 2018	Michael Curley	Update to include new requirements from Modification 9 development consent
9	April 2020	Greg Johnson	Update to include EPL Variation (Whole of site noise limit) and MOD 11 and 12 (Use of Isotainers and Whole of Site Noise Limit)
10	May 2023	Sharon Makin	Minor update to include Mod 13 & 15 details

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11	15 April 2025	Sharon Makin	Update to include requirements of Mod 14 Development Consent Update to include revised AKF5 specification Update to include review for usage of AKF1
12	23 March 2026	Sharon Makin	Reviewed in response to DPHI RFI. No changes needed



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Attachments

Attachment 1 – Reach Stacker Operator Code of Practice

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1. PURPOSE

Many activities that are undertaken on Boral Cement sites generate noise. These include handling, grinding and crushing of materials, train and truck movements and kiln cooling fans.

The purpose of the Berrima Cement Works (the Works) Noise Management Plan (the Plan) is to ensure that all personnel are aware of their obligations relating to environmental noise, such as site noise limits, and are able to implement appropriate controls and management techniques for the operation of the Works to minimise noise nuisance in the local community.

The Plan also enables compliance with the conditions specified in the development approvals for Kiln 6 (DA No. 401-11-2002-i) and Cement Mill 7 (DA No. 85-4-2005-i), including the consolidated DA for modifications 1 to 15 to DA No. 401-11-2002-i (as Modified); and Environmental Protection License 1698 (EPL).

2. SCOPE

The Plan has been prepared in accordance with Condition 6.4(a) of the consolidated consent and addresses the following sub-conditions in Table 1.

Table 1: Noise Related Consent Conditions

Condition	Detail	Section
6 Environmental management		
Operational environmental management plan		
6.3B	Prior to the use of isotainers on the site, the applicant must update the OEMP required by condition 6.3 of this consent and include:	
a	A Code of Practice for operators of the isotainer reach stacker to reduce L _{Amax} noise events	Attachment 1.
b	Noise monitoring and management requirements specified in conditions 3.3 to 3.6 of the consent.	
6.4	As part of the OEMP for the cement works upgrade, required under condition 6.3 of this consent, the Applicant shall prepare and implement the following Management Plans:	
a	A Noise Management Plan to outline measures to minimise the impacts from the operation of the cement works upgrade on local noise levels.	Appendix 6
	i. all major noise sources including those arising from the upgrade of Kiln 6 and the installation of Cement Mill 7	Section 6.1
	ii. noise criteria for particular activities	Table 3
	iii. monitoring of noise emissions from the Kiln 6 and Mill 7 upgrade	Section 5.2



	iv. protocols for the minimisation of noise emissions	Section 6.2 & 6.3
	v. provision of measures to manage the cumulative impact of all the noise sources on site	Section 6.2 & 6.3
	vi. management of non-compliance, if identified	Section 8.1

3. DEFINITIONS

Table 2 Definitions

Term	Definition
<i>Ambient noise</i>	The all-encompassing noise associated within a given environment. It is the composite of sounds from many sources, both near and far.
<i>AEMR</i>	Annual environmental management report
<i>Background noise</i>	The underlying level of noise present in the ambient noise, excluding the noise sources under investigation.
<i>Decibel (dB)</i>	A unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.
<i>Environmental noise</i>	Noise that may have an impact on the community, outside the site boundary.
<i>Intrusive noise</i>	Refers to noise that intrudes above the background level by more than 5 decibels.
DA	Development Approval - a consent issued by the Department of Planning and Environment, detailing site-specific construction and operational conditions that Boral Cement must comply with.
DPHI	NSW Department of Planning, Housing and Infrastructure
EPA	NSW Environmental Protection Authority
EPL	Environmental Protection License 1698

4. RESPONSIBILITIES

The general responsibilities in Table 2 apply in relation to this Plan.

Table 3 Responsibilities

Role	Responsibility
<i>Employees</i>	Responsible for ensuring that the environmental noise standards for their work are achieved. This includes: ➤ observing any noise control instructions and procedures that apply to their work or operations; ➤ taking action to minimise or prevent noise incidents; ➤ identifying and reporting noise incidents; and ➤ monitoring, reporting and assisting in the control of noise emissions to keep within approved levels.
<i>Team Leaders / Front Line Supervisors</i>	Responsible for minimisation of noise emissions arising from work methods and the working environment. This includes: ➤ identifying, reducing and preventing noise emissions; ➤ monitoring operations and maintenance work to ensure noise emissions are maintained within approved levels; ➤ initiating action to prevent noise incidents; ➤ identifying, reporting and recording noise incidents; and ➤ initiating corrective actions to overcome noise incidents.
<i>Production Manager, Technical Manager and Maintenance Manager</i>	Responsibility and authority to ensure that the site environmental noise objectives are achieved. This includes: ➤ ensuring staff are trained with respect to noise awareness, responsibilities, instructions and procedures; ➤ ensuring noise incidents are investigated and corrective and preventative action taken; ➤ ensuring operations comply with the conditions of Development Approvals, Environmental Protection Licence and relevant legislation; ➤ reviewing operations and implementing strategies to reduce noise emissions from the Works; and ➤ developing and implementing contingency plans as required to remedy noise nuisance and minimise noise complaints.
<i>Senior Environment Business Partner/</i>	Responsible for:



<i>Environmental Business Partner</i>	➤ ensuring periodic noise monitoring is carried out; ➤ ensuring that an appropriate management plan is developed and implemented if noise limits are found to have been exceeded; and ➤ reviewing noise complaints received to determine if particular noise issues/trends are being identified.
<i>Site Operations Manager</i>	Responsibility and authority to ensure that the site environmental noise objectives are achieved. This includes: ➤ approving any communications to external parties on noise generating activities before their release; ➤ ensuring all personnel are aware of EPL, DA and other regulatory requirements relating to plant noise; ➤ implementing Boral environmental policy on site; ➤ ensuring site environment performance objectives and targets are established, monitored and achieved; ➤ defining responsibilities for the OEMP; ➤ ensuring the availability of resources; ➤ communicating the importance of the OEMP and meeting the statutory and regulatory requirements; ➤ conducting management reviews of the OEMP; ➤ ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities; ➤ verifying the implementation of corrective and preventive actions; and ➤ recognising and responding to community concerns.

5. NOISE LIMITS AND MONITORING

5.1 CURRENT LIMITS

The DAs for the Upgrade of the Kiln 6 Upgrade (DA 401-11-2002-i) and Cement Mill 7 (DA 85-4-2005-i) up to and including MOD 15 include noise criteria for each project. The same criteria are duplicated in the EPL.

Subject to compliance with these and other conditions in the DAs and EPL, the Kiln 6 and Cement Mill 7 can be operated 24 hours per day and seven days per week.

The DAs define the maximum allowable noise contribution limits from the operation of Kiln 6 (Table 3) and Cement Mill 7 (Table 4). This condition requires Boral Cement to design, construct, operate and maintain all new and upgraded components forming part of the upgrade of Kiln 6 or the installation of Cement Mill 7 to ensure that for each receiver location listed in the following tables, the noise level at each receiver location does not exceed the maximum allowable noise contribution limit at the receiver location specified.

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These criteria were amended for MOD 12 to provide a whole of site noise limit and a single noise compliance point. This is also reflected within the sites EPL.

Table 4 – Whole of Site Limits including modifications up to MOD 12): Maximum Allowable Noise Contribution Limit (dB(A))

Receiver Location	Day ^a L _{A90} (15 minute)	Evening ^b L _{A90} (15 minute)	Night ^c L _{A90} (15 minute)
The Noise Compliance Point (Point 20) – Store Yard Close*	58	58	58

Note*: The location as per Appendix 2 of the Consolidated Consent is shown in Figure 1 below.

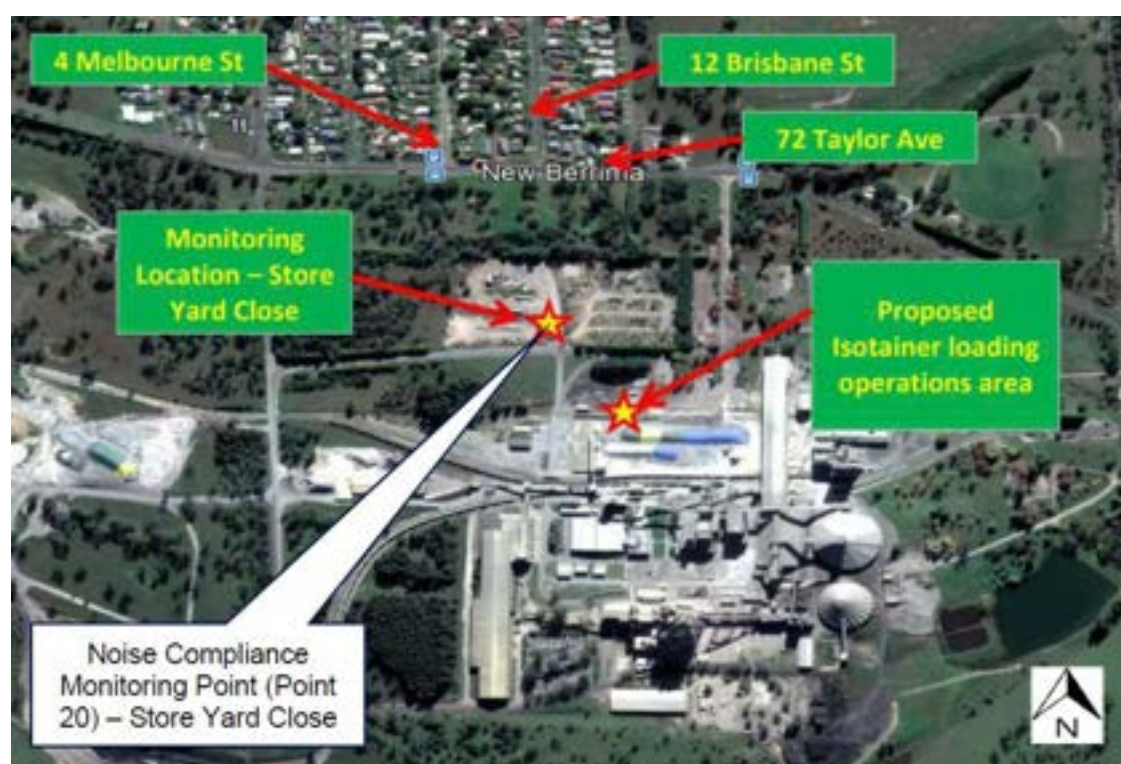


Table 5 – Cement Mill 7 Project only: Maximum Allowable Noise Contribution Limit (dB(A))

Receiver Location	Day ^a L _{Aeq} (15 minute)	Evening ^b L _{Aeq} (15 minute)	Night ^c L _{Aeq} (15 minute)
Adelaide Street, near Taylor Avenue, New Berrima	43	43	40
Argyle Street, near Taylor Avenue, New Berrima	43	43	40
Candowie Farm	43	43	40



a) *Day is defined as the period from 7:00am to 6:00pm Monday to Saturday and 8:00am to 6:00pm on Sundays and public holidays.*

b) *Evening is defined as the period from 6:00pm to 10:00pm.*

c) *Night is defined as the period from 10:00pm to 7:00am Monday to Saturday and 10:00pm to 8:00am on Sundays and public holidays.*

The maximum allowable noise contributions apply under all meteorological conditions, except:

a) *during wind speeds greater than 3 ms⁻¹ measured at 10 m above ground level; or*

b) *during temperature inversion conditions of greater than 3°C/ 100 m and wind speeds of greater than 3 ms⁻¹ measured at 10 m above ground.*

Noise must be measured:

a) *at the most affected point on or within the receptor site boundary or at the most affected point within 30 m of the dwelling (rural situations), where the dwelling is more than 30 m from the property boundary; and*

b) *where applicable, subject to the modification factors provided in Fact Sheet C of the EPA's (2017) Noise Policy for Industry.*

5.2 MONITORING

Environmental noise monitoring is undertaken annually by a qualified noise consultant to assess noise levels at residential receiver locations and compare it to objectives in the DAs.

Monitoring is undertaken for a minimum of 24 hours and typically over a period of seven days. Sampling intervals are 15 minutes.

In case of noise limit exceedance, data is compared with the operational reports to identify activities that were in progress during the monitoring period.

Meteorological data is recorded during the monitoring period.

As per requirements of the NSW *Protection of Environment Legislation Amendment Act 2011* (POELA Act), Boral is obliged to publish on the Work's webpage the monitoring data that are required by the EPL. The summary report is updated each month with all new results received in the preceding month and (subject to the supply of laboratory or final monitoring reports) uploaded by the 10th working day of the next month.

Noise is only monitored annually or if a complaint is received, as the EPL does not specify monitoring frequency. The annual monitoring results are reported in the annual environmental management review to DPHI and annual return to EPA. The noise results are also included in the monthly data summary required under the POELA Act in the report submitted the month after the monitoring occurred.

In addition to the periodic monitoring, trained and competent Works personnel can monitor and record environment and plant noise using portable monitoring equipment.

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5.3 NOISE PRP

The current whole of site limits were established following the acceptance of the EPL 1698 PRP 7 which was added to the EPL in December 2019 and modified within the Kiln 6 consent in April 2020.

Accordingly, as per condition 3.3A, Any new or upgrade development projects the subject of any modification to this consent must give consideration to the Project Specific Noise Levels identified in the document titled 'PRP – Response – Identifying Environmental Noise Objectives For Berrima Cement Plant' 27 March 2018, prepared by Recognition Research. These are shown in Table 6.

Table 6 Project Specific Noise Levels

Receiver location	Period	Recommended PSNL LAeq(period)	Measured long-term average LA90	Recommended PSNL for Night-time LA1(1minute)
Taylor Avenue near Adelaide Street	Day Evening Night	48 44 43	47 44 44	58
4 Melbourne Street	Day Evening Night	46 42 40	45 44 43	56
Chesley Park Farm 1	Day Evening Night	49 45 40	44 43 42	54
12 Brisbane St	Day Evening Night	51 45 40	44 42 42	56

5.4 Noise Verification report

Condition 3.6A and 3.6B, following Mod 13 requires a Noise Verification report to be submitted:

- (a) prior to the commencement of construction of the chloride bypass system for Kiln 6 and
- (b) within three months of the commencement of operation of the chloride bypass system.

The initial report was submitted prior to construction and concluded...

“Operational noise targets were nominated for the modification in accordance with the Consent Conditions. At the nominated Noise Compliance Point – Store Yard Close, clear compliance is achieved indicating that the noise contribution to the DPIE’s overall facility noise limit of 58 dB at this location will be minimal. At residences, consideration of the PSNLs of the PRP-7 Response Report is required. The PSNLs have been met by a minimum of 5 dB.”

Monitoring of the operation of the CBS was undertaken in December 2023 with the report provided to DPHI as of the 9th February 2024. There were not noted changes in the overall noise due to the operation of the CBS.



6. MANAGING SPECIFIC NOISE SOURCES

6.1 PLANT NOISE SOURCES

As a part of the studies for the Kiln 6, Cement Mill 7 and solid waste derived fuels (MOD 9) , Isotainer (MOD 12), Chloride Bypass System (Mod 13) and AKF5 Storage (Mod 15) projects, maximum sound power levels for major noise emission sources were identified.

Sound power level of the major noise sources associated with the upgraded plant was assessed by measurement of sound pressure levels at a set distance and calculation of sound power levels. The methods employed were in accordance with the requirements of AS1217.7-1985: Acoustics - Determination of sound power levels of noise sources - Survey method.

The sources along with their maximum allowable sound power level (SWL), where relevant are:

- *Raw materials handling* – contained within existing buildings and contribution to noise is minimal. No specific SWL was set.
- *Raw Mill* – new vertical spindle mill in new building on the southern side of existing building. Allowable SWL is 117 dB(A).
- *Raw Meal Handling* – new bucket elevators and air slides on the south side of the existing kiln. No specific SWL was set.
- *Gas Cleaning* – new baghouse on the southern side of the existing electrostatic precipitator. The allowable SWL is 103 dB(A).
- *Preheating* – new preheater tower with new cyclones and a calciner. The allowable SWL is 98 dB(A).
- *Cooler & Clinker Handling* – the cooler bed was widened and additional cooling fans provided. The allowable SWL is 103 dB(A).
- *Coal Mill* – dynamic separator system added with fan and dust filter system. No specific SWL was assigned for this item.
- *Cement Mill 7* – no specific SWL was assigned for this project. Assigned internal design reverberant sound pressure level (SPL) used in the calculations is 102 dB(A).
-

Solid Waste Derived Fuels Project:

<i>Reception shed:</i>	
➤ internal conveyors	78dBA
➤ crane system	93dBA
➤ debaler unit –; and	100 dBA
➤ road truck –	102 dBA.
<i>External plant and equipment:</i>	
➤ external conveyors –;	78 dBA
➤ road trucks –	102 dBA (per truck);
➤ conveyor drive –;	102 dBA
➤ hoppers –;	90 dBA
➤ hydraulic power pack –	84 dBA;
➤ fork lift	94 dBA

BERRIMA WORKS NOISE MANAGEMENT PLAN



Use of Isotainers Project:

Operation	Noise Source Description - Activity	Sound Pressure Level - L_{Aeq} dBA	Distance (m)	Sound Power Level - Total dBA
Train Activity	Train Loading to and from stack- North	73	8.5	100
	Train Loading to and from stack- Centre	73	8.5	100
	Loco idle (81 Class)	70	10	98
	Loco moving (82 Class)	74	10	102
Truck Activity	Truck loading to and from stack - Centre - 5 min per 15 (height average stacker engine bay and stack)	71	17	103
	Truck loading to and from stack - North - 5 min per 15 (height average stacker engine bay and stack)	71	17	103
	The truck return to intersection	71	3	88
	The truck return Accelerating @ intersection	72	12	102
	The truck return around loop to fill	71	3	88
	The truck backs in to fill	72	12	102
	The truck accelerates return from storage bay	72	12	102
	Truck Loaded from fill to intersection	70	4	90
	Truck Loaded accelerate from intersection	72	12	102
	Truck Loaded constant from intersection to Bay	70	4	90
	Truck Accelerates loaded from fill	72	12	102
Filling isotainers	Filling the isotainers	63	12	92

Chloride Bypass System

Axial fan FN433 - includes silencer	93 dBA
Axial fan FN010 - includes silencer	93 dBA
FN155 4 off heat exchanger cooling air fans	90 dBA per fan
Centrifugal fan FN240 - includes silencer	92 dBA
BL305 Aerzen rotary blower - Includes intake filter silencer & exhaust silencer plus Acoustic Hood	88 dBA 2
BL420 Aerzen rotary blower - Includes intake filter silencer & exhaust silencer plus Acoustic Hood	96 dBA 2
Centrifugal fan FN491 – includes silencer	90 dBA
Centrifugal fan FN541 – includes silencer	86 dBA
Centrifugal fan FN612 – includes silencer	88 dBA
Centrifugal fan FN452	90 dBA
VU755 Axial Fan & Filter	88 dBA
BF200 Jet Pulse Filter 10% duty cycle	83 dBA
BF610 Jet Pulse Filter 10% duty cycle	83 dBA
BF201, BF202 Rotary Air Lock	80 dBA
Screw conveyors (enclosed)	92 dBA per 100 m
Chain Bucket Elevator	92 dBA

AKF5 Storage and Feed Infrastructure

CAT 972M FEL	109 dBA
Feeder conveyor (per metre)	78 dBA

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Feeder conveyor motor	92 dBA
Hydraulic Power Pack	84 dBA

6.2 ENGINEERING CONTROLS

Noise controls can be incorporated into equipment at the design stage or retrofitted later, typically at a higher cost. Possible measures that could be considered for the reduction of noise from the Works include:

- For fans

- Selection of the most aerodynamically efficient device for the task or application, with the lowest speed motor and impellor (sound level is proportional to the fifth power of the rpm).
- Where inlets or discharges are open to atmosphere, the inclusion of appropriate silencers to reduce noise emission whilst minimising system pressure effects.
- Provision of enclosures for high noise motors or gear-boxes or fan casings. Enclosures can be fabricated from steel, concrete, timber or other material, depending on site and cost constraints, and explosive atmosphere considerations.
- Where enclosures are unsuitable, fan-casing break-out noise can be reduced by the application of suitable cladding to the exterior of the casing.
- Consideration of operation at different speed settings for heat exchanger fans, to suit climatic conditions, or having thermostat-controlled operation.
- Keeping doors on enclosures closed where reasonably practicable

- For materials handling, crushing and preparation

- Selection of size based on mechanical efficiency (i.e. not over or undersized for most of the operational range involved).
- Provision of damped chutes for high impact areas of hard materials to reduce dropping impact noise.
- Design of conveyors to minimise drop-height at chutes and the number of transfer points.
- Efficient use of screens for the separation of materials, including non-steel screens to reduce impact noise on screens, and damped discharge chutes.
- Use of vibration isolation and mounting of vibrating sections and items.
- Keeping doors on enclosures closed where reasonably practicable

- For solenoid valves and air-cleaning and handling systems

- Reverse pulses on bag-houses directed to a common manifold with silencing, in place of individual, small discharger silencers which often clog and become ineffective after a short period.
- Small silo-top bag filter systems having adequate silencing on the discharges.
- The most effective approach is to provide a ceiling noise specification for the installed new plant such that the noise criteria can be achieved.
- It is then necessary to select equipment that can achieve specification. Where specification sound levels cannot be achieved, detailed acoustic design measures would be required to reduce the noise levels.
- Keeping doors on enclosures closed where reasonably practicable

-For Isotainer Handling

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- The reach stacker used onsite must have the best available technology employed to minimise LAMax noise during operations
- All vehicles including Reach Stackers and Trucks used in Isotainer loading and unloading are to have broad-band reversing alarms installed.
- The locomotive of the train transporting isotainers to the site must be relocated to the eastern end of the train as soon as practicably possible after arrival during daytime to avoid such movements in the evening or night-time periods.
- See Reach Stacker Operators Code of Practice within Attachment 1.

6.3 BUFFER ZONES AND SCREENING

The Works is located in a predominantly rural environment. The community potentially affected by noise emissions from the Works is the village of New Berrima, located to the north of the Works. Nuisance noise is most often experienced at this location, especially at the times of prevailing southerly winds, temperature inversions and/or low cloud cover.

7. IMPLEMENTATION & TRAINING REQUIREMENTS

All employees should, through delivery of an appropriate training program, understand the following points:

- the most appropriate times to undertake high noise generating activities;
- the importance of keeping the doors and windows closed at all times in buildings containing noisy equipment (such as mills);
- the importance of timely equipment maintenance to prevent unnecessary noise (e.g. worn out bearings, loose rattling covers, etc.);
- the notification procedure, should it be necessary to undertake these activities outside of these times (e.g. in the case of emergency maintenance); and
- the need for use of suitable equipment such as acoustical enclosures when undertaking noisy activities, in order to minimise transmission of noise.
- All operators of the reach stacker are to sign and acknowledge the requirements within the Reach Stacker Operators Code of Practice (see Attachment 1)

Further information can be found in the Boral Cement's Corporate SOP No. **CEM-ENV-005 Environmental Training**.

8. REPORTING AND RECORD KEEPING

Record keeping is undertaken in accordance with various Boral policies and procedures.

- Boral Cement maintains a document control system via a Sharepoint platform to facilitate effective management and document control over controlled documents;
- Sequence software is mandatory to record all incidents on site, with any actions arising that are tracked until progressed and closed; and
- All records are to be kept for the time periods required by statutory timeframes and/or Boral policies (Refer to Boral HSEQ Group Standard GRP-HSEQ-2-04-Documents Control and

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Records Management.

Boral Cement has various reporting and record keeping requirements defined in the DAs and the EPL. Condition 7.3 of the MOD consent requires preparation of an annual environmental management report (AEMR) and Condition R1 of the EPL requires preparation of an annual return. Refer to sections 5.2.1 and 5.2.2 of the OEMP for details.

8.1 NOISE COMPLAINTS

The complaint procedure in Section 5.3 of the OEMP will be implemented if a noise complaint is received at the Works.

A contingency plan may need to be developed and implemented as required to remedy noise nuisance and to minimise noise complaints. The complainant is to be contacted with feedback within 24 hours of receipt of the complaint. Complaints shall be recorded in the Boral incident management system.

If a complaint is a result of existing equipment malfunction, this malfunction is to be attended to within one working day of the complaint being received if possible.

Monitoring conducted as a result of a complaint is to be compared with DA criteria and relevant standards.

A summary of the noise complaints is to be included in the AEMR and in the annual return.

9. REFERENCES

The business has access to the applicable legislation relevant to the OEMP via the Boral Group Standard GRP-HSEQ-1-04 Legal and Other Requirements.

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10. Attachment 1: Reach Stacker Operators Code of Practice

1. INTRODUCTION

1.1 BACKGROUND

The following Code of Practice has been prepared to satisfy the consent requirements in Condition 6.3B (MOD 12 Use of Isotainers), which requires the preparation of a Code of Practice for Operators of the Isotainer reach stacker.

1.2 GENERAL

This operator Code of Practice applies to all Boral Cement Berrima Works personnel and any other person conducting business for the Berrima works, or on any project associated with the Berrima works, whether a direct employee of Boral Cement or employed by some other organisation providing a service or product to the Company that involves the operation of a reach stacker.

We are all members of the general community, so you are expected to comply with all the relevant legal requirements and accepted community standards whilst conducting operations. Whether you are an employee of Boral Cement or operate any service to the company, your behaviour on onsite reflects upon the community reputation of Boral Cement and in this regard your understanding with this Operator Code of Practice is required.

1.3 BERRIMA CEMENT WORKS ISOTAINER LOCATION

The location of the Isotainer loading and handling area, as outlined below, shows the proximity of the isotainer operations area to the New Berrima Village. With this close proximity, operators need to be mindful at all time how noise can impact residents in New Berrima.



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1.4 WORKPLACE HEALTH AND SAFETY

The health and safety of all people employed by (or working for) Boral Cement and those visiting our sites, is of the utmost importance.

As an employee of Boral Cement, or supplier or contractor to Boral Cement, you are required to adhere to the occupational health and safety legislation.

This means that you must:

- ✓ Carry out your duties in a way which does not adversely affect your own health and safety or that of others;
- ✓ Cooperate with measures introduced in the interest of workplace health and safety, in particular follow WHS Standard Operating Procedures of the Boral Group;
- ✓ Attend WHS training provided;
- ✓ Immediately report all matters which may affect workplace health & safety to your supervisor;
- ✓ Correctly use any information, training, personal protective equipment and safety devices provided;
- ✓ Not intentionally misuse or recklessly interfere with anything that has been provided for health and safety reasons;
- ✓ Only do tasks for which you have authorisation and/or the necessary training, and for which all necessary safety arrangements are in place.

1.5 ENVIRONMENT

Boral Cement is committed to protecting the environment and preventing air, water and noise pollution. As the operator of a reach stacker, you are subject to environmental regulations relating to vehicle emissions and product spills.

You must understand and appreciate the seriousness of polluting the environment and the consequences of such events.

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2. Reach Stackers, Isotainers and Licensing

2.1 REACH STACKERS

A reach stacker means a powered reach stacker that incorporates an attachment for lifting and lowering shipping containers/Isotainers. An image of a typical Reach Stacker is below.



2.2 ISOTAINERS

Isotainers are tank-like vessels that are encompassed within a standardised rectangular frame, which are of a similar dimension to a shipping container. The standardised dimensions allow the isotainers to be moved on various means of transport, including rail, road and sea.

An empty isotainer weighs three tonnes and can carry up to 28 tonnes of product (the same amount as a tanker). Product can be discharged from the isotainer at one tonne per minute, and they are currently used on some Boral trucks within the road transport fleet.

An image of a typical isotainer is provided below.



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2.3 LICENSING AND COMPETENCY

In Australia, any person operating a reach stacker > 3T that incorporates an attachment for lifting, moving and travelling with a container is required to hold a reach stacker High Risk Licence (HRW).

To obtain a licence, operators need to undertake appropriate training and be deemed competent against the Units of Competency within TLILIC 0011 – Licence to operate a reach stacker >3T through a registered training organisation.

Accordingly, any operator of a reach stacker at the Berrima Operators are required to be licenced and understand the site specific environmental risks.

Being licensed, all operators are already deemed competent to undertake various tasks as per TLILIC 0011, including:

- Planning work
- Conducting routine checks
- Preparing reach stacker operations
- Operating reach stackers
- Travel reach a stacker and mobile container
- Shutting down and securing reach stacker

3. BERRIMA ISOTAINER OPERATIONS

The isotainer filling process generally approved in the consent is as follows:

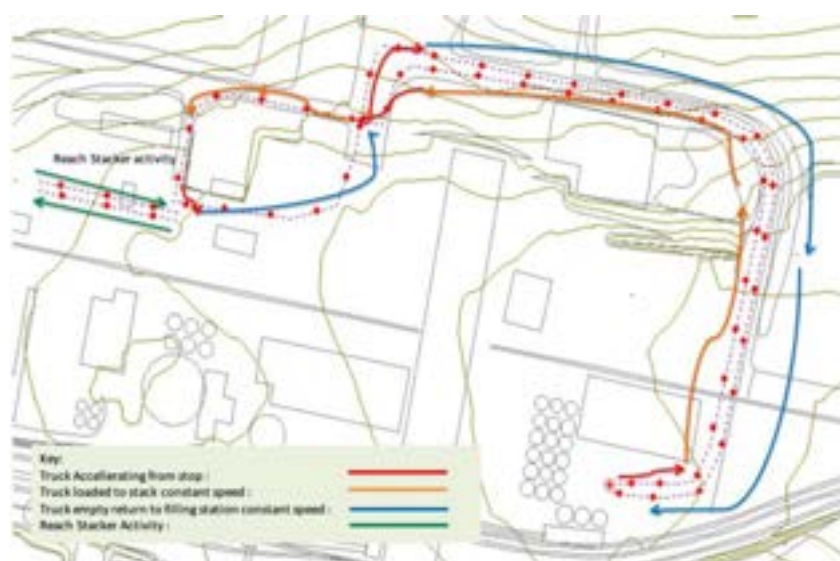
- The train arrives to site with flat-bed cars, Isotainers are unloaded from the train, using a 'reach stacker' (a large forklift with a special lifting arm) which places the isotainers in the stack area waiting to be loaded onto a truck for filling;
- Trucks transport the isotainers to the existing filling station at the Cement works site, and return the isotainers to the stack/loading area;
- Full isotainers loaded onto the train, to allow for distribution.

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Trucks involved in the movement of the isotainers will use internal roads between the isotainer loading operations stack area and filling area and will not leave the cement works. The truck routes to the filling locations is outlined below.



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These empty isotainers will be unloaded and the train reloaded with full isotainers; according to the arrival of the train to the site. The same reach-stacker used to unload and load the trucks at the terminal, will be used to unload and load the trains.

4. ISOTAINER OPERATIONS NOISE IMPACTS

Potential noise impacts from the operation of isotainer loading activities were modelled and assessed under the Environmental Noise Assessment prepared in support of this modification.

Operational noise limits for the facility are contained at DA 401-11-2002 condition 3.3

With regard to rail movements on site, the noise assessment report identifies that a beneficial mitigation measure to enhance the level of compliance, notwithstanding the fact the proposal complies with all noise limits as demonstrated above, is that operations consider relocation of the locomotive to the eastern end of the train to normally occur as soon as possible after arrival during daytime, and try to avoid movements in evening or night-time periods.

This measure will be taken into account in the course of train slot selection, and will be expressed as a preference in the selection methodology.

5. REACH STACKER ISOTAINER HANDLING NOISE SOURCES AND CONTROLS

As operators of the Reach Stacker, operators are required to understand sources of noise when handling isotainers and techniques to minimize. These are outlined in the table below.

Noise Source or Noise Concern	Control
Reach Stacker Reversing Alarm	Only operate reach stacker if broad-band reversing alarm installed.
Trucks used to move isotainers – reversing alarms	If trucks are required to reverse, only load if broad-band reversing alarm installed.
Reach stacker loading and unloading Isotainers from truck to stack • Uneven ground • Idling trucks and reach stacker • Trucks use of air brakes • Rushed placement of isotainer on stack or trucks creating unnecessary noise	• Report uneven ground • Avoid excessing idling or revving, turn off during breaks or excessive wait times • Report trucks using airbrakes • Avoid rushing

**BERRIMA WORKS
NOISE MANAGEMENT PLAN**



Reach stacker loading and unloading Isotainers from train to the stack • Uneven ground • Idling reach stacker • Rushed placement of isotainer on stack or train creating unnecessary noise	• Report uneven ground • Avoid excessing idling or revving, turn off during breaks or excessive wait times • Avoid rushing
Train shunting movements	To minimise the number of shunting movements use the maximum length of access to train i.e. approx. 400m
Other noise sources identified during operation	Operators to report any elevated noise activities

6. RESIDENT'S COMPLAINT HOTLINE

Operators should be aware that a complaints telephone number is available to the public to lodge complaints for noise and other environmental impacts from the Berrima Cement Works. The contact details are displayed on the signs at the entrance to the site.

All complaints will are logged and investigated.

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APPENDIX 7 EMERGENCY RESPONSE PLAN

Emergency Response Plan

Berrima Cement Works



Document Change Record

<u>Rev'</u>	<u>Comment</u>	<u>Developed by</u>	<u>Authorised by</u>	<u>Issue Date</u>	<u>Review Date</u>
1	Overall Review	Wayne Hewitt	Michael Curley	26/11/2014	26/11/2015
2	Overall Review	Wayne Hewitt	Michael Curley	20/08/2017	20/08/2018
3	Addition of Alternate Fuels information	Wayne Hewitt	Michael Curley	27/03/2018	27/03/2019
4	Full Review	Naomi Munce	Dean Beltrame	04/09/2020	04/02/2021
5	Full Review	Jessica Seifert	Dean Beltrame	14/11/2022	14/11/2023
6	Updated to include Mod 15	Jessica Seifert Sharon Makin	Dean Beltrame	16/06/2023	16/06/2024
7	Updated after emergency drill exercise – s2.1: Updated warden titles, s2.3: Added lab, s2.4 Updated contacts, s3 Added to make notification via PA system and all radio channels, updated first aiders	Jessica Seifert	Waqas Ali	15/12/2024	15/12/2025
8	Updated to include asbestos related incident	Jessica Seifert	Waqas Ali	11/03/2025	11/05/2026

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1. General Information

This plan has been developed in conjunction with GRP-HSEQ-MP-3-03 Emergency Preparedness and Response and GRP-HSEQ-MP-3-03.1 First Aid.

1.1 Emergency Response Plan Objectives

The aim of these procedures is to ensure that personnel are capable of coping with any emergency situation. The primary concern is for the safety of workers, visitors, contractors and the community. Vital records, property and other assets should also be protected.

Area Wardens must ensure that these procedures are kept in a prominent position and that all personnel are made aware of the contents. It is also essential that this document is amended when there are site or personnel changes that impact on the procedures herein.

All personnel must make themselves aware of the location of all emergency alarms, exits and fire appliances within or near their work area and location of the external Safe Assembly Areas.

The effectiveness of these procedures depends on the willingness of all personnel to make themselves aware of the immediate actions they must take in an emergency so that they are capable of acting promptly, calmly and efficiently.

Incident response obligations in NSW in relation to pollution incidents have increased over and above typical emergency response activities. These obligations are explained in detail in the *Pollution Incident Response Management Plan (PIRMP)* which is to be used concurrently with this document. Strict immediate notification requirements apply in all cases of serious environmental incidents. Refer *Incident Workflow* for details.

1.2 Emergency Preparedness Checklist

Checks of emergency preparedness must be undertaken using the General Workplace Safety Inspection Checklist 7-03.5-F03, which checks for emergency lighting, fire extinguishers, flammable materials etc.

1.3 Emergency Management Plan Review

The Emergency Management Plan shall be reviewed annually when a drill is performed and must be reviewed after an incident has occurred and when the Safety Management System is reviewed.

1.4 Withdrawal of Personnel in Case of Danger

Where a hazard is considered not to be under control, and as a result an unacceptable risk may exist, the affected part of the site is considered to be at risk.

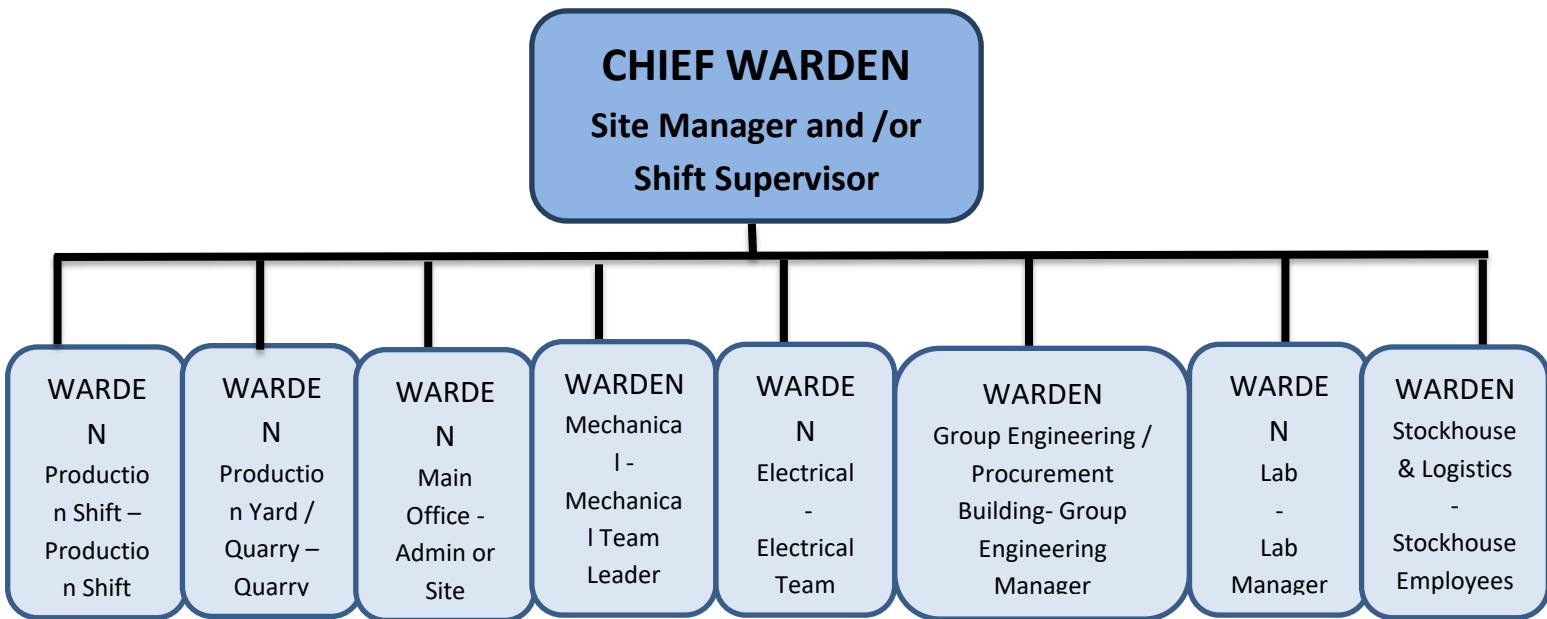
For the quarry this will be for inrush incidents. In such circumstances, the following actions shall be taken:

- All persons exposed to the hazard are withdrawn to a place of safety.
- If personnel are competent and safely able to eliminate or reduce the risk, they must take the action necessary to do so.
- If personnel are not competent or safely able to eliminate or reduce the risk, they must:
 - Take reasonable measures to prevent immediate risk to them or others; and
 - Immediately report the situation to the relevant supervisor.

- Competent personnel shall be appointed to assess the risk which resulted in the withdrawal of persons and to develop a response plan to deal with the situation.
- When it is considered safe to do so, competent person(s) shall take action to reduce the risk to an acceptable level, provided that adequate safeguards are taken.
- The Statutory Quarry Manager shall make a report in the site record on the withdrawal of persons and any remedial action taken.
- A person shall not be permitted into that part of the site, until the risk is at an acceptable level.
- The Statutory Quarry Manager will notify the Resources Regulator of such actions immediately after the action is taken.

2. Control and Coordination

2.1 Control Organisation



2.2 Control Personnel Identification Helmets

Helmet Colour	Role
White – with red “Chief Warden” sticker	Chief Warden
White – with red “ Warden” sticker	Warden
White - with green & white First Aid Sticker	First Aid Personnel

2.3 Manual Distribution

Location	Number of Copies
Reception	1
Control Room	1
ATW Office	1
Group Engineering / Procurement	1
Boral Concrete – Diesel Loco Shop	1
First Aid Room	1
Stockhouse	1
Work Shop Office	1
Quarry	1
Lab	1
Total	10

2.4 Main Control Staff and Wardens

Office Hours 8.00am to 4.00pm Contact Number: (02)4860 2222

After Hours Contact Number: (02)4860 2262

Emergency Appointment	Emergency Control Organisation (ECO)	Stand-in Control Staff (if ECO absent)
Chief Warden	Shift Superintendent Ext: 253/262 Phone: (02) 4860 2262 Radio channel 1	N/A – Always a Shift Superintendent on site
Communications Officer	Process Controller Ext: 200 Phone: (02) 4860 2262 Radio channel 1	N/A – Always a Process Controller on site
Production Shift Warden	Radio Channel 1	
Production Yard / Quarry Warden	Quarry UHF 11 or Radio Channel 1 Yard Radio Channel 2 Branko Vuleta – 0401 896 235	
Main Office Warden	Site Manager – 0401 899 099	Admin – (02) 4860 2212
Mechanical Warden	Radio Channel 2	
Electrical Warden	Radio Channel 1	
Group Engineering / Procurement Building Warden	Jonathan Charlesworth – 0401 895 589	Ian Johnson – 0401 893 356 David Spears – 0401 897 087
Lab Warden	Technical Services Manager – 0478 258 739	Quality Control Manager –0404 365 102
Stockhouse & Logistics Warden	Stockhouse – (02) 4860 2340	

2.5 Warden Nomination and Identification

Nomination:-

- Business Hours Monday to Friday:-

Monday to Friday, due to on-site population and volume of activities, specific Wardens have been nominated based on availability.

The relevant Wardens and Deputies are detailed in 2.1 Control Organisation.

- Weekends & Nightshifts:-

On weekends and nightshifts, the plant is regarded as one (1) Warden, therefore the Shift Superintendent will nominate and allocate personnel resources as required, dependent upon availability.

Identification:-

In addition to helmet stickers, Wardens will be identified by wearing a bright fluro-pink vest with 'WARDEN' printed on the rear.

Important Notes

- i) Wardens shall take charge of their designated responsibilities when on site.
- ii) It is imperative that all personnel are aware of the immediate actions they must take in an emergency. All personnel are expected to support the emergency response at all times unless the support they are asked to provide poses a risk to personal health and wellbeing or safety.
- iii) Shift-work personnel are to report directly to the Chief Warden (Shift Superintendent) in the case of an emergency rather than evacuate, as the Chief Warden may require them as a resource and to assist in bringing the emergency under control.

2.6 Site Plan

A copy of the Site Plan is included in the Emergency Manual - Appendix 1.

2.7 Hazardous and Dangerous Goods

The Hazardous and Dangerous Goods Register is located in the CCR outside the Small Conference Room.

2.8 First Aid Requirements

Refer to Berrima First Aid One Point Lesson for First Aid process on this site.

This section is based on GRP-HSEQ-MP-3-03.1 First Aid and Safe Work NSW First Aid in the Workplace Code of Practice. They should be referred to for more specific information in relation to first aid requirements and equipment.

Code of Practice Requirements:

- One (1) first aider for every 25 workers

- First aid room recommended where there is 100 workers or more in a high risk workplace, but not required to be manned.
- First aid room to be maintained by a trained first aider.

2.9 Contacts

In the event of a confirmed emergency, emergency services and relevant regulators must be contacted immediately. Contact details for this site are as follows:

2.8.1 Emergency Services

Emergency Service	Contact Numbers	Who Contacts
Internal Emergency Number (control room)	02 4860 2200	Anyone discovering an emergency
Fire Brigade (fires & spills)	0-000	Shift Superintendent or their delegate
Bushfire Control (bushfire)	0-000	Shift Superintendent or their delegate
Police (criminal incidents)	0-000	Site Operations Manager or their delegate
Ambulance (medical treatment required)	0-000	Shift Superintendent or their delegate
Poisons Information	0 – 131 126	Any supervisor
Electricity	0 – 131 003	Shift Superintendent or their delegate
Gas	0 – 131 909	Shift Superintendent or their delegate
Water	0 - 8838 7885	Shift Superintendent or their delegate
Lift Emergency	0 – 1800 626 847	Shift Superintendent or their delegate
Safe Work NSW	0 – 131 050	WHS Business Partner after consultation with Site Operations Manager and Plant Manager
Transport for NSW (RMS) (any incident affecting roads)	0 – 132 701	Site Operations Manager or their delegate

2.8.2 Pollution Incidents – immediate notification numbers

Government Authority – compulsory notification	Emergency Notification Number
EPA – Environment Line	131 555
Fire & Rescue NSW	0 - 000
Wingecarribee Council	4868 0888
Public Health Unit (Sydney South West) Camperdown Office	BH: 02 9515 9420 AH: 02 9515 6111 - ask for Public Health Officer on call
Safe Work NSW	131 050. Company ABN asked: 62 008 528 523

All five Regulatory Authorities listed above must be contacted *IMMEDIATELY* by management in the case of a serious pollution incident. See further details in the *Berrima Immediate Notification SOP*.

3. General Emergency Requirements

In the event of an emergency the process to follow shall include:

- Contact Chief Warden / Control Room – either via dialling **200, 262** or radio **channel 1** and advise:
 - Area of the Plant
 - Type of Emergency
 - Number of people injured and types of possible injuries
 - Vehicles/Mobile Plant involved?
 - Fixed Plant or Structures Involved
 - Any live plant which may require isolating for a rescue
 - Maintain on open line/communication with the Chief Warden
- Chief Warden to assess situation/risk:
 - Evacuation of area/plant required? (In case of smoke, fire, gas release etc, people in that area to evacuate immediately to safe assembly area), if Yes have alarm raised
 - Injured people? If yes send First Aider(s). If electrical, heart, drowning or severe injury contact ambulance – send escort to both gates
 - Wardens to be contacted and deployed
 - Other emergency services? If Yes make contact – send escorts to both gates
 - Plant Isolations? If Yes send applicable personnel to area
 - Refer to reference cards for other specific information depending on type of emergency.
 - Emergency situation notification to be made through the PA system and through all radio channels.

While Chief Warden makes assessment:

- Without putting one's self in the line of fire, making the area safe e.g. turn off plant, engines etc;
- If safe to do so, provide assistance to injured persons;
- Restrict access to the area;
- Notify site manager/supervisor and WHS Business Partner;
- Await further instructions.

3.1 Access for External Services

In the event that external emergency Services require access to the site, escorts and direction guides will need to be dispatched by Chief Warden.

The site address / direction for emergency services is:-

Argyle Street, New Berrima NSW 2577

Nearest Cross Street – Taylor Avenue, New Berrima NSW 2577

Lat: -34.510301

Long: 150.335997

Dependent upon the location of the situation, an escort and a direction guide are to be sent to both Argyle and Perth Street entrances – one at each location – to provide either directions or escort to the scene.

The above is due to it being unknown as from which direction the Services will be arriving and they will default to using the first entrance point they encounter.

If more than one external Services vehicle is expected, it may be appropriate to have in place either a number of escorts or a 'relay' of direction guides – whichever is appropriate / available at the time.

4. Fire and Smoke

4.1 Fire and Smoke – Action Plan

If you discover fire or smoke on site, follow the steps below immediately.

- Step 1:** Activate the nearest emergency alarm. Advise the Chief Warden / Control Room immediately of the fire or smoke and its location on the site.
- Step 2:** People in immediate danger are to make their way to Safe Assembly Area.
- Step 3:** The Chief Warden will assess the situation and, if deemed appropriate, evacuate the site and notify emergency services.

FOR EVACUATION

The Control Room will use the Public Address (PA) system and radio to alert all workers and visitors of the evacuation. Area Wardens will instruct all personnel to EVACUATE.

- Step 4:** Wardens must ensure that the evacuation area is free of all personnel.

If safe to do so, Wardens will switch off power to machines and other equipment, and close doors. Do not turn off the lights.

If safe to do so, the fire may be extinguished.

- Step 5:** For evacuation, all personnel – with the exception of Shift-work personnel who report directly to the Chief Warden - must assemble at the designated Assembly Points (see Site Map) and remain with the Warden at all times.
- Step 6:** Each Warden will ensure a roll call is conducted to account for all workers and visitors. Report back to Chief Warden.
- Step 7:** First Aid Attendants will treat any injured personnel at the Assembly Point.
- Step 6:** Await further instructions.

Do not leave the safe assembly area until the Chief Warden gives the all clear.

FIRE AND SMOKE – CHIEF WARDEN RESPONSIBILITIES

When notified of emergency and location:

- If safe to do so, the Chief Warden shall make their way to the site of the emergency, take control of the emergency response and determine the response required.
- Where deemed necessary, evacuate the personnel from the site
- For evacuation, confirm that all personnel are being moved to the Safe Assembly Points.
- Advise the emergency services, as necessary.
- Ensure that all other immediate and follow-up actions have been taken or are in progress.
- Despatch workers in vehicles to the main plant entrances to control incoming traffic and to escort emergency services through the site

- Assess if 'NO ENTRY' signs are required at gates and no trains are allowed to enter the site
- Liaise with emergency personnel
- Hand the situation over to the Chief Fire Officer on arrival, and advise them of:
 - any unaccounted-for personnel
 - the latest situation and actions taken.
- Await instructions from the Chief Fire Officer.

IMPORTANT: - as fire-fighting run-off water and smoke may cause a Pollution Incident, compulsory immediate procedures may apply. See the *Berrima Immediate Notification SOP for details*.

FIRE AND SMOKE – WARDEN RESPONSIBILITIES (WITHIN THE EMERGENCY AREA)

- Advise the Chief Warden of any smoke or fire you have been alerted to, and its location.
- Ensure a 'sweep' of your designated area is completed and that all personnel are moved to the Safe Assembly Point.
- Confirm that all doors, windows and hatches have been closed to contain fire and block off smoke.
- Confirm that the alarm has been activated and that emergency services have been advised of details and location.
- Ensure access to emergency area is restricted.
- Report any personnel not accounted for to the Chief Warden.

IF SAFE TO DO SO AND AS DIRECTED BY CHIEF WARDEN

- Assist in extinguishing fires.
- Shut down or switch off gas, air conditioning, machines and appliances. Leave lights on
- Try to limit contaminated emissions.

FIRE AND SMOKE – FIRST AID ATTENDANT RESPONSIBILITIES

- Collect the nearest First Aid Kit.
- Act under instructions from the Warden/Chief Warden.
- Be prepared to render first aid as requested by the Warden or Chief Warden, or as required.

Other Wardens not immediately involved in the emergency, on evacuation should go to the assembly area and account for people.

5. Evacuation Process

5.1 Evacuation

The first responsibility of all personnel is quickly move anyone in immediate danger to safety and ensure that they are accounted for by the Warden.

When in doubt ... EVACUATE

5.2 Stages of Evacuation

Stage 1 – Local move away from immediate danger

Stage 2 – Plant proceed to Assembly Area

NOTE: If a further site-wide evacuation is required, it will be at the decision made by the Chief Warden in conjunction with relevant management to an appropriate location determined at the time, dependent upon the prevailing circumstances.

5.3 Evacuation Assessment

Assessment to evacuate is done by the Chief Warden.

Factors which must be immediately considered to determine stages and priorities are as follows:

- Location and extent of the emergency.
- The proximity of flammable gases, liquids and other flammable materials or suspect item (in the case of a bomb threat).
- If there has been a toxic emission, evacuation must be kept away from direction of emission and wind.
- Whether it is safe to try to extinguish the fire or block off smoke, or whether the initial attack on the fire looks like it will be successful.
- The nature and type of any injuries sustained by people in the danger area and whether those present are capable of evacuating all people in danger.
- The nearest safe exit route.

EVACUATION ALL-CLEAR

Entry or re-entry is strictly forbidden until authorised by the Officer-in-Charge of the attending emergency authority. If no emergency authority is in attendance, entry or re-entry is forbidden until the Chief Warden gives the all clear and the Site/Operations Manager authorises re-entry.

5.4 Evacuation Attendance Checklist

The following checklist is to be compiled for each evacuation area, and maintained by the Warden.

Evacuation Checklists shall be completed for the following groups;

- Production Shift
- Production Yard / Quarry
- Mechanical
- Electrical
- Main Office
- Stockhouse
- Group Engineering
- Procurement
- Lab

Responsibilities and tasks for the above work-group areas are detailed as follows, all wardens are responsible for marking off their visitors and contractors:-

Workgroup	Person Responsible	Task
Production Shift	Production Shift Team Leader	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Production Yard / Quarry	Yard Team Leader	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Mechanical	Maintenance Team Leader	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Electrical	Electrical Team Leader	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Main Office	Site Manager / Office Administrator	If safe to do so print WOL & KRONOS reports then proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Stockhouse & Logistics	Stockhouse Employees	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Group Engineering Services	Group Engineering Warden	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Procurement	Procurement Manager	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.
Lab	Lab Manager	If able to, collect WOL & KRONOS reports and proceed to Assembly Area & conduct roll-call If unable to collect reports, use evacuation lists at evacuation point.

No person is to leave the Assembly Area without personally notifying and obtaining permission or clearance from the Chief Warden to do so.

6. Other Emergencies

6.1 Extreme Weather Events

Emergency Procedure	<i>Extreme Weather Events</i>		
What happened?	<i>Cyclone, earthquake, Hail, Lightning, Storm, Dust Storm</i>		
Immediate response	1. Ensure safety of those in the vicinity of the area. 2. Call emergency services. 3. Follow emergency evacuation Procedure to Emergency Assembly Area, if safe to do so. 4. If emergency evacuation area unsafe, take shelter in a nearby secure dwelling. This secondary shelter must be chosen on the basis of the emergency at hand. 5. Monitor weather alerts from Bureau of meteorology and maintain contact with local emergency services for updates. http://www.bom.gov.au/		
Further response	1. Protect the area around as best as possible. 2. Try to evacuate site, if possible, if not find a safe place for all personnel. 3. Wait for emergency services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Emergency Services		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Site firefighting equipment such as extinguishers • First aid kit • Emergency supplies, such as drinking water • Site communication devices		
Resuming operations	• Clearance to be obtained from emergency services • Area made safe.		

6.2 Drowning

Emergency Procedure	<i>Drowning</i>		
What happened?	Any incident involving someone falling into a water source on site		
Immediate response	- Where possible, use the provided rescue ring, a rope, a pole or other means of rescuing the person without entering the water yourself. Note: Panicking swimmers can accidentally drown their rescuers. - If the person is conscious, help them to relax and proceed to step 4. If they are unconscious, commence CPR in accordance with step 3 and have someone call for help - Conduct CPR in accordance with your training and/or the posters mounted at the water source. - As soon as practicable, report the details to the Chief Warden and/or Deputy Warden. Advise what resources are required to manage the emergency.		
Further response	- The Chief Warden will send additional first aid or other resources to the incident scene. - The Chief Warden will send a person to the entry gate to meet and direct Emergency Services. - Any person who has potentially inhaled water shall be transported to medical facilities for assessment / monitoring. First aid treatment / monitoring is required until the ambulance arrives.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	Upon identifying this type of emergency, urgently contact.	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	- Portable first aid kit(s) - Rescue ring or equivalent at the water source - CPR posters at the water source - Life Jackets		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations, contact WHS Business Partner or Manager to confirm. - Commence internal incident investigation. - BEAP counselling shall be offered (if required). - The structure of the water source (e.g. damn walls) may require inspection by a suitably qualified person prior to returning it to service. - Risk assessments of drowning will require review prior to returning the water source to service.		

6.3 Bush Fire

Emergency Procedure	Bush Fire		
What happened?	<i>Any incident involving a bush fire, regardless of the size.</i>		
Pre-planning	1. Ensuring trees are cut back at least 20m from the raw material storage building 2. Ensure grass is maintained 3. Ensure doors are in a working order and can shut completely (not obstructed and in working order) 4. Ensuring holes in the buildings are repaired such that the building is completely closed when the doors are shut 5. Plan to relocate combustible yard storage indoors 6. Preplanning engagement with the fire department		
Immediate response	1. Assess the situation. Listen to local radio station or www.rfs.nsw.gov.au for warnings about bushfires in the area. 2. Advise Chief Warden of imminent bushfires and follow all instructions 3. In the event of an evacuation: check www.livetraffic.nsw.gov.au for road closures prior to leaving site. If unsafe to leave, the Maintenance and Administration building is to be used. 4. Do not attempt to stay and defend against extreme and catastrophic rated bushfires		
Further response	1. If safe to do so, shut down any affected equipment. 2. The Chief Warden will determine what, if any, level of evacuation is required. 3. The Communication Officer will advise all persons to stay clear of the incident site. 4. The Chief Warden will send an Area Warden to the entry gate to meet and direct the Fire Brigade, if applicable.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Rural Fire Service.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks)		

Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. • Critically damaged equipment may require replacement.

6.4 Fixed or Mobile Plant Fire

Emergency Procedure	Fixed or Mobile Plant Fire		
What happened?	Any fire which requires the use of a fire extinguisher or other emergency response. (Examples include, fires caused by hot work or fuel operated equipment.)		
Immediate response	1. Assess the scene: Is it safe to attempt to extinguish the fire. If safe, proceed to step 2, if not proceed to step 3. 2. If safe, attempt to extinguish the fire using equipment provided. Whether successful or not, proceed to step 3. 3. Move to a safe place and report the details to the Chief Warden and/or Deputy Warden. Advise what resources are required to manage the emergency, including fire brigade, if necessary.		
Further response	4. If safe to do so, shut down any affected equipment. 5. The Chief Warden will determine what, if any, level of evacuation is required. 6. The Communication Officer will advise all persons to stay clear of the incident site. 7. The Chief Warden will send a Warden to the entry gate to meet and direct the Fire Brigade, if applicable.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Fire Brigade.		
Who to call	Upon identifying this type of emergency, urgently contact.	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Site firefighting equipment such as extinguishers • Site communication devices		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation, including alcohol and other drug testing of persons involved. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Critically damaged equipment may require removal from site and replacement.		

6.5 Explosion

Emergency Procedure	Explosion		
What happened?	<i>Any incident involving rapid release of pressure, Gas, heat or material in a sudden and violent manner.</i>		
Immediate response	1. Evacuate to pre-determined area. 2. Assess cause and effect of incident and call 000 if required. 3. If possible, isolate and shut down supply of electricity/gas/material inflow and outflow. 4. Secure area, which may include fighting of small fires, using spill kits to stop spread, or locking down area to prevent spread of fumes/fire. 5. Rescue injured/trapped person if safe to do so.		
Further response	6. Warden or delegate to meet emergency services at Front gate 7. Follow emergency services instructions.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. • Critically damaged equipment may require replacement.		

6.6 Fixed Plant Structural Failure

Emergency Procedure	Fixed Plant Structural Failure		
What happened?	Major plant incident, including failure of plant or equipment or collapse of structures		
Immediate response	1. Call emergency services 2. Move to a safe place and report the details to the Chief Warden and/or Deputy Warden. Advise what resources are required to manage the emergency. 3. Evacuate to safe assembly location 4. Provide first aid to injured persons within level of competence		
Further response	1. Account for all personnel. 2. Cordon off access to site until emergency services arrive. 3. The Chief Warden will send a person to the entry gate to meet and direct emergency, if applicable. 4. Notify emergency services if any person is missing 5. Provide any assistance required by emergency services		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the emergency services		
Who to call	Upon identifying this type of emergency, urgently contact.	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Personnel list • First aid kit • Site communication devices		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact WHS Business Partner or Manager to confirm • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Critically damaged equipment may require removal from site and replacement. • Clearance to be given by emergency services prior to entry into the area		

6.7 LV Electric Shock

Emergency Procedure	LV Electric Shock		
What happened?	<i>Any incident involving an electric shock, regardless of the size.</i>		
Immediate response	1. Report the details to the Chief Warden. Advise what resources are required to manage the emergency, including emergency services 2. Assess the scene: Where is the source of electricity? Is it Low Voltage? If no, see HV Electric Shock Procedure 3. Shut off the electricity. Do not enter the area until the electricity has been turned off. 4. Move people in immediate danger to safety, and ensure their continued safety and care. If unable to isolate - 5. Put on insulated gloves 6. Use crook to separate person from power source 7. Once safe provide assistance (e.g. first aid, firefighting, additional electrical isolation).		
Further response	7. The Chief Warden will send additional resources to the incident scene. 8. The Chief Warden will organise for additional isolation / disconnection. 9. The Communication Officer will advise all other persons to stay clear of the scene via two way radio. 10. The Chief Warden will send a person to the entry gate to meet and direct Emergency Services. 11. The Chief Warden will determine whether Evacuation is required. 12. Any person who suffered an electric shock shall be transported to medical facilities via ambulance for ECG and assessment/medical treatment.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • LV Rescue Kit • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. • Critically damaged equipment may require replacement.		

6.8 HV Electric Shock

Emergency Procedure	<i>HV Electric Shock</i>		
What happened?	<i>Any incident involving an electric shock, regardless of the size.</i>		
Immediate response	- Report the details to the Chief Warden. - Assess the scene: Do not enter the incident scene until you have confirmed that the power has been isolated / disconnected. - Call '000' - Contact Energy supplier if required to isolate power to the site - Once safe provide assistance (e.g. first aid, firefighting, additional electrical isolation).		
Further response	- The Chief Warden will send additional resources to the incident scene. - The Chief Warden will organise for additional isolation / disconnection. - The Communication Officer will advise all other persons to stay clear of the scene via Two way Radio - The Chief Warden will send a person to the entry gate to meet and direct Emergency Services. - The Chief Warden will determine whether Evacuation is required. - Any person who suffered an electric shock shall be transported to medical facilities for an ECG assessment / monitoring.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until Emergency Services arrive.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	- Portable first aid kit(s) - Site communication devices - Portable firefighting equipment - Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. - Commence internal incident investigation. - Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. - Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. - Critically damaged equipment may require replacement.		

6.9 Vehicle Contact with Overhead Electrical Cables

Emergency Procedure	Vehicle Contact with Overhead Electrical Cables		
What happened?	Any incident involving an electric shock, regardless of the size.		
Immediate response	1. If Mobile Plant or vehicles contact overhead Powerlines, <u>do not leave cabin</u>, or change the position of controls until the all clear has been given by an electrician or the Chief Warden. 2. Whilst remaining within the cabin of the mobile plant the operator will need to avoid touch with metallic surfaces. If possible to isolate mobile plant from within cabin, do so 3. Contact Chief Warden to report incident 4. Chief Warden to warn persons to secure the area to a minimum of 10 metres around the accident scene. 5. Where the operator has no option but to leave the mobile plant they are to avoid touching both the ground and the mobile plant at the same time. This will mean that the operator will be need to perform a controlled jump clear of the mobile plant from the step closest to the ground and move away by keeping feet pressed together and hopping from the accident scene to the minimum clearance of 10 metres.		
Further response	1. The Chief Warden will send additional resources to the incident scene. 2. The Chief Warden will organise for additional isolation / disconnection. 3. The Communication Officer will advise all other persons to stay clear of the scene via Two way radio 4. The Chief Warden will send a person to the entry gate to meet and direct Emergency Services. 5. The Chief Warden will determine whether Evacuation is required. 6. Any person who suffered an electric shock shall be transported to medical facilities via ambulance for ECG and assessment/medical treatment.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	Upon identifying this type of emergency, urgently contact.	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. • Critically damaged equipment may require replacement.		

6.10 On Site Road Incident

Emergency Procedure	On Site Road Incident		
What happened?	<i>Any on-site vehicle collision incidents, including single vehicle, vehicle to vehicle and vehicle to mobile plant.</i>		
Immediate response	1. Assess the scene: What appears to have happened? Is there risk of escalation (e.g. fire, explosion, further roll over or people being struck by other vehicles)? 2. If safe to do so, approach and provide assistance (e.g. provide first aid, assist people in climbing out of vehicle(s), assist in firefighting, and determine if emergency services are required). 3. As soon as practicable, report the details to the Chief Warden. Advise what resources are required to manage the emergency, including emergency services, if necessary.		
Further response	1. The Chief Warden will send additional first aid or other resources to the incident scene. 2. The Plant Control Room will advise all drivers on site to stay clear of the accident site. 3. The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • On board and portable firefighting equipment • Hi-visibility clothing		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager ASAP to determine if this is required. The following actions must be carried out in accordance with the requirements of the site Vehicle and Pedestrian Management Plan and controls identified through risk assessment. • Commence internal incident investigation. • BEAP counselling shall be offered (if required). • The Shift Supervisor may approve temporary alternate traffic flows. • Vehicles may require retrieval / recovery. • Critically damaged vehicles may require lifting and/or removal from site.		

6.11 Off Site Road Incident

Emergency Procedure	<i>Off Site Road Incident</i>		
What happened?	<i>Any off-site road incident that involves vehicles going to or heading away from site.</i>		
Immediate response	1. Assess the scene: What appears to have happened? Is there risk of escalation (e.g. fire, explosion, and people being struck by other vehicles)? 2. Call Emergency Services (if required) 3. Move vehicles to a safe location if possible 4. Put out traffic management equipment if available and safe to do so 5. If safe to do so, approach and provide assistance (e.g. provide first aid, help people walk to a safer place). 6. Notify Plant Control Room		
Further response	1. If safe to do so, the site Chief Warden may provide resources to assist in managing the scene including first aiders, the Communication Officer and any qualified traffic controllers. 2. The site Chief Warden shall assign Warden(s) to prevent unauthorised access (e.g. drivers attempting to find a way around the accident if unsafe to do so). 3. All non-essential deliveries to and from site should be postponed if their route is affected.		
Who is in charge?	The site Chief Warden is in charge of site access and the allocation of site resources. The Police or, in their absence, other relevant emergency services are in charge of the incident scene, once they arrive at the scene.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Traffic Management triangles • Portable first aid kit(s) • Fire Extinguisher • High visibility clothing		
Resuming operations	• BEAP counselling shall be offered (if required). • Resume normal deliveries to and from site once all clear has been given by emergency services.		

6.12 Pedestrian Struck by Vehicle

Emergency Procedure	<i>Pedestrian Struck by Vehicle</i>		
What happened?	<i>Any on-site incident involving a pedestrian being struck by any vehicle.</i>		
Immediate response	1. Assess the scene: What appears to have happened? Is there risk of escalation (e.g. rescuers being struck by other vehicles)? 2. When safe to do so, approach and provide assistance (e.g. provide first aid and determine if emergency services are required). Avoid moving the injured person. 3. As soon as practicable, report the details to the Chief Warden and/or Deputy Warden by contacting. Advise what resources are required to manage the emergency, including ambulance, if necessary.		
Further response	1. The Chief Warden will send additional first aid or other resources to the incident scene. 2. The Communication Officer will advise all drivers on site to stay clear of the incident site via Tow way radio. 3. The Chief Warden will send a Warden or delegate to the entry gate to meet and direct the ambulance.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations, contact WHS Business Partner or Manager to confirm. The following actions must be carried out in accordance with the requirements of the SHPSMP, including those defined in the site Vehicle and Pedestrian Management Plan and controls identified through risk assessment. • Commence internal incident investigation, including alcohol and other drug testing of persons involved. • BEAP counselling shall be offered (if required) • The Project Plant Supervisor may approve temporary alternate traffic flows. • Vehicles may require retrieval / recovery.		

6.13 On Site Rail Incident

Emergency Procedure	On Site Rail Incident		
What happened?	<i>Any on-site vehicle collision incidents, including vehicle to train and train derailment.</i>		
Immediate response	1. Assess the scene: What appears to have happened? Is there risk of escalation (e.g. fire, explosion, further roll over or people being struck by other vehicles)? 2. If safe to do so, approach and provide assistance (e.g. provide first aid, assist people in climbing out of vehicle(s), assist in firefighting, and determine if emergency services are required). 3. As soon as practicable, report the details to the Chief Warden and/or Deputy Warden. Advise what resources are required to manage the emergency, including emergency services, if necessary.		
Further response	4. The Chief Warden will send additional first aid or other resources to the incident scene. 5. The Communication Officer will advise all drivers on site to stay clear of the accident site. 6. The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • On board and portable firefighting equipment • Hi-visibility clothing		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager ASAP to determine if this is required. Refer to the Rail Incident Reporting Protocol. The following actions must be carried out in accordance with the requirements of the site Vehicle and Pedestrian Management Plan and controls identified through risk assessment. • Commence internal incident investigation. • BEAP counselling shall be offered (if required). • The Project Plant Supervisor may approve temporary alternate traffic flows. • Vehicles may require retrieval / recovery. • Critically damaged vehicles may require lifting and/or removal from site.		

6.14 Medical Emergency

Emergency Procedure	Medical Emergency		
What happened?	<i>Any incident involving a life threatening health event.</i>		
Immediate response	1. Call 000 2. Keep area clear of unnecessary people. 3. Check Medical Conditions Report to determine if there may be an underlying medical issue 4. Perform First Aid 5. Warden or delegate to meet emergency services at front gate 6. Keep person comfortable until emergency service arrive. 7. In the event that a person needs to be transported to hospital via Air Ambulance, the nominated helicopter landing area is the 'hockey field' at the south-western intersection of Taylor Avenue and Berrima Road. The GPS Coordinates of this area are:- (-34° 30' 19.90", +150° 19' 56.28") the gate near the wash-down bay is to be unlocked & opened to allow access for emergency vehicles. The key for this gate is located in the CCR key cabinet.		
Further response	1. Contact Work Fit 1300 753 486 for injury management/return to work for the injured person. 2. Return Medical conditions reports to locked file. 3. Debrief those who witnessed incident 4. Ensure counselling is offered via the BEAP service.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Possible defibrillators • Site communication devices		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager ASAP to determine if this is required. • Site operations may have halted whilst person received first aid and medical treatment. • Operations may resume once they no longer have effect on providing medical treatment. • Obtain medical clearance to return to work if required.		

6.15 Mental Health Issues

Emergency Procedure	Mental Health Issues		
What happened?	<i>Any incident involving a person's mental health, including but not limited to mental breakdown, psychosis, self-harm, attempted suicide.</i>		
Immediate response	1. If there is an immediate threat to you, or someone else.; contact the Police directly (it is appropriate to use the emergency number "000"). The Mental Health Service can attend in these situations, but if there is a high risk of violence they are required to work with the Police. 2. If there is an immediate risk to the physical health of a person: If emergency medical attention is required contact the ambulance service directly. This may include situations where the person has caused or is threatening to cause severe physical harm to themselves (e.g. overdose). It is appropriate to use the emergency number "000".		
Further response	3. Where there is potential for disruption of operations, or where operations may inflame situation, arrangement should be made with all other stakeholders.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices		
Resuming operations	• Clearance to be obtained from emergency services • Area made safe.		

6.16 Falling in Harness Rescue

Emergency Procedure	<i>Falling in Harness Rescue</i>		
What happened?	<i>Any incident involving the arrest of someone's fall using a harness.</i> <i>(Note: A task-specific rescue plan shall be developed and reviewed before issuing the High Risk Permit for any work at heights which involves the use of a fall arrest set up. This SEP is meant to complement these specific plans.)</i>		
Immediate response	1. Initiate the task-specific rescue plan. 2. Immediately report the details to the Chief Warden and/or Deputy Warden and request additional first aid support.		
Further response	1. Timely rescue and expert care is critical in avoiding suspension trauma. Therefore the Chief Warden will have emergency rescue services and an ambulance called. If on-site rescue is immediately successful, external rescue resources can be cancelled. 2. Information to supply to emergency response includes: - o Gender - Male or female - o Age - approximate - o Weight – approximate - o Approximate distance of fall - o Known problems from the fall e.g. broken leg, conscious, unconscious, equipment damaged. - o Amount of time suspended so far 3. Unless rescue is immediate, attempts must be made to avoid blood pooling in the victims legs and preventing oxygen flow. If the suspended person is unconscious, proceed to step 3 otherwise encourage them to: 4. Move out of a vertical position, 5. Use their leg muscles, and 6. Remain calm and avoid strenuous activity as this creates a higher oxygen demand and may result in them fainting. 7. If the person is unconscious, efforts should be made to raise their legs into a sitting position by looping rope, or equivalent, under their knees. 8. Once rescued, standard first aid shall be provided. The person shall be treated / monitored by a first aider until the ambulance arrives.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by emergency services.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• Predetermined rescue equipment • Portable first aid kit(s) • Site communication devices		

Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • The harness and other fall arrest equipment shall be permanently taken out of service (but not initially destroyed, until approved by external investigators). • The anchor point used shall be taken out of service until certified as fit for reuse.

6.17 Confined Space Rescue

Emergency Procedure	Confined space rescue		
What happened?	<i>Person in confined space has collapsed or injured themselves and requires rescue</i>		
Immediate response	- Stand by person to assess the scene and notify the control room. Measure the atmosphere while waiting for further instructions. - Chief Warden to advise what resources are required to manage the emergency, including fire brigade, if necessary i.e. what type of confined space is present. - DO NOT enter confined space until atmosphere has been tested. If unsafe levels on enter with a fitted with Self-contained breathing apparatus. Enter when there is a communication device to standby person, torch and tethered and a qualified confined space rescue standby person is present. - Retrieve injured person using lifeline or harness or as described in the Confined Space Permit. - If you cannot move injured person, perform necessary first aid in the space until emergency services arrive.		
Further response	- Conduct first aid on person once removed - The Chief Warden will send a Site person to the entry gate to meet and direct the Ambulance, if applicable.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Ambulance officers		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	- Lifeline or harness retrieval equipment as noted in the Confined Space Permit - Self-contained breathing apparatus (if required) - Means to ventilate area before entering if required - O₂ monitor - Site communication devices - Torch		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact WHS Business Partner or Manager to confirm. - Commence internal incident investigation. - Area to be made safe before entering.		

6.18 Exposure to Chemicals

Emergency Procedure	Exposure to chemicals		
What happened?	<i>Person exposed to chemicals; on their skin, inhalation, ingestion</i>		
Immediate response	1. Remove person from chemical source if safe to do so (follow SDS if unsure) 2. Contact ambulance. 3. Ensure PPE used to handle substance is worn by first aider 4. For skin exposure – follow the instructions on the SDS for first aid 5. For inhalation – remove them to an unaffected area, monitor their breathing 6. For ingestion – call poisons information line 131 126 for first aid requirements, follow their instruction.		
Further response	7. Only provide first aid to your level of competence 8. Apply appropriate first aid, depending on type of exposure 9. Wait for ambulance to transport worker to hospital 10. Ensure SDS is sent with worker to hospital		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Ambulance		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services Ambulance (if necessary)	Contact no: Two way radio 200 000 000
Emergency equipment required	• First aid kit • Safety shower/cold running water/eye wash station • Site communication devices		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact WHS Business Partner or Manager to confirm • Commence internal incident investigation. • Area to be made safe		

6.19 Asbestos Incident

Emergency Procedure	<i>Asbestos / Suspected Contaminated Material Incident</i>
What happened?	<i>Where Asbestos Containing Material or other suspected contaminated material is thought to have been encountered unexpectedly and/or disturbed</i>
Immediate response	- Any person who believes that friable asbestos or suspected contaminated material is present in their work area should immediately report it to their supervisor and restrict access to the area. - All work associated with the ACM / suspected contaminated material should cease. Any open Authority to Work permits should be cancelled or suspended until the site has been declared safe; - The site manager / WHS Partner should arrange for the material to be sampled by an external competent person; Sample/s must be sent for analysis. - Expert advice from an occupational hygienist or a subject matter expert should be obtained regarding the appropriate course of action; - If sampling confirms the presence of asbestos refer to the "Code of Practice for the Safe Removal of Asbestos". Broadly the Code of Practice requires; - The continued restriction of access to the area - The identification of a competent/licensed asbestos removalist - An asbestos removal control plan - An emergency plan - Clearance to reoccupy an asbestos work area - For other suspected contaminated material all contamination investigation/management and remediation must only be undertaken by a suitably competent person / contractor
Further response	- The event should be recorded as a near miss in Incident Management System with the description of the event as "Suspect Asbestos or Asbestos Containing Material / Suspected Contaminated Material identified" in the description of the event. The Incident Management System entry should list the exact location of the material identified; - A toolbox meeting should be held informing all affected parties of the action taken to assess the nature of the material, and to advise of the required course of action to be taken in relation to any possible exposures that may have occurred; - The site Workplace Health and Safety Committee should be informed of the occurrence; - On confirmation of the presence of ACM /Suspected Contaminated Material by the testing undertaken, a minimum short form investigation should occur; - In the event that the testing confirms a material not containing asbestos or contaminated material, the SEQUENCE event should be updated to reflect the findings and closed out (the rating on the event may be downgraded to 'low'). - A safety notice or similar should be issued to persons working at the site. The issuing of a safety alert should be considered in consultation with the regional WHS Manager.
Who is in charge?	The Site Manager is in charge of this type of incident

Emergency Procedure	<i>Asbestos / Suspected Contaminated Material Incident</i>	
Who to call <i>Upon identifying this type of emergency, urgently contact.</i>	Name Immediate Supervisor Site Manager WHS Business Partner National Health and Hygiene Manager	Contact no: Various 0401 899 099 0401 895 449 0401 893 364
Emergency equipment required	• Appropriate signage erected to identify materials • Site communication devices	
Resuming operations	• All employees and contractors who may have been affected by an accidental release of ACM /Contaminated material should be offered the services of the Boral Employee Assistance Program. • Hazardous Materials Register should be updated to reflect the material tested, regardless of whether the results of the testing were positive or negative. • Ensure that any asbestos containing material is identified with clear and concise signage	

6.20 Environment- Dust Release/Major Spills of Liquids or Solids

Emergency Procedure	Environment – Dust Release/Major Spills of Liquids or Solids		
What happened?	<i>A major spill of distillate, oil or chemical on site during delivery, or on site.</i>		
Immediate response	1. Ensure no immediate threat to people or self before acting 2. Shut down source of leak is possible prevent further release of spill 3. If spill presents a danger to employees, activate alarm 4. Block the flow to stormwater drains or water sources 5. Use sand or absorbent materials to contain as per SDS 6. Advise Chief Warden. Advise what resources are required to manage the emergency.		
Further response	7. If spill has entered stormwater drain or water sources, seek to block downstream. 8. Clean up contaminated sand, soil or absorbent material, place in drums or appropriately stockpile to dispose of. 9. The Chief Warden will send a person to the entry gate to meet and direct the emergency services, if applicable.		
Who is in charge?	The site Chief Warden is in charge of this type of incident		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services	Contact no: Two way radio 200 000
Emergency equipment required	• Spill kits or absorbent materials near all dispensing and storage locations. • Appropriate signage erected to identify materials • Site communication devices		
Resuming operations	This type of incident may require regulator, public health unit or Wingecarribee Shire Council and insurer notification. Regulatory approval may be needed before resuming operations. Contact Environmental representative to confirm • Clearance given by Emergency Services. • Area made safe If the incident has the potential to affect roads the following must also be contacted: • Transport for NSW		

6.21 Ground Instability

Emergency Procedure	Ground Instability		
What happened?	<i>Any incident involving vehicle rollover, or vehicle submersion</i>		
Immediate response	1. If Mobile Plant or vehicle rolls over on site, contact Chief Warden 2. If unable to exit the vehicle safely, operator should be instructed to remain in cabin with seatbelt on until help arrives. 3. All operations to cease to allow free passage of emergency vehicles to incident location. 4. Conduct first aid as required until arrival of emergency services		
Further response	5. The Chief Warden will send additional resources to the incident scene. 6. Contact Supply Chain & Logistics/Logistics contact to inform of incident. 7. The Communication Officer will advise all other persons to stay clear of the scene via two way radio. 8. The Chief Warden will send a person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. • Critically damaged equipment may require replacement.		

6.22 Stockpile Slumping

Emergency Procedure	Stockpile Slumping		
What happened?	<i>Any incident involving stockpile slumping, engulfing persons or plant containing persons.</i>		
Immediate response	1. Notify Chief Warden. Advise what resources are required to manage the emergency, including fire brigade, ambulance etc 2. Check for hazards including further stockpile undercutting prior to rescue. 3. Retrieve engulfed person from stockpile using hand tools.		
Further response	4. Conduct first aid on person once removed 5. The Chief Warden will send a site person to the entry gate to meet and direct the Ambulance, if applicable.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Portable firefighting equipment • Isolation equipment (e.g. locks) • Hand tools for digging		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Re-risk assess stockpile and put into a stable position		

6.23 Snake or Spider Bite

Emergency Procedure	<i>Snake or Spider Bite</i>		
What happened?	<i>Any incident involving a bite from a snake or spider.</i> <i>(Note: While it is helpful to identify the snake or spider, it is not absolutely required for the use of modern anti-venom. Therefore do not risk your safety by trying to catch or kill the animal.)</i>		
Immediate response	1. Ensure the snake or spider is no longer within striking distance before attempting to assist the injured person. 2. Do <u>not</u> wash the wound site, tourniquet the limb or attempt to suck out the venom. Take care to avoid touching / transferring the venom onto yourself. 3. Apply a compression bandage on the bite site, in accordance with first aid training. Note: Pain from Red back spider bites often prevents the use of pressure, in which case apply ice. 4. Immediately report the details to the Chief Warden and request an ambulance.		
Further response	5. Immobilise the affected area with a compression bandage and keep the patient calm. 6. Lay the person down and keep them calm. Do not give food or drink – although the occasional small sip of cool water is ok while waiting for the ambulance. 7. Provide additional standard first aid, as required. The patient shall be treated / monitored by a first aider until the ambulance arrives.		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Chief Warden Shift Supervisor Emergency Services	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s) • Compression bandages or snake bite kit (if available) • Site communication devices		
Resuming operations	• As required, contact professional snake removal / pest treatment. • Commence internal incident investigation.		

6.24 Personal Threat

Emergency Procedure	Personal Threat		
What happened?	<i>Personal threat may include, threat of assault, assault, armed holdup, or robbery.</i>		
Immediate response	1. Remain calm 2. Alert someone to the threat if possible 3. Remove yourself to a safe area if possible 4. Contact police/ambulance.		
Further response	1. Observe offenders characteristics 2. Record as many details as possible once the threat has been removed. 3. The Manager to coordinate debriefing/Counselling for staff (BEAP)		
Who is in charge?	The Manager is in charge of this type of incident until relieved by Emergency Services		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Site communication devices		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm • Commence internal incident investigation. • Area made safe • External authorities to release site back to Chief Warden.		

6.25 Civil Disorder

Emergency Procedure	Public Disorder		
What happened?	<i>Any incident involving civil disorder with the potential to disrupt site operations or access, regardless of the size. This could include people picketing the site.</i>		
Immediate response	1. If Civil Disorder threatens to disrupt site operations or access to the site, report the issue immediately to the Chief Warden 2. The Chief Warden shall contact line management and HR Department 3. The Chief Warden should determine whether it is safe for operations to continue and persons can gain access to the site. 4. If it is unsafe for operations to continue the site shall be closed and secured 5. All persons should remain clear of situations where personal civil disorder is present where possible. 6. If required, management should contact emergency services and implement a safe evacuation procedure. 7. No person from site it to upload any images etc to social media or contact/talk to media.		
Further response	8. Senior Line Management may need to contact the Boral Media department depending on the size of the incident and potential outcomes. 9. HR should be kept informed of changes in the situation 10. The Boral crisis team may require notification		
Who is in charge?	The site Chief Warden is in charge of this type of incident.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s)		
Resuming operations	This type of incident may require regulator notification and regulatory approval may be needed before to resuming operations, contact WHS Business Partner or Manager to confirm. • Commence internal incident investigation. • Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. • Critically damaged equipment may require replacement.		

6.26 Bomb or Terrorism Threat

Emergency Procedure	<i>Bomb or Terrorism Threat</i>
What happened?	<i>Bomb threat or suspect mail received at the site</i>
Immediate response	- Switch off radios, mobile phones or any other radio transmitting device. Use Landline telephones only. THREAT BY PHONE - Record all information on paper. - Let caller finish the message; do not interrupt. - If asked for a response, keep your answer to one or two words. - Try to attract the attention of people near you. - Be sympathetic (do not abuse the caller). - Claim that you cannot hear the caller / /have poor reception. - Ask for the caller to repeat parts of the conversation. Do not hang up, even if the caller does. <i>Refer to appendix for bomb-threat checklist</i> THREAT BY MAIL - Take careful note of the time and method of receipt. - Retain the item but limit handling to a minimum and handle by edges only. THREAT IN PERSON - Evaluate the person making the threat: - has the person made a complaint against your organisation? - did they appear to be under the influence of alcohol or drugs? - was the threat made in a facetious or joking manner? - Make note of the appearance of the person(s) making the threat. - Report threat to Chief Warden ASAP - Chief Warden to notify Site/Operations Manager (if unavailable leave message and continue with step 6) - Call emergency services - Follow evacuation procedure - Wardens put "No Entry" Signs on all entrances
Further response	- Follow directions of emergency services - Remain with the Chief Warden for interview by Police. - Do not discuss details of the threat with the media or any other person. - Await further instructions from Police and Boral Crisis Team.

Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by the Emergency Services.		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	Site communication devices		
Resuming operations	This type of incident may require regulator and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm - Commence internal incident investigation - BEAP counselling shall be offered (if necessary). - Site to be given clearance by emergency services before returning. - Area to be made safe.		

6.27 Hot Materials and Gas Spills/Escape

Emergency Procedure	<i>Hot Material and Gas Spills/Escape</i>		
What happened?	<i>Spill of large hot material involving plant or people</i>		
Immediate response	1. Move people in immediate danger to safety. 2. Shut down or switch off equipment as required. LEAVE LIGHTS ON. 3. If safe to do so, assist and care for injured personnel and call for first aid assistance. 4. Report details to the Chief Warden. 5. Chief Warden to contact Emergency Services if necessary 6. Restrict access to the area. 7. If safe to do so, make use of spill kits to restrict movement of spill. 8. Await instructions from the Chief Warden. 9. Stand by to provide assistance, and await further instructions.		
Further response	4. The Chief Warden will send additional first aid or other resources to the incident scene. 5. If necessary, Chief Warden to initiate an evacuation 6. The Communication Officer will advise all drivers on site to stay clear of the accident site. 7. The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Spill Response kits • On board and portable firefighting equipment • Hi-visibility clothing		
Resuming operations	This type of incident may require regulator, public health unit or Wingecarribee Shire Council and insurer notification. Regulatory approval may be needed before resuming operations. Contact Environmental representative to confirm • Clearance given by Emergency Services. • Area made safe If the incident has the potential to affect roads the following must also be contacted: • Transport for NSW		

6.28 Structural Damage or Collapse of Building or Plant

Emergency Procedure	Structural Damage or Collapse of Building or Plant		
What happened?	<i>Structural Damage or Collapse of Building or Plant and other outlying structures. Items relating to rail should also read in conjunction with rail response.</i>		
Immediate response	1. Move people in immediate danger to safety. 2. Shut down or switch off equipment as required. LEAVE LIGHTS ON. 3. If safe to do so, assist and care for injured personnel and call for first aid assistance. 4. If safe to do so, vital records and equipment should also be protected. 5. Report details to the Chief Warden. 6. Chief Warden to contact Emergency Services if necessary 7. Restrict access to the area. 8. If safe to do so, make use of spill kits to restrict movement of spill. 9. Await instructions from the Chief Warden. 10. Stand by to provide assistance, and await further instructions.		
Further response	11. The Chief Warden will send additional first aid or other resources to the incident scene. 12. If necessary, Chief Warden to initiate an evacuation 13. The Communication Officer will advise all drivers on site to stay clear of the accident site. 14. The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Portable first aid kit(s) • Site communication devices • Spill Response kits • On board and portable firefighting equipment • Heavy Rescue equipment/cranes etc		
Resuming operations	This type of incident may require regulator, and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm. Other actions required include: • Clearance given by Emergency Services. • Structural Inspection and clearance by qualified person • Barricading of area if unsafe until area is fit to work in again.		

6.29 Armed Hold up or Intrusion

Emergency Procedure	Armed Hold up or Intrusion		
What happened?	<i>People entering the site who are not authorised to be there.</i>		
Immediate response	- Do not protect money, information or equipment. - If safe to do so, report suspicious activity to Warden or Chief Warden immediately upon noticing it. - Do not confront the intruder(s). Try and remain calm. Do not make any sudden movements or take any action to excite or agitate the intruder(s). - Be courteous, answer questions and obey all directions. - After the incident, do not touch any items in the incident scene. - Move people in immediate danger to safety. - If safe to do so, restrict movements on site. - If safe to do so, assist and care for injured personnel and call for first aid assistance. - Report details to the Chief Warden. - Chief Warden to contact Emergency Services if necessary - Restrict access to the area. - Await instructions from the Chief Warden. - Stand by to provide assistance, and await further instructions.		
Further response	- The Chief Warden will send additional first aid or other resources to the incident scene. - If safe, Chief Warden to initiate an evacuation - The Communication Officer will advise all drivers on site to stay clear of the accident site. - The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	Site communication devices		
Resuming operations	This type of incident may require regulator, and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm. Other actions required include: - Commence internal incident investigation. - Area made safe - External authorities to release site back to Chief Warden.		

6.30 Trapped in a Lift/Alimak/EWP

Emergency Procedure	<i>Trapped in a Lift/Alimak/EWP</i>		
What happened?	<i>Lift/Alimak/EWP no longer working/stuck in position</i>		
Immediate response	LIFT 1. Push the alarm button (do not press any other button). 2. Use lift emergency phone to contact the Control Room (Ext: 262) and report the breakdown. 3. Await for assistance to arrive. 4. Remain calm and keep lines of communication open ALIMAK/EWP 5. Contact Chief Warden to advise of the situation. 6. Use manual override controls to lower if safe to do. If not safe wait for assistance to arrive. 7. Remain calm and keep lines of communication open		
Further response	8. The Chief Warden will send additional first aid or other resources to the incident scene. 9. Areas around EWP to be barricaded off if required. 10. The Chief Warden will send an appropriate person to the entry gate to meet and direct Emergency Services when called. 11. First aid to be provided to workers who were trapped. 12. Provide details to BEAP and report information to Work Fit for follow up relating to possible mental health issues.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Site communication devices		
Resuming operations	This type of incident may require regulator, and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm. Other actions required include: • Commence internal incident investigation. • Area made safe • External authorities to release site back to Chief Warden.		

6.31 Fire or Explosion: Coal Mill, Kiln or Alternative Fuels Store (including Kiln Floor)

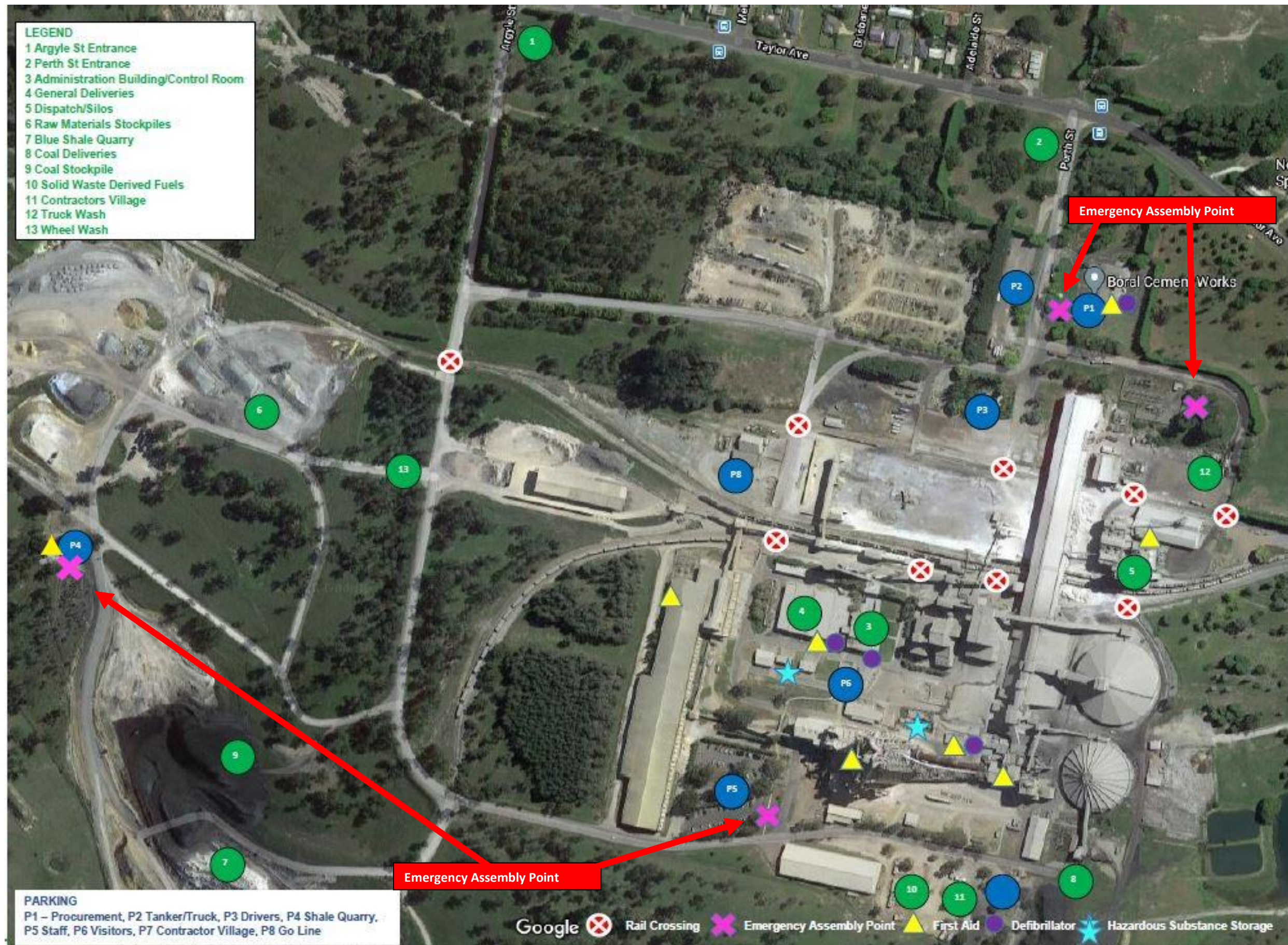
Emergency Procedure	<i>Fire or Explosion: Coal Mill, Kiln or Alternative Fuels Store (including Kiln Floor)</i>
What happened?	<i>Fire or explosion</i>
Immediate response	1. Do not attempt to shut down or isolate equipment if it is not safe to do so. 2. Activate the nearest alarm and Contact Chief Warden 3. Do not enter the area if it is not safe to do so. 4. Move people out of the immediate area of danger 5. If safe to do so, assist and care for injured personnel 6. Restrict access to the area.
Further response	7. The Chief Warden will send a fire pump and valve operator from the CCR shift, additional first aid or other resources to the incident scene. SHUT DOWN AND ISOLATION <u>Coal Mill or Kiln Floor</u> 8. Contact Control Room to have Mill turned off 9. Stop FD Fan and isolate at switch adjacent to motor 10. Stop Coal Mill circulation fan and isolate at switch adjacent to motor 11. Stop Coal Mill booster fan and isolate at switch adjacent to motor 12. Isolate fuel pumps located in oil pump station adjacent to oil tanks 13. Isolate LP Gas supply at valve on gas tank adjacent to Coal Reclaimer western wall. 14. If safe to do so, Fire Pump Operator is to check the fire pump is running correctly or perform a manual start if required. 15. If safe to do so, valve operator to check that critical valves are open, or open them if they are not. Ensure valves remain open until the fire is extinguished. <u>Kiln Back End</u> 16. Stop kiln and isolate Preheater fan (original) at contactor marked Preheater fan in high tension switch room and isolate Preheater fan (upgrade) at contactor marked Preheater fan in No 4 substation 17. Isolate precipitator fan at contactor marked precipitation fan in high tension switch room. 18. Isolate bag filter at contactor marked Bag Filter in No 4 substation. <u>Alternative Fuels Area including Tyre Chip Storage Area</u> 19. Stop conveyors and feed into Kiln. Isolate conveyors.
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).

Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	• Site communication devices • Isolation equipment • Fire Fighting Equipment (where practical)		
Resuming operations	This type of incident may require regulator, and insurer notification. Regulatory approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm. Other actions required include: • Commence internal incident investigation. • Area made safe • External authorities to release site back to Chief Warden. • Inspections of Plant and Equipment by qualified personnel and any rectification performed before it goes back into service		

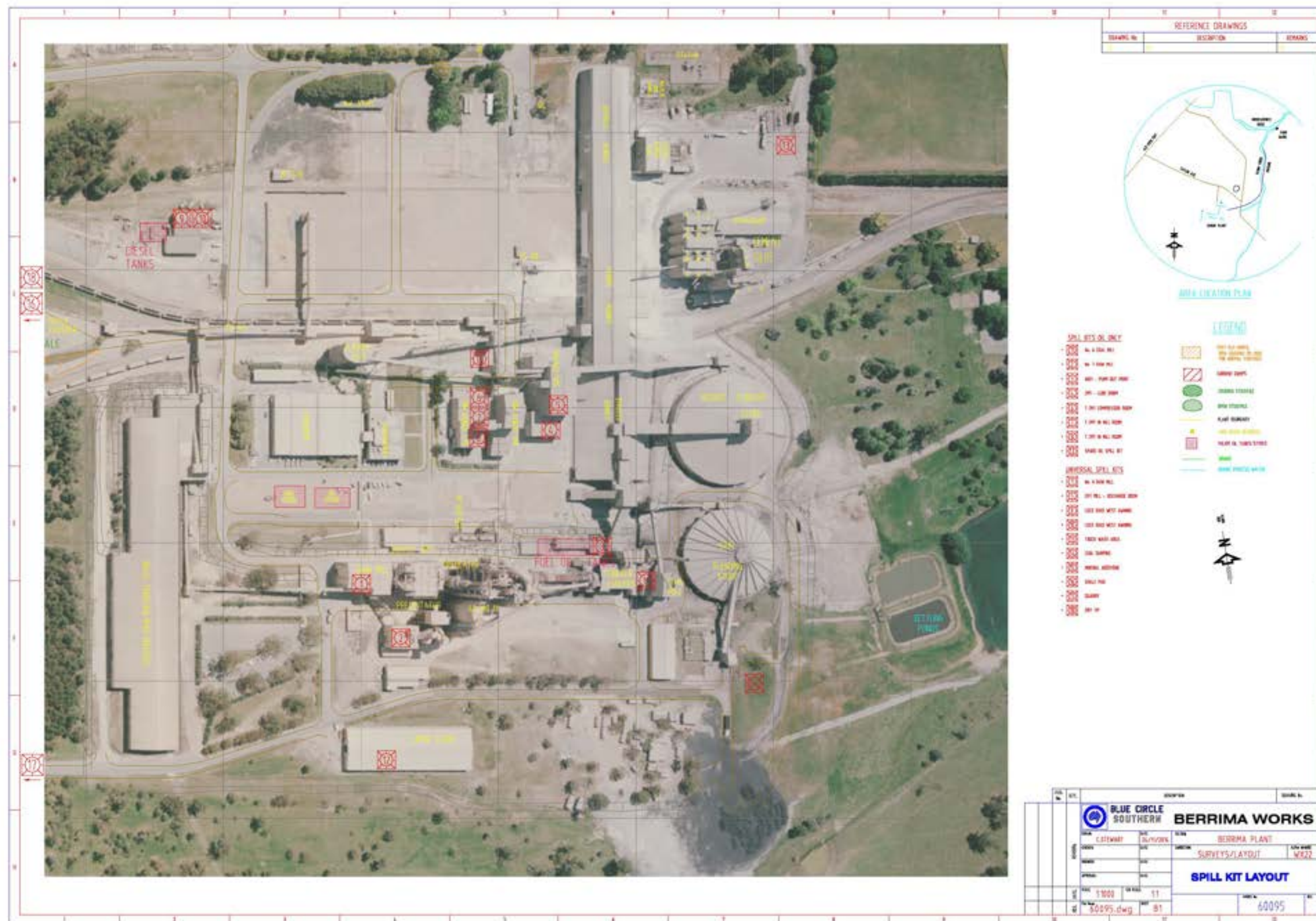
6.32 Heavy Equipment Tyre Overheating or Fire Duty Card

Emergency Procedure	Heavy Equipment Tyre Overheating or Fire		
What happened?	<i>HME Tyre Overheating or fire</i>		
Immediate response	- Operator to initiate an emergency shutdown once the machine has been safely parked. Equipment must not be driven any distance (5 – 10 metres maximum) - The operator must vacate the equipment on the opposite side of the effected tyre. Do not approach equipment from sides - Move to a safe place and report the details to the Chief Warden and/or Deputy Warden. Advise what resources are required to manage the emergency, including fire brigade, if necessary.		
Further response	- The Chief Warden will send additional first aid or other resources to the incident scene. - For any overheating tyre, locate the equipment in a secluded area and isolate for 24 hours to allow the tyre to cool - Evacuate all persons within a 250 metre radius - Under no circumstances is anyone to approach the equipment within the 24 hours period.		
Who is in charge?	The site Chief Warden is in charge of this type of incident until relieved by Emergency Services (if required).		
Who to call	<i>Upon identifying this type of emergency, urgently contact.</i>	Name Manager via Shift Supervisor Emergency Services (if required)	Contact no: Two way radio 200 000
Emergency equipment required	- Portable First Aid Kit - Site communication devices - Portable Fire Fighting Equipment - Isolation equipment (e.g. locks)		
Resuming operations	This type of incident may require regulator, and insurer notification. Regulator approval may be needed before resuming operations. Contact the WHS Business Partner or Manager to confirm. Other actions required include: - Commence internal incident investigation. - Equipment damaged by the incident will require inspection by a suitably qualified person after repair and before returning it to service. - Risk assessments of equipment involved in the incident will require review prior to returning the equipment to service. - Critically damaged equipment may require replacement. - External authorities to release site back to Chief Warden.		

7. Appendix 1 – Site Emergency Map



8. Appendix 2 - Spill Kit Locations



9. Appendix 3 - Bomb Threat Checklist

BOMB THREAT CHECKLIST

EXACT WORDING OF THREAT: _____

QUESTIONS TO ASK:

1. **When** is the bomb going to explode? _____
2. **Where** is it right now? _____
3. **What** does it look like? _____
4. **What** kind of bomb is it? _____
5. **What** will cause it to explode? _____
6. **Why** are you doing this? _____
7. **Did** you place the bomb? _____
8. **What** is your address? _____

9. **What** is your name? _____

CALLER'S VOICE:

Calm _____	Nasal _____	Laughter _____	Normal _____
Angry _____	Stutter _____	Disguised _____	Accent _____
Deep _____	Slurred _____	Distinct _____	Loud _____
Slow _____	Familiar _____	Deep Breathing _____	Lisp _____
Rapid _____	Excited _____	Clearing Throat _____	Raspy _____
Soft _____	Ragged _____	Crying _____	

THREAT LANGUAGE:

Foul _____ Well Spoken (Educated) _____ Irrational _____
 Incoherent _____ Taped Message _____ Read by Threat Maker _____
 If voice is familiar, whom did it sound like? _____

BACKGROUND NOISES:

Street Noises _____	Animal Noises _____
Crockery _____	Clear _____
Voices _____	Static _____
Familiar _____	PA System _____
Music _____	STD _____
Motor _____	House Noises _____
Public Phones _____	Factory Noises _____
Office Machinery _____	Machinery _____
Other _____	

CALLER: Sex: (M / F) _____ Accent: _____ Age: _____

ADMINISTRATIVE DATA:

Number at which call received _____	Length of call _____
Time of call _____	Date _____
Signature _____	Signature _____
Printed Name _____	
Actioned / Filed _____	Position _____
Printed Name _____	

10. Appendix 4 – First Aiders

Michael McLeavy	Anthony Hope
William Willis	Skie Jones
Clive Collier	Syed Kazim
Callum Lowe	Nima Khaksardehnavi
Matthew Carlon	Oscar Lee
Renier Cronje	Sam Moore
Sam Thomas	Bailey Varga
Darren Tickner	Lesley Whitby
Mark Todd	Robert Zervos
Jake Fry	Malcolm Smith
Greg Hong	David Spears
Mohammed Ali	Lindsay McIntosh
Nouman Arif	Jonathan Charlesworth
Paul Buckley	Joseph Elhazouri
Noah Hallal	Ian Johnson
Gary Pritchard	Paul Dalrymple

David Zveglic



APPENDIX 8 POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN



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Pollution Incident Response Management Plan



Berrima Cement Works

Taylor Avenue, New Berrima NSW 2577

Version 14: 4th February 2026

Document Control Sheet

Current Rev.	Date Implemented	PIRMP Test Schedule	Date for Next Review
14	4/2/2026	12 months	November 2026

Rev.	Date	Prepared by	Approved By	Revision Details
01	December 2012	Karin Schianetz	Stuart Hutchings	Document Created
02	24 January 2013	Karin Schianetz	Stuart Hutchings	Included reference to Map 60059
2.1	September 2013	Alex Whorowski	Stuart Hutchings	Changes reflecting new company structure
03	September 2014	Alex Whorowski	Stuart Hutchings	Annual Review
04	September 2015	Alex Whorowski	Stuart Hutchings	Annual Review
05	March 2017	Micheal Curley	Stuart Hutchings	Major Review
06	March 2018	Ibrahim Mulhern	Stuart Hutchings	Annual review
07	March 2019	Beinda Prideaux	Stuart Hutchings	Updated Staff contact details
08	April 2020	Belinda Prideaux	Dean Beltrame	Over haul document to meet new EPA PIRMP guidelines
09	April 2021	Greg Johnson	Dean Beltrame	Annual review, update staff, include gas risk
10	April 2022	Ben Williams	Dean Beltrame	Update to new EPA PIRMP guidelines Update formatting Update staff contacts Update maps
11	April 2023	Sharon Makin	Dean Beltrame	Annual Review Update to formatting – new branding Update staff contacts
12	June 2023	Sharon Makin	Dean Beltrame	Addition of Incident 7 for fire and resulting smoke updated to include DPE comments
13	November 2024	Sharon Makin	Waqas Ali	Annual review. Update following drill, update contact details
14	February 2026	Sharon Makin	Waqas Ali	Annual review.



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PART A:

Legislative Requirements



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- Provide direction to the staff in responding to pollution incidents at the BCW operations;
- Ensure timely communication about a pollution incident is provided to staff at the premises, the Environment Protection Authority (EPA), other relevant authorities specified in the Protection of the Environment Legislation Amendment Act (POELA Act) (including Wingecarribee City Council, NSW Ministry of Health, Safework NSW, and Fire and Rescue NSW) and persons outside the operations who may be affected by the impacts of a pollution incident that is not trivial;
- Minimise and control the risk of a pollution incident at Dunmore Quarry by identifying key risks and planned actions to minimise and manage those risks;
- Detail the training requirements for this plan, identifying persons responsible for implementing it, and ensuring that the plan is regularly tested for accuracy, currency and suitability.
- This PIRMP must be followed by employees, contractors and visitors of BCW, to assist in the early response to, and reporting of, a pollution incident. A hard copy of the current PIRMP is kept at BCW and is made publically available on the Boral environmental reporting website:

<https://www.boral.com.au/what-we-do/environmental-reporting>

Hard copies of the PIRMP are located at the following locations onsite:

- Reception
- Control Room
- ATW Office
- Group Engineering/Procurement
- Boral Concrete – Diesel Loco Shop
- First Aid Room

This document accompanies the Berrima Emergency Response Plan CEM-BER-OHS-1 which details immediate response actions such as evacuation and first aid procedures in a range of emergency scenarios.

2. Legislative Requirements

The specific requirements for a Pollution Incident Response Management Plan (PIRMP) are set out in Part 5.7A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2009 (POEO(G) Regulation).

Part 3A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2009 (POEO(G) Regulation) describes specific components and requirements of a PIRMP. Table 1 provides the reference to these requirements and the location these are addressed in the document.



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Table 1 Summary of Legislative Requirements

Section/Clause	Requirement	Location in PIRMP
Part 5.7A POEO Act 1997		
147	(1) For the purposes of this Part— (a) harm to the environment is material if— (i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment. (2) For the purposes of this Part, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.	Section 3
153A	The holder of an environment protection licence must prepare a pollution incident response management plan that complies with this Part in relation to the activity to which the licence relates.	EPL 1698 and this document
153C	A pollution incident response management plan must be in the form required by the regulations and must include the following— (a) the procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to— (i) the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and (ii) the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and (iii) any persons or authorities required to be notified by Part 5.7, (b) a detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution, (c) the procedures to be followed for co-ordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made, (d) any other matter required by the regulations.	Section 7 Section 8 Section 8 Section 13 to 18 Section 13 to 20 Section 20



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Section/Clause	Requirement	Location in PIRMP
153D	A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is kept at the premises to which the relevant environment protection licence relates, or where the relevant activity takes place, and is made available in accordance with the regulations.	Section 1
153E	A person who is required to prepare a pollution incident response management plan under this Part must ensure that it is tested in accordance with the regulations	Section 10
153F	If a pollution incident occurs in the course of an activity so that material harm to the environment (within the meaning of section 147) is caused or threatened, the person carrying on the activity must immediately implement any pollution incident response management plan in relation to the activity required by this Part	Section 7 and 8
Part 3A POEO(G) Regulation 2009 Pollution Incident Response Management Plans note: See also 153C (a)-(c) of the POEO Act 1997		
98C(1) (a)	A description of the hazards to human health or the environment associated with the activity to which the licence relates,	Section 5, Section 12
98C(1) (b)	The likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood,	Section 12
98C(1) (c)	Details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity	Section 12
98C(1) (d)	An inventory of potential pollutants on the premises or used in carrying out the relevant activity	Section 5
98C(1) (f)	A description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident,	Section 5, Section 12-18
98C(1) (g)	the names, positions and 24-hour contact details of those key individuals who: are responsible for activating the plan, and are authorised to notify relevant authorities under section 148 of the Act, and are responsible for managing the response to a pollution incident,	Section 6,7,20
98C(1) (h)	the contact details of each relevant authority referred to in section 148 of the Act,	Section 8,20
98C(1) (i)	Details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises in the vicinity of the premises to which the licence relates or where the scheduled activity is carried on	Section 8.2, Section 12-20
98C(1) (j)	The arrangements for minimising the risk of harm to any persons who are on the premises or who are present where the scheduled activity is being carried on	Section 12-20



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Section/Clause	Requirement	Location in PIRMP
98C(1) (k)	A detailed map (or set of maps) showing the location of the premises to which the licence relates, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of any stormwater drains on the premises	Section 12-20
98C(1) (l)	A detailed description of how any identified risk of harm to human health will be reduced, including (as a minimum) by means of early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce that risk,	Section 12-20
98C(1) (m)	The nature and objectives of any staff training program in relation to the plan	Section 9
98C(1) (n)	The dates on which the plan has been tested and the name of the person who carried out the test,	Section 10
98C(1) (o)	The dates on which the plan is updated,	Document Control
98C(1) (p)	The manner in which the plan is to be tested and maintained.	Section 10,11

3. Definition of a ‘Pollution Incident’

The definition of a pollution incident is:

“pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.”

A pollution incident is required to be notified if there is a risk of ‘material harm to the environment’, which is defined in section 147 of the POEO Act as:

a) harm to the environment is material if:

- i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is **not trivial**, or
- ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$50,000 (or such other amount as is prescribed by the regulations), and

b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

BCW is now required to report **non-trivial** pollution incidents immediately to the EPA, NSW Health, Fire and Rescue NSW, Safework NSW and the local council.

4. Site Location and Layout

As shown in Figure 1, the site is situated within the Wingecarribee LGA and is zoned Heavy Industrial (IN3). The land to the immediate east and south is zoned General Industrial (IN1).



Figure 1 Site Location

The overall site layout of BCW is shown in Figure 2. Please note that Part B of this PIRMP contains detailed maps which describe the important details for each pollution incident scenario.





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5. Potential Polluting Substances

Table 2 below is an inventory of potential pollutants kept on the premises.

Figure 3 shows the map reference for the location of the storage. This inventory provides a description of the main hazards to human health or the environment, an assessment of the likelihood of the hazards occurring and also includes the current controls and safety equipment and/or pre-emptive actions in place to minimise or prevent risk of harm to human health or the environment.

Table 3 details the typical volumes and location of hazardous material storage. Please note that these volumes are indicative in nature. The Hazardous and Dangerous Goods Register is located in the CCR outside the small conference room and will contain the most up to date information. Safety Data Sheets are stored via ChemAlert which is accessed via the Boral intranet under Applications.

Table 2 List of Polluting Substances: Initial Assessment

LIST OF POLLUTING SUBSTANCE STORAGES/USES AT SITE: INITIAL ASSESSMENT (all Chemicals listed in this sheet are to be subjected to a risk assessment)							
Site Name: Berrima Cement					Responsible Person: Operations Manger		Date: 28/04/2023
Name / description	Covered under Hazardous Chemicals/SDS?	Amount stored	Location of storage	Map reference. See Figure 3	Likelihood of impact on neighbours	Current controls	See Risk Ass & PIRMP Response Action (see Below)
CHEMICALS/FUELS/LUBRICANTS (raw materials and products which can cause pollution)							
Diesel	Class 3	Variable: typical volumes listed in Table 3	Diesel Storage Area	Ref A	LOW Only if substances enter waterways and is transported off-site	Bunding PMP Training Spill Kits SOP Inductions Fire Fighting Equipment Security	Incident #1
LPG	Flammable Gas Class 2	Variable: typical volumes listed in Table 3	Depot 2	Ref B	LOW Only if flammable gas is spread off-site during high winds Early warning required¹	Bunding PMP Training Spill Kits SOP Inductions Fire Fighting Equipment Security	Incident #5
Grinding aid	Class 3	10 000ltrs	Cement Mil 6 Cement Mill 7	Ref C	LOW Only if substances enter waterways and is transported off-site	Bunding PMP Training Spill Kits SOP Inductions Fire Fighting Equipment Security	Incident #1
Oils/Solvents	Class 3	Packaged goods up to 600ltrs	Oil Store /Loco Shed	Ref D	LOW Only if substances enter waterways and is transported off-site	Bunding PMP Training Flammable Cabinet Spill Kits Inductions Fire Fighting Equipment	Incident #1



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LIST OF POLLUTING SUBSTANCE STORAGES/USES AT SITE: INITIAL ASSESSMENT (all Chemicals listed in this sheet are to be subjected to a risk assessment)							
Site Name: Berrima Cement					Responsible Person: Operations Manger		Date: 28/04/2023
Name / description	Covered under Hazardous Chemicals/SDS?	Amount stored	Location of storage	Map reference. See Figure 3	Likelihood of impact on neighbours	Current controls	See Risk Ass & PIRMP Response Action (see Below)
						Security	
Lubricants, Gases	Class 2	Variable: typical volumes listed in Table 3	Maintenance Workshop	Ref B	LOW Only if substances enter waterways and is transported off-site	Fire Extinguishers Concrete Floor Enclosed Shed Containment Cages and Cabinets	Incident #1 and Incident #5
Oils/Fuel	Class 3	Variable: typical volumes listed in Table 3	Plant and Equipment (Workshop area)	Ref B	LOW Only if substances enter waterways and is transported off-site	PMP Training Spill Kits SOP Inductions Fire Fighting Equipment Security	Incident #1
Acids		2000ltrs	Powerhouse Ponds Hotwells		LOW Only if substances enter waterways and is transported off-site		Incident #1
Laboratory Chemicals		Variable <500Ltrs	Laboratory	Ref E	LOW Only if substances enter waterways and is transported off-site	Fire Extinguishers Concrete Floor Enclosed Shed Containment Cages and Cabinets Security	Incident #1 Risk Assessment Response Actions
Radioactive Material Cs-137 Cf-252	Class 7		No. 6 Cement Mill SC109 SC110 SC111 CO62	Ref H	LOW Only if substances escapes during maintenance or transport	Regular wipe tests and inspections by licenced contractor Regular maintenance with licenced contractor Transport via licenced contractor Storage off site via licenced radiation store Signage and restriction of access within close vicinity Training Security	Incident #6 Risk Assessment Response Actions
MATERIALS (eg stockpiles, silos, bulk solids etc)							
Product Stockpiles	N/A	Up to 50,000T	Dedicated on site	Ref F	LOW Only if excessive sediment enters waterways and is transported off-site	Water sprays Water Cart Maintain manageable levels Security	Incident #2 Risk Assessment Response Actions



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LIST OF POLLUTING SUBSTANCE STORAGES/USES AT SITE: INITIAL ASSESSMENT (all Chemicals listed in this sheet are to be subjected to a risk assessment)							
Site Name: Berrima Cement					Responsible Person: Operations Manger		Date: 28/04/2023
Name / description	Covered under Hazardous Chemicals/SDS?	Amount stored	Location of storage	Map reference. See Figure 3	Likelihood of impact on neighbours	Current controls	See Risk Ass & PIRMP Response Action (see Below)
					during significant rain events		
AQUEOUS (eg dams, wastewater tanks, other water storage area)							
Water Storage Dam (Sediment)	N/A	15ML Lake Breed 19ML Lake Quality	Lake Breed Lake Quality	Ref G	LOW Only if excessive sediment enters waterways and is transported off-site during significant rain events	Continue to use for dust suppression Ensure pumps are maintained through scheduled maintenance Routine site cleaning Utilization of settling ponds and weirs Discharge monitoring	Incident #3 Risk Assessment Response Actions
Storm Water Drains	N/A	Variable	Site	Ref G	LOW Only if excessive sediment enters waterways and is transported off-site during significant rain events	Straw Bales Rubber and Earthen Berms Audits and Inspections	Incident #3 Risk Assessment Response Actions
SUBSTANCES IN PROCESSES (substances which could be emitted from operational process i.e. treatment plants, vehicles etc)							
Mobile Plant (onsite) BORAL	Class 3	Up to 15 on site	Dedicated on site	Operational traffic areas	N/A	Spill Kits Pre start checks PMP Training	Incident #1 Risk Assessment Response Actions
Car Parking up to 100 vehicles	Class 3	Variable	Car Park	Onsite car park	N/A	Spill Kits Training	Incident #1 Risk Assessment Response Actions
Traffic Areas (dust, chem. leaks & loss)	Class 3	N/A	Dedicated on site	Operational traffic areas	N/A	Training Routine site cleaning Water cart Spill Kits	Incident #1 and Incident #2 Risk Assessment Response Actions
Excessive fume / smoke from the combustion of flammable products onsite causing	N/A	Flammable materials –tyre and wood chip	Site process	site	N/A	Regular scheduled maintenance Emergency response training	Incident # 7 Risk Assessment



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LIST OF POLLUTING SUBSTANCE STORAGES/USES AT SITE: INITIAL ASSESSMENT
(all Chemicals listed in this sheet are to be subjected to a risk assessment)

Site Name: Berrima Cement					Responsible Person: Operations Manger		Date: 28/04/2023
Name / description	Covered under Hazardous Chemicals/SDS?	Amount stored	Location of storage	Map reference. See Figure 3	Likelihood of impact on neighbours	Current controls	See Risk Ass & PIRMP Response Action (see Below)
material harm to the environment or unexpected impact on the community						Detailed Fire fighting equipment and plan in place Annual audits	Response Actions

Figure 3 Map References of Polluting Substance Storage



Table 3 Polluting Substances Locations

Product/ Chemical Name	Maximum Quantity Stored	Location where the Product is Stored/Used	Storage Type	Is the Chemical a Dangerous Good? (Y/N)	Is the Chemical a Hazardous Substance? (Y/N)
Kiln Fuel – Diesel	55000L	Tank No. SS60	Tank	N	Y
Kiln Fuel – Diesel	55000L	Tank No. SS61	Tank	N	Y
Diesel	60000L	AKF1 - SS63	Tank	N	Y
Diesel	22000L	AKF1 - SS64	Tank	N	Y
Diesel Fuel	25000L	Tank No. SS70	Tank	N	Y
Diesel Fuel	25000L	Tank No. SS71	Tank	N	Y
LPG	2500L	Depot 2	Tank	Y	Y
LPG	4500KG	Depot 2	Tank	Y	Y
Acetylene	1000KG	Gas Store	Bottles	Y	Y
Oxygen	2500KG	Gas Store	Bottles	Y	Y
Hydrogen	250KG	Gas Store	Gas bottles	Y	Y
LPG	330KG	Gas Store	Gas bottles	Y	Y
Hydrochloric Acid (30%)	30L	Laboratory	Bottles	Y	Y
Ethanol	100L	Laboratory	Bottles	Y	Y
Methanol	100L	Laboratory	Bottles	Y	Y
Kerosene	10L	Laboratory	Bottles	Y	Y
Acetone	20L	Laboratory	Bottles	Y	Y
Grinding Aid	5000L	Cement Mill 6	Tank	N	Y
Grinding Aid	5000L	Cement Mill 7	Tank	N	Y
Hydrochloric Acid (30%)	1000L	Powerhouse pond	Tank	Y	Y



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Product/ Chemical Name	Maximum Quantity Stored	Location where the Product is Stored/Used	Storage Type	Is the Chemical a Dangerous Good? (Y/N)	Is the Chemical a Hazardous Substance? (Y/N)
Hydrochloric Acid (30%)	1000L	Hotwells	Tank	Y	Y
CALTEX DELO 400 SAE 15W/40	410L	Loco Shed	Drum	N	N
CALTEX RANDO HD 68	410L	Loco Shed	Drum	N	N
CALTEX 85W-140 Gear Oil	205L	Loco Shed	Drum	N	N
CALTEX 80W-90 Gear Oil	205L	Loco Shed	Drum	N	Y
Caltex Safe Degrease	205L	Loco Shed	Drum	Y	Y
Waste Oil	1000L	Loco Shed	ISO Container	Y	Y
CALTEX DELO 50/50 Coolant	205L	Loco Shed	Drum	N	Y
Hydrogen	156KG	Preheater L6	Bottles	Y	Y
CALTEX DELO GREASE EP 2	40KG	OIL STORE	Drum	N	N
CALTEX EP GREASE C 3	40KG	OIL STORE	Drum	N	N
CALTEX MINE GREASE PREMIUM 2	180KG	OIL STORE	Drum	N	N
CALTEX RANDO HD 32	205L	OIL STORE	Drum	N	N
CALTEX TEXTRAN TDH PREMIUM	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 320	205L	OIL STORE	Drum	N	N
CALTEX TRANSFORMER OIL BSI INHBITED	205L	OIL STORE	Drum	N	N
CALTEX DELO 400 SAE 15W/40	205L	OIL STORE	Drum	N	N
CALTEX TORQUE FLUID 434	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 460	205L	OIL STORE	Drum	N	N



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Product/ Chemical Name	Maximum Quantity Stored	Location where the Product is Stored/Used	Storage Type	Is the Chemical a Dangerous Good? (Y/N)	Is the Chemical a Hazardous Substance? (Y/N)
CALTEX RANDO HD 32	205L	OIL STORE	Drum	N	N
CALTEX RANDO HD 68	205L	OIL STORE	Drum	N	N
CALTEX RANDO HD 150	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 320	205L	OIL STORE	Drum	N	N
CALTEX MEROPA SYNTHETIC EP 320	205L	OIL STORE	Drum	N	N
CALTEX TEXAMATIC 1888	205	OIL STORE	Drum	N	N
CALTEX SAFE-D-GREASE QB	205L	OIL STORE	Drum	N	Y
CALTEX KEROSENE	200L	OIL STORE	Drum	Y	Y
CALTEX HAVOLINE FULLY SYNTHETIC 5W/40	205L	OIL STORE	Drum	N	N
Transformer Oils – Refer to Transformer Register	765 to 7400L	Various	Transformers	Various	Various
SWDF	900 tonnes	SWDF shed	shed	N	N
Tyre Chips	75 tonnes	Tyre storage area	Open bunkers	N	N



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6. Staff Roles and Responsibilities

Table 4 Staff Roles and Responsibilities

Position	Responsibility
<i>Employees and Contractors</i>	Following the procedures outlined in the PIRMP and related documents Immediately alerting Supervisor or Team Leader of any environmental incidents or near-misses.
<i>Team Leaders / Front Line Supervisors</i>	Following the procedures outlined in the PIRMP and related documents Immediately alerting Site/Production Manager or, in case of their unavailability, Environmental Representative or Environment Manager of any potentially material environmental incidents or near-misses. Conducting incident investigations.
<i>Site / Operations Manager and/or Site Environmental Business Partner and/or Environment Manager</i>	Authorization of the PIRMP Administration, maintenance and implementation of the PIRMP Assessing whether the incident has caused or threatens "material environmental harm" and, if so, immediately notifying all Appropriate Regulatory Authorities. Ensuring that investigations are undertaken to a level corresponding to the level of risk and impact.

7. Internal Pollution Incident Reporting

Any pollution incident satisfying the **material harm** threshold must be immediately reported to relevant statutory authorities by either the Site/Operations Manager, or Environment Manager.

In cases where material harm level cannot be immediately assessed or insufficient information comes to hand on the severity of the incident, the general advice is to err on the side of caution and notify the Relevant Authorities with a qualification that the situation could not yet be fully assessed.

Until further notice the following procedure needs to be followed:

1. When a pollution incident occurs, a person who has become aware of it must **immediately** bring it to the attention of his/her immediate Supervisor or Manager
2. If necessary, first ring 000 for Emergency Services
3. At least one of the following Boral Cement personnel in Table 5 must be contacted **immediately**:



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Table 5 Boral Cement Personnel

Name	Function	Phone Number	Mobile Number
Waqas Ali	Operations Manager		
Gabriel Paicu	Technical Manger		
Branko Vuleta	Production Superintendent / Quarry Manager		
Greg Johnson	Senior Environment Business Partner – NSW/ACT		
Sharon Makin	Environment Business Partner – NSW/ACT		

Whilst personal contact details are available in the controlled version of the Pollution Incident Response Management Plan located onsite they do not appear in the public document

4. Greg Johnson, or in case of his unavailability one of the Senior Management personnel listed above, is to **immediately** notify all appropriate Regulatory Authorities specified in Section 8.1.

5. In borderline situations, where the exceedance of the trigger level of “material harm” of a pollution incident may not be clear, a quick assessment including consultation with Boral environmental personnel should be undertaken to help the decision whether to notify or not.

6. Boral’s Senior Management must be informed promptly of the fact of immediate notification to the Authorities. This includes environmental personnel listed above, as well as the Head of Environment, the National Community Relations & Engagement Manager and Senior Legal Counsel.

8. External Pollution Incident Reporting

As the legislation requires that notification must be done immediately upon becoming aware of the pollution incident, it is unlikely that a detailed picture will be available for reporting. Notwithstanding, it seems that some of the Government Authorities prepared a detailed questionnaire which is being filled at the time of this initial notification. Under the stress of incident handling it could be easy to provide a hasty, inaccurate estimate of the situation when answering these questions.

Therefore, the notification should be restricted to the facts known and nothing should be assumed or guessed. The details will be provided to the asking Authority later when more information comes to hand.

The initial notification should include as much of the following information (if known) as possible:



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- Location and time of the pollution incident
- Type of the incident (spill, fire, unlicensed harmful discharge, etc)
- Assessed level of incident gravity: “it seems to be...” (e.g. “a relatively minor spill”; “major fire”, “explosion limited to one building”, etc.)
- Whether the Emergency Services have been required to attend.

Unless known for a fact, the answers to other questions should be politely deferred until a better assessment of the situation can be made.

The Boral person who is responsible for notifying the Authorities (Site/Operations Manager or Senior Environment Business Partner) about the incident must prepare a Notification Log (a suitable form is attached in Part B) with the details of time of notifications and the persons who took to the call. The Authorities are expected to log the calls but early indications are that this is not always the case.

Notification of all Appropriate Government Authorities (at least 5 entities listed in Table 6) may take considerable time. Delays may be experienced connecting to the right person or no contact may be possible after hours. All such instances should be recorded in the Notification Log.

8.1. Pollution Incident Authority Contact List

The 5 entities which must be contacted in the case of emergency is detailed below in Table 6.

Table 6 Pollution Incident Authority Contact List

Government Authority – compulsory notifications	Emergency notification phone number
EPA – Environment Line	131 555
Fire & Rescue NSW (FRNSW)	1300 729 579
Wingecarribee Council	(02) 4868 0888
Public Health Unit (Southern Sydney) – Liverpool GW PHU	HealthLink (24 hr)- 1300 066 055 Head Office- Liverpool- (02) 9794 0855
WorkCover Authority of NSW	131050 Company ABN asked: 62 008 528 523
Government Authority – ring if relevant	Emergency notification phone number
Police & Ambulance	000
Roads and Maritime Services (road spills)	132 701
WNSW Incident Line	1800 061 069



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Bush Fire Control Officer	02 4677 7000
Poisons Information Centre	131 126
Endeavour Energy (power line emergencies)	131 003
Australian Radiation Protection and Nuclear Safety Agency	1800 022 333

8.2. Community Notification Contact List

Communication with the local community may also be undertaken depending on the circumstances of the pollution incident. Berrima Cement would consider the following options for providing Early Warning and ongoing information to the community on pollution incidents:

- Direct phone contact with any local residents directly impacted by the pollution incident
- Letter Box drops of incident information and site contacts to local residents impacted by the pollution incident
- The inclusion of incident details within the relevant Community Newsletter and Community Meetings

The National Community Relations & Engagement Manager may be used to assist in the process of communicating with the community. Relevant community members in the immediate vicinity of the site are detailed below in Table 7.



Name	Address	Postal Address	Preferred Contact	Email
New Berrima Residents				
Others				

Note: when alerting , please remember that he has a list of 4000 names of SHCAG members. He is eager to help notifying on our behalf, just make sure he notifies only people in the areas under threat from the pollution incident. This will have to be discussed in detail.

Register last updated 16/10/2012

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9. Incident Response Training

Berrima Cement will implement the Pollution Incident Response Management Plan by training or providing information to relevant employees and contractors in relevant areas of the Plan. The nature and objectives of staff training is to relate to site personnel the importance of early notification of any incidents and spills to site supervisors and key personnel.

Training or information will be provided on the following:

- The contents and intent of this PIRMP,
- The roles and responsibilities of site staff in relation to this PIRMP
- Spill response procedures;
- General environmental awareness; and / or
- Hazardous materials awareness.

Site inductions for visitors and sub-contractors also advise individuals to report any environmental incidents or spills to site supervisors and key personnel immediately. Key site personnel and supervisors participate in PIRMP Drills which are used as practical training and can also be used to identify any potential gaps or areas for improvement for the PIRMP. A summary of the PIRMP Drills undertaken is shown below in Table 8.

Table 8 Summary of PIRMP Drills

Test Date	Version of PIRMP tested	Incident Drilled
4/02/2026	13	Incident 1: Loss of hydrocarbon. Reviewed in response to proposed recommencement of use of AKF1
15/11/2024	12	Incident #7 Infrastructure fire
28/04/2023	10	Incident 4 ESP Trip
08/04/2022	10	Loss of Radioactive Material
28/04/2021	9	New Incident: Gas Escape
07/04/2020	8	Incident 4: Escape of hydrocarbon into Lake Quality
06/05/2018	7	Incident 4: Escape of hydrocarbon into Lake Quality
26/04/2018	6	Incident 2: Loss of fuel due to refueling from diesel tank
30/03/2017	5	Incident 7: Mobile Plant, hydraulic hose or tank failure

Please note that V10 of the PIRMP consolidated the incident list. Incident numbers may be reflective of old versions of the PIRMP.

A sign-off sheet is kept of the personnel present for the undertaking of a PIRMP Drill and a record is kept on when and how the PIRMP is communicated to employees. This information forms a section of the PIRMP Drill document.



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10. PIRMP Testing

Plans must be tested routinely at least once every 12 months. The testing is to be carried out in such a manner as to ensure that the information included in the plan is accurate and up to date, and that each plan is capable of being implemented in a workable and effective manner.

Routine testing of the PIRMP will be conducted annually, and can be completed through the following methods:

- Simulated environmental emergency drills/exercises, or
- Desktop simulations.

11. PIRMP Review

Revisions are to be coordinated by the Site Manager and Environmental Representative. The objectives of a review are:

- To maintain compliance with the statutory requirements,
- To identify opportunities for improvement in the Plan, and reduce the risk to human health and the environment, and
- To identify any changes in personnel or regulatory contact information.

11.1.Event Based

Events which may trigger a review of this Plan or its associated documents include:

- Within 1 month of reporting to the nominated parties in accordance with the plan, after a pollution incident, or
- Modification/Improvement to the system

11.2.Time Based

Berrima Cement will review this management plan routinely every 12 months. The Plan review will include:

- This Document, and
- Legislation, Approval and Licence changes.
- Any internal personnel changes

12. Risk Assessment of Potential Incidents

A risk assessment of each potential incident has been undertaken and is detailed in Table 9.



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Table 9 Risk Assessment and Corrective Control Measures of Incidents

Hazard and Likelihood Risk Assessment and Corrective Control Measures									
Site: Berrima Cement Works						Responsible Person: Operations Manager		Review Date: 28 April 2023	
Name / ref of pollutant / chemicals	Description of Hazard / Incident leading to hazard	C	L	R	Impact on Neighbours ¹	Factors which could increase risk	Residual Risk after implementation of controls. (See Table 1 for list of current controls).	Responsible person	Action date
Diesel / Hydrocarbon Spill	Incident #1 Uncontrolled loss of Diesel or other hydrocarbon products that could result in material harm to the environment or human health	2	2	L4	N	Dry, windy conditions (increase fire danger) or heavy rain/flood conditions (will increase potential for spill to spread to catchment drainage areas)	Consequence: (Minor 2): Failure resulting in loss of all or substantial volume of tanks would be captured entirely by existing primary bund with no release to soil or water. Likelihood: (Unlikely 2): Diesel Tanks are self bunded double walled fuel tanks. Due to location of tank, damage to tanks is unlikely to occur from external equipment. In addition tanks are maintained in good structural integrity with low risk of failure through corrosion. Drain valve, hoses and refuelling equipment are maintained in good structural integrity with low risk of failure The drain valve is locked at all times. Risk Assessment = Minor 2 Vs Unlikely 2 = L4	As per PIRMP action plan	When required
Airborne dust	Incident #2 Excessive airborne dust from stockpiled material, mobile plant or traffic areas causing material harm to the environment or significant impact to community	2	2	L4	Y (Neighbours notified will be dependent on wind direction)	Dry, windy conditions (increase wind erosion and dust transport). Summer months with long periods of extended dry conditions.	Consequence: (Minor 2): Excessive dust from stockpile during high winds causing nuisance to surrounding area. Likelihood: (Unlikely 2): Stockpiles are maintained to a manageable level on a monthly basis. Use of water sprinklers and water cart onsite during windy periods. Extensive land reserves act as buffer land from surrounding communities. Surrounding land is rural with sparse distribution of neighbours. Risk Assessment = Minor 2 Vs Unlikely 2 = L4	As per PIRMP action plan	When required
Sediment laden stormwater	Incident #3 Uncontrolled release of sediment laden water from storage dams causing material harm to the environment	2	2	L4	Y (Neighbours to be notified will be downstream of Lake Quality and Stony Creek)	Extended periods of rain increase the risk. Late Summer/early Autumn is typically the wettest part of the year on site.	Consequence: (Minor 2): Failure of one or more sediment dams are likely to result in off-site impacts to water courses which would predominantly reduce water quality over a short period of time. As such, impact to the environment/human health is not considered to be significant. Likelihood: (Unlikely 2): Dams are frequently monitored and inspected for levels and integrity. Risk Assessment = Minor 2 Vs Unlikely 2 = L4 Note: For PIRMP purposes overflow events during extreme wet weather will be reported under POEO Licence obligations and not Immediate Reporting.	As per PIRMP action plan	When required
Electrostatic Precipitator Abnormal Operation	Incident #4 Electrostatic Precipitator Trip	2	2	L4	N	Dry, windy conditions increase transport potential. Wind from south is in direction of nearby residents). Summer months with long periods of extended dry conditions will	Consequence: (Minor 2): Localised impact regulatory consequence managed with 24hr limits	As per PIRMP action plan	When required

¹ If the incident may impact on neighbours trigger the early warnings assessment and actions

Hazard and Likelihood Risk Assessment and Corrective Control Measures

Site:
Berrima Cement Works

Responsible Person:
Operations Manager

Review Date:
28 April 2023

Name / ref of pollutant / chemicals	Description of Hazard / Incident leading to hazard	C	L	R	Impact on Neighbours ¹	Factors which could increase risk	Residual Risk after implementation of controls. (See Table 1 for list of current controls).	Responsible person	Action date
						increase ignition risk of flammable gases and consequence.	Likelihood: (Unlikely 2): Electrostatic Precipitator Trip is unlikely due to regular maintenance and calibration, on most occasion the system resets with no issue Risk Assessment = Minor 2 Vs Unlikely 2 =L4		
Gas Escape	Incident #5	4	2	H8	Y (Neighbours notified will be dependent on wind direction)	Dry, windy conditions increase transport potential. Wind from south is in direction of nearby residents). Summer months with long periods of extended dry conditions will increase ignition risk and consequence.	Consequence: (Major 4) Potential for explosion and residential areas of New Berrima to be evacuated. Likelihood: (Unlikely 2): Maintenance and inspections make it very unlikely that a gas leak will occur Risk Assessment = Major 4 Vs Unlikely 2 =H8	As per PIRMP action plan	When required
Loss of radioactive material	Incident #6	4	1	M4	Y	Extreme weather events would increase the risk of failure during transport or maintenance.	Consequence: (Major 4) Potential for exposure and impacted areas of New Berrima to be evacuated and isolated. Likelihood: (Rare 1): Maintenance and inspections. Risk Assessment = Major 4 Vs Unlikely 2 =H8		
Excessive Smoke from Fire	Incident #7 Excessive smoke as a result of equipment or alternative fuels fire causing significant and unexpected impact to the community	2	2	L4	Y (Neighbours notified will be dependent on wind direction)	Dry, windy conditions increase transport potential. Wind from south is in direction of nearby residents). Summer months with long periods of extended dry conditions will increase ignition risk and consequence	Consequence: (minor) smoke would be visible and would have a low potential to cause breathing difficulties to community members Likelihood: (unlikely) fire fighting controls are in place in the operations and staff have been trained in fire fighting response. Maintenance schedule in place to ensure process and fire fighting equipment are in good working order. Emergency response training for Boral staff in place including fire response. Fire Services NSW aware and trained in the potential for this fire.	As per PIRMP action plan	When requested



Part B: Incident Response Actions and Notification Logs



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13. Incident 1: Diesel or Hydrocarbon Spill

Table 10 Diesel/hydrocarbon Spill Response Actions

Incident 1	Uncontrolled loss of diesel or other hydrocarbon products that could result in material harm to the environment or human health. See Figure 4, 5 and 6 Actions Required: • Contact all relevant people/department (refer to Immediate Reporting Contact Sheet in Table 16) • Ensure bund/liner are capturing full volume of diesel • Ensure bund integrity is sound throughout the entire period of incident (i.e. periodic inspections) • Contact service provider (Cleanaway 13 13 39) to pump-out bund contents. • Area to be restricted to Incident Response Personnel • Ensure spill kit available for any release from bund/liner • If any release from bund/liner onto unsealed soil/surface water - Environmental Consultants to be engaged to investigate and remediate contamination. • Repair/replace tanks • Inspect bund for ongoing serviceability
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	• Emergency Controller: Operations Manager or delegate • Call service provider: Operations Manager or delegate • Spill Kit manager: Onsite supervisor or delegate • Periodic inspections and update reporting of site and bund: Onsite supervisor or delegate
Scale of incident	Incident would be restricted to the bunded diesel storage area with minimal external impact, however, potential for bund/liner overflow or failure may result in soil and surface water contamination that will require specialist investigation/remediation.
Evacuate	Only if fire or explosion potential exists. Operations Manager to begin evacuation if advice provided by Fire Department to do so as part of immediate notification.
Communications	Internal: • Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: • Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: • Consider contact neighbours only if diesel has escaped into storm-water drainage lines and will enter Stony Creek and affect residents shown in Figure 6. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8
Rescuer / respondent + safety checks	As per Site Emergency Plan CEM-BER-OHS-01 or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan CEM-BER-OHS-01 or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	Service Provider to dispose of diesel and advise on required clean-up. Environmental consultants to be engaged to investigate and remediate contamination.
Reporting and re-preparedness	See HSEQ MS: • Incident Reporting, Investigation and Action Management Standard (GRP-HSEQ 3-02)

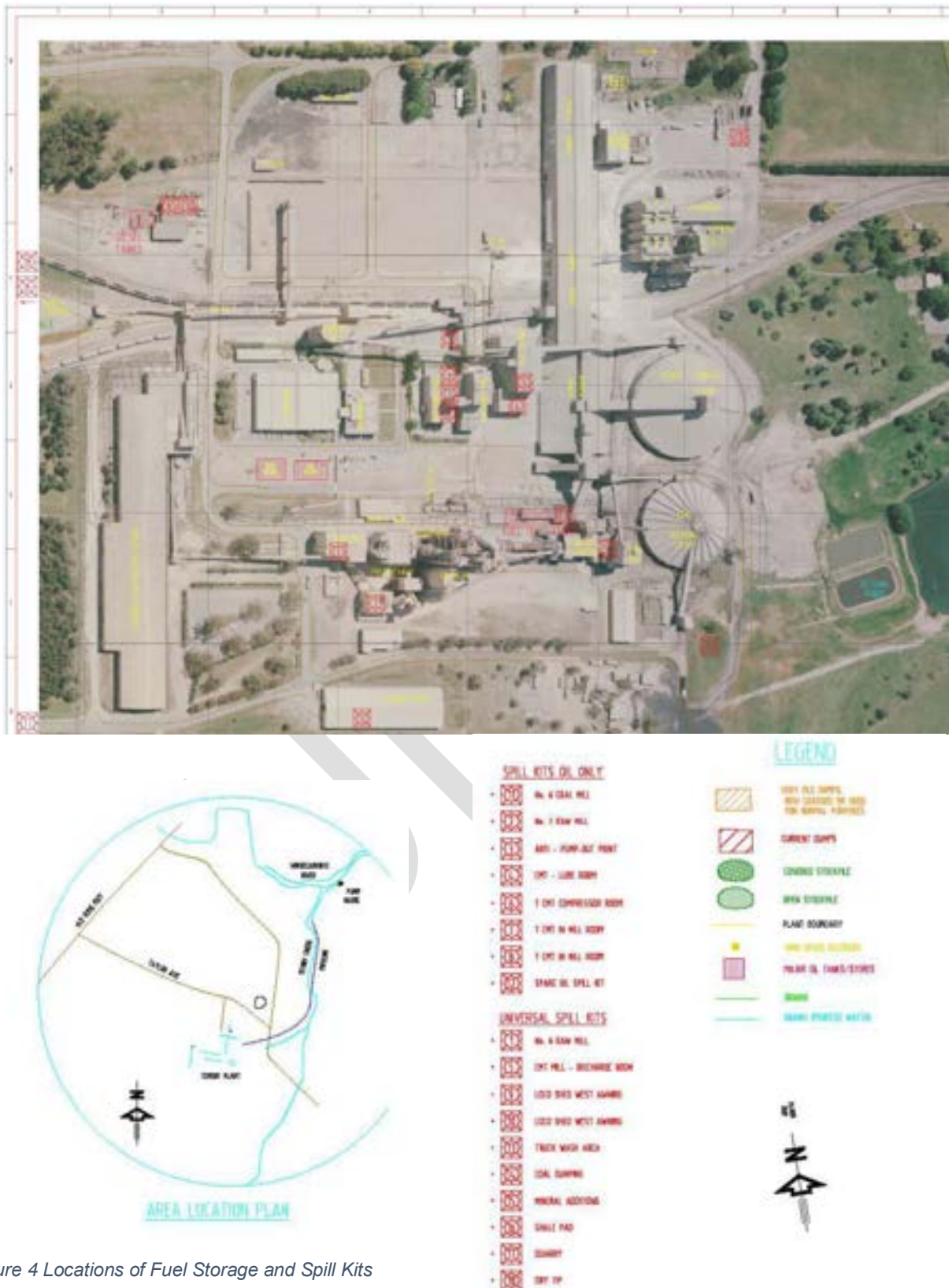


Figure 4 Locations of Fuel Storage and Spill Kits



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Note that diesel fueling facilities are located at the designated storage areas and tanks within the site. Mobile Plant tank failure would depend on the location of the break down to the site. All mobile plant are fitted with fire extinguishers.

The water drainage is shown below in Figure 5 and Figure 6 can assist in determining whether or not the spill has entered site drainage and has the potential to be transported off-site.

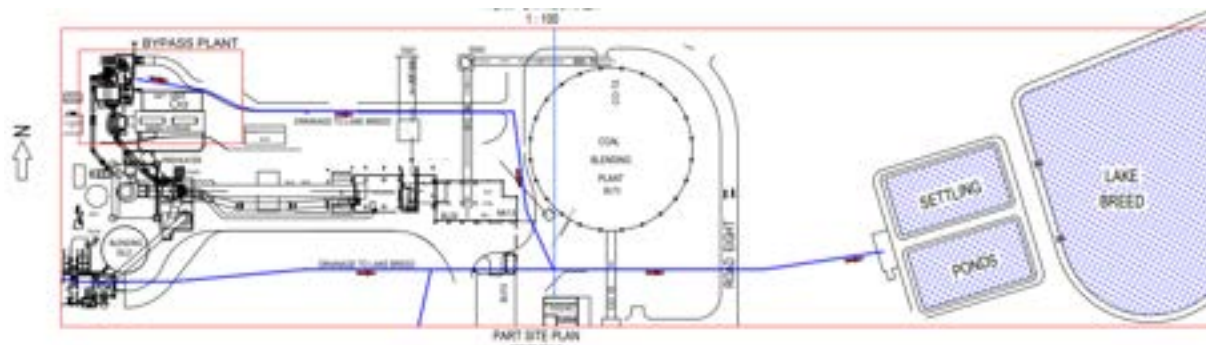


Figure 5 Location of Site Drainage



Figure 6 Potentially Affected Residents Incident 1



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14. Incident 2: Excessive Airborne Dust

Table 11 Excessive Airborne Dust Response Actions

Incident 2	Excessive airborne dust from stockpiled material, mobile plant or traffic areas causing material harm to the environment or significant impact to community. See Figure 7 and 8. Actions Required: • Employees, Contractor/Visitor to notify site representative of issue immediately. • Dust suppression activity to commence immediately on stockpiles via water cart or other means. • Any operations associated with disturbing the stockpiles, such as driving and dumping on, to be minimised or ceased. • Daily monitoring to be undertaken to assess weather and site conditions. Utilise real time dust monitoring and weather station monitoring as required • Contact all relevant people/department (refer to Immediate Reporting Contact Sheet in Table 16)
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	• Emergency Controller: Operations Manager or delegate • Call service provider: Operations Manager or delegate • Periodic inspections and update reporting of site and stockpiles: Onsite supervisor or delegate
Scale of incident	Incident would be localised to the area surrounding stockpile area, with minimal external offsite impact.
Evacuate	Only if fire or explosion potential exists. Quarry Manager and any advice provided by Fire Department as part of attendance after immediate notification.
Communications	Internal: • Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: • Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: • Consider contact neighbours only if dust significantly impacting residences. Potentially impacted residents would be dependent on wind conditions in Figure 8. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8
Rescuer / respondent + safety checks	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	All water carts to be placed on areas producing airborne dust. If necessary work must be ceased to control airborne dust. No disposal of waste required.
Reporting and re-preparedness	See HSEQ MS: Incident Reporting, Investigation and Action Management Standard (GRP-HSEQ 3-02)



Figure 7 Potential Sources of Dust

Please note that pollution controls include operational response which is not included on these maps. See Part A Section 12 for more detail on pollution controls for Incident 2



Figure 8 Potentially Affected Residents Incident 2



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15. Incident 3: Dam Failure

Incident 3	Uncontrolled release of sediment laden water from storage dams failure causing material harm to the environment. See Figure 9 and 10 Actions Required: • Contact all relevant people/department (refer to Immediate Reporting Contact Sheet) • Ensure bund integrity is sound throughout the entire period of incident (i.e. periodic inspections) • Contact local neighbours if going to be inundated by rise of water • Area to be restricted to Incident Response Personnel • If any release from site onto unsealed soil/surface water - Environmental Consultants to be engaged to investigate and remediate contamination, if any • Contact local contractor to rebuild dams immediately
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	• Emergency Controller: Operations Manager or delegate • Call service provider: Operations Manager or delegate • Spill Kit manager: Onsite supervisor or delegate • Periodic inspections and update reporting of site and bund: Onsite supervisor or delegate
Scale of incident	Catastrophic failure of one or more sediment dams are likely to result in off-site impacts to water courses which would predominantly reduce water quality over a short period of time. As such, impact to the environment/human health is not considered to be significant.
Evacuate	Only if flood potential exists. Quarry Manager and any advice provided by Fire Department as part of attendance after immediate notification.
Communications	Internal: • Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: • Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: • Consider contact neighbours only residents will be inundated with sediment laden water at locations shown in Figure 10. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8
Rescuer / respondent + safety checks	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	Depending on severity of incident, consultants to be contacted to advise on required clean-up.
Reporting and re-preparedness	See HSEQ MS: • Incident Reporting, Investigation and Action Management Standard (GRP-HSEQ 3-02)



Figure 9 Location of Storage Dams and Potentially Affected Residents

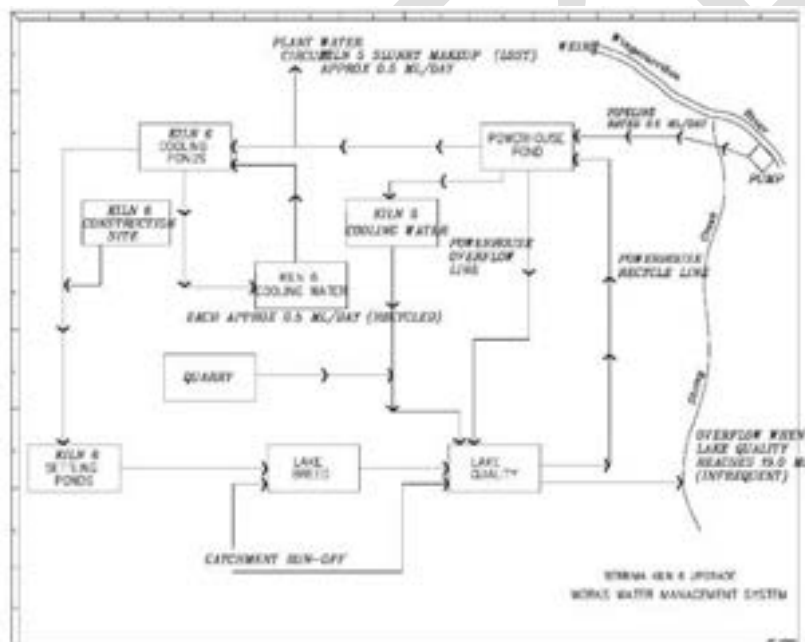


Figure 10 Overview of Site Water Management System

Please note that pollution controls include inspections and operational response which are not showed on these maps. See Section 12 for more details. For PIRMP purposes overflow events during extreme wet weather will be reported under POEO Licence obligations and not immediate reporting.



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16. Incident 4: Electrostatic Precipitator abnormal operation

Table 12 Electrostatic Precipitator Trip Response Actions

Incident 4	Electrostatic Precipitator abnormal operation. See Figure 11 and 12 Actions Required: - Control Room to notify Technical Manager/Production Manager - Monitor real time information to assess if 24 limit will be exceeded - Consider shut down based on information if reset occurs - Contact all relevant people/department (refer to Immediate Reporting Contact Sheet) - Contact maintenance team for assessment - If any release from stacks will affect near neighbors site PIRMP is to be followed - Call service provider to inspect real time monitor & equipment for serviceability if required
Alarm raising	Site Management to contact environment manager to assess the need for regulatory notification, and PIRMP actions to be implemented.
Emergency Controller	- Control room Supervisor - Notify Technical Manager/Production Manager - Notify Site Operations Manager - Track 24hr emissions graph and wind direction
Scale of incident	Incident would be likely be localised to the area with no external impact, potential for incident on a large scale with external impact is unlikely but possible.
Evacuate	Only if emissions impact exists. Site Manager and any advice by safety team will determine necessity.
Communications	Internal: - Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: - Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: - Consider contact neighbours if emissions significantly impacting residences. Potentially impacted residents would be dependent on wind conditions. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8
Rescuer / respondent + safety checks	As per Site Emergency Plan and PIRMP
Rescue + First Aid	As per Site Emergency Plan or Fire Department as PIRMP Reporting
Clean up and Waste disposal	N/A.



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Incident Notification SOP (GRP-HSEQ-3-02 Incident Reporting Investigation and Action Management)



Figure 11 Location of the Precipitator



Figure 12 Potentially Affected Residents Incident 4



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17. Incident 5: Gas Leak

Table 13 Gas Leak Response Actions

Incident 5	Failure leading to escape of flammable gas. See Figure 13 and 14 Actions Required: - Control Room to notify Operations Manager - Move people in immediate danger to safety - If safe to do so, assist and care for injured personnel and call for first aid assistance - Shut down or switch off equipment as required. LEAVE LIGHTS ON. - Restrict the area - Contact all relevant people/department (refer to Immediate Reporting Contact Sheet) - Contact maintenance team for assessment - Monitor real time information to assess if 24 extent of leak - If any release from stacks will affect near neighbors site enact early warning procedures - Monitor real time information to assess if 24 extent of leak - Call service provider to inspect real time monitor & equipment for serviceability if required
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	Emergency Controller: Operations Manager or delegate Call service provider: Operations Manager or delegate Periodic inspections and update on maintenance: Onsite supervisor or delegate
Scale of incident	Catastrophic failure of gas storage are likely to result in off-site impacts to air quality and an increased fire risk. It is likely that early warning notifications would need to be provided to residents if evacuation is required. The fire department will advise on scale.
Evacuate	If advice provided by Fire Department as part of attendance after immediate notification.
Communications	Internal: - Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: - Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: - Consider contact neighbours if emissions significantly impacting residences. Potentially impacted residents would be dependent on wind conditions. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8
Rescuer / respondent + safety checks	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	Depending on severity of incident, consultants to be contacted to advise on required clean-up.
Reporting and re-preparedness	See HSEQ MS: Incident Reporting, Investigation and Action Management Standard (GRP-HSEQ 3-02)



Figure 13 Location of Gas Escape Incident



Figure 14 Potentially Affected Residents Incident 5



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18. Incident 6: Loss of Radioactive Material

Table 14 Loss of Radioactive Material Response Actions

Incident 6	Loss of radioactive material from equipment. See Figure 13 and 14 Actions Required: • Immediately contact Operations Manager and Accredited Service Provider (Troy Jones (02) 42 68 6192 or 0409 669 491) • Immediately remove all persons from the vicinity of the incident • Area will be restricted to incident response personnel. Cordon off a perimeter of at least ten metres and monitor the radiation dose rates along all accessible sides of the perimeter. Extensions to the perimeter may be required if the dose rates levels exceed 10 $\mu\text{Sv/hr}$ • If a plant fire occurs, the Radiation Safety Officer will ensure that the attending fire brigade is aware of the location of the radiation gauges • Radiation Specialist will notify operations manager if source is lost or damaged, or if any employee has received a dose > 1mSv. • Contact all relevant people/department (refer to Immediate Reporting Contact Sheet) • Consult with radiation specialist for further remediation measures • If the incident has within transit, transport of the gauge should be made directly to the manufacturer's premises or other approved 'Isotope Handling Facility', so that the necessary repairs can be undertaken if so required.
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	Emergency Controller: Operations Manager or delegate Call service provider: Operations Manager or delegate Periodic inspections and update on maintenance: Onsite supervisor or delegate
Scale of incident	Catastrophic failure of gas storage are likely to result in off-site impacts to air quality and an increased fire risk. It is likely that early warning notifications would need to be provided to residents if evacuation is required. The fire department will advise on scale.
Evacuate	If advice provided by Service Provider or Fire Department as part of attendance after immediate notification.
Communications	Internal: • Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: • Immediate Reporting Contact Sheet to be See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: • Consider contact neighbours if advised by service provider that an ignition risk or risk to human health exists if emissions significantly impacting residences. Potentially impacted residents would be dependent on wind conditions. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8.
Rescuer / respondent + safety checks	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	Depending on severity of incident, consultants to be contacted to advise on required clean-up.



Figure 15 Location of Fixed Radiation Gauges



Figure 16 Potentially Affected Residents Incident 6



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19. Incident 7: Excessive Smoke from Fire

Table 5 Fire and Smoke Response Actions

Incident 7	Excessive smoke as a result of equipment or alternative fuel fire See Figure 15 and 16 Actions Required: • Activate the nearest emergency alarm. Advise the Area Warden immediately of the fire or smoke and its location on the site. • Area Warden is to move any people in immediate danger to the Safe Assembly Area, and advise the Chief Warden immediately of the fire or smoke and its location on site. • The Chief Warden will assess the situation and, if deemed appropriate, evacuate the site and notify emergency services.
Alarm raising	Any personnel involved or witnessing incident to report to immediate supervisor and PIRMP actions to be implemented.
Emergency Controller	Emergency Controller: Operations Manager or delegate Call service provider: Operations Manager or delegate Periodic inspections and update on maintenance: Onsite supervisor or delegate
Scale of incident	Catastrophic fire of equipment or alternative fuel storage is likely to result in off-site impacts to air quality through smoke particles. Smoke will also be visible. It is likely that early warning notifications would need to be provided to residents if evacuation is required. The fire department will advise on scale.
Evacuate	Internal evacuation of the immediate area or full site will be advised by the Chief Warden and / or the Fire services. No external evacuation required unless potential for expansion of the fire, or if wind has the potential to carry smoke to neighboring residences.
Communications	Internal: • Operations Manager or delegate to use contact sheet for all internal (Boral) contacts. See Table 16 for the list of internal details External mandatory: • Immediate Reporting Contact Sheet to be followed See Table 16 for the list of authorities to be contact and fill in the immediate notification log in Table 15 External non-mandatory: • Consider contacting neighbours if advised by service provider that an risk to human health exists if emissions significantly impacting residences. Potentially impacted residents would be dependent on wind conditions. See Table 17 for the community notification list and contact relevant people. Further guidance on communication can be found in Part A Section 7 and 8.
Rescuer / respondent + safety checks	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Rescue + First Aid	As per Site Emergency Plan or Fire Department as part of Immediate Reporting
Clean up and Waste disposal	Depending on severity of incident, consultants to be contacted to advise on required clean-up.
Reporting and re-preparedness	See HSEQ MS:



Figure 17 Location of alternative fuel storage



Figure 18 Potentially Affected Residents Incident 6



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20. Pollution Incident Notification Log

Person undertaking notification (Name/Function):		
Date and time when first become aware of the incident:		
Incident type:		
Comments:		

Table 15 Initial Immediate Notification Log

Appropriate Regulatory Authority	Time of call	Respondent's name/function	Approximate call duration	Comments
EPA				
Public Health Unit				
Fire and Rescue NSW				
Local Council				
Safework NSW				
Other: (including neighbours)				



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Appropriate Regulatory Authority	Time of call	Respondent's name/function	Approximate call duration	Comments
Other: (including neighbours)				
Other: (including neighbours)				
Other: (including neighbours)				
Other:				
Summary of initial communication:				
Person undertaking notification (Name/Function):				
Date and time when additional information become available:				
Comments:				



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Immediate notification of further pertinent information (if applicable)				
Appropriate Regulatory Authority	Time of call	Respondent's name/function	Approximate call duration	Comments
EPA				
Public Health Unit				
Fire and Rescue NSW				
Local Council				
SafeWork NSW				
Other:				
Other:				
Summary of additional communication				



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21. Immediate Notification Sheet

Table 16 Immediate Notification Sheet

INTERNAL NOTIFICATION SHEET			
Name	Function	Phone Number	Mobile Number
Waqas Ali	Operations Manager		
Gabriel Paicu	Technical Manger		
Branko Vulenta	Production Superintendent/ Quarry Manager		
Greg Johnson	Senior Environment Business Partner – NSW/ACT		
Sharon Makin	Environment Business Partner – NSW/ACT		
Government Authority – compulsory notifications		Emergency notification phone number	
EPA – Environment Line		131 555	
Fire & Rescue NSW (FRNSW)		1300 729 579	
Wingecarribee Council		(02) 4868 0888	
Public Health Unit (Southern Sydney) – Liverpool GW PHU		HealthLink (24 hr)- 1300 066 055 Head Office- Liverpool- (02) 9794 0855	
SafeWork NSW		131 050 Company ABN asked: 62 008 528 523	
Government Authority – ring if relevant		Emergency notification phone number	
Police & Ambulance		000	
Roads and Maritime Services (road spills)		132 701	
WNSW Incident Line		1800 061 069	
Bush Fire Control Officer		02 4677 7000	



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Poisons Information Centre	131 126
Endeavour Energy (power line emergencies)	131 003
Australian Radiation Protection and Nuclear Safety Agency	1800 022 333

Table 17 Community Notification Contact List

Name	Address	Postal Address	Preferred Contact	Email
New Berrima Residents - contact if relevant				
Others – contact if relevant				



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Note: when alerting, please remember that he has a list of 4000 names of SHCAG members. He is eager to help notifying on our behalf, just make sure he notifies only people in the areas under threat from the pollution incident. This will have to be discussed in detail.

Register last updated 16/10/2012

Guidance for notifying relevant neighbours is detailed in Part A Section 8.2

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APPENDIX 9 VEHICLE & PEDESTRIAN MANAGEMENT PLAN



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VEHICLE AND PEDESTRIAN MANAGEMENT PLAN

BERRIMA CEMENT WORKS & BLUE SHALE QUARRY



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1. Purpose

The Vehicle and Pedestrian Management Plan (this Plan) has been designed for the Berrima Cement Works and Blue Shale Quarry under normal operating conditions. For extraordinary maintenance or shut down works, an additional plan will be created to capture temporary changes to the vehicle and pedestrian interfaces.

1.1 Blue Shale Quarry Requirements

How the requirements of the WHS Mining Regulations are considered and met are documented in the Mine Safety Management System document.

2. Roles and Responsibilities

Site Operations Manager	Responsible for ensuring: • Establishment of this Plan • performance objectives and targets are established, monitored and achieved • availability of resources • Communicating the importance of this Plan, meeting statutory and regulatory requirements; • Conducting management reviews of this Plan every 2 years • Verifying the implementation of corrective actions • Recognising and responding to community concerns.
Production Manager / Technical Manager / Engineering Manager	• Ensuring staff within their area of responsibility are trained and updated on this Plan, responsibilities, instructions and procedures; • Reviewing traffic operations and implementing strategies to minimise the potential for traffic conflict and/or personal injury resulting from traffic movement; • Coordinating the auditing of the Plan to ensure compliance • Ensuring traffic and pedestrian incidents are investigated and corrective action taken; • Ensuring all training is recorded and monitored
Team Leaders / Front Line Supervisors	• Identifying, reducing and preventing traffic movements that may result in traffic conflict and/or personal injury; • Reporting non-compliances with this plan • Initiating actions to prevent traffic and pedestrian incidents; • Reporting and recording traffic and pedestrian incidents; • Initiating corrective actions to repair harm caused by traffic incidents.
WHS Business Partner	• Assisting the site to prepare and review this Plan. • Checking the implementation of this Plan



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Employees, Contractors and Visitors	• Obeying all traffic and pedestrian signage and speed limits within the site • Complying with any traffic management instructions and procedures that apply to their work or operations; • Reporting traffic incidents;

3. Health, Safety and Environment Considerations

3.1 Noise

Truck movement hours are not restricted. To minimise the impact of truck movements on the local community the majority of despatches are made on working week days between 0600 and 1800 hours.

The majority of incoming trucks with delivery of alternative fuels such as tyre and wood chips also occur during similar hours.

Truck movements for the delivery of raw materials and Kiln 6 Fuels are limited to a maximum number of 212 trips (106 total heavy vehicle deliveries) per day where a movement is **a one-way heavy vehicle movement from one point to another, excluding the return journey.**

This limit is in place until road works associated with Modification 14 are undertaken whereby truck movements can increase to **a maximum total of 256 trips (128 total heavy vehicle deliveries).**

3.2 Dust

All raw materials, including alternative fuels and finished products being carted to and from the site by road shall be covered to minimise dust emissions.

All vehicles exiting the Quarry and the Shale Pad are to exit via the wheel wash stations to minimise drag out from the areas.

Dust suppression will be performed as required.

3.3 Training

Training on this Plan includes toolbox talks, displaying of maps and site inductions.

3.4 Site Access

Access to the site is from Taylor Avenue via two security gates, Gate 1 "Argyle Street Entrance" and Gate 2 "Perth Street Entrance". These two entrances are adjacent to the village of New Berrima.

Incoming heavy vehicles (Tippers, Tankers, B-doubles etc) are expected to use the Perth Street entrance. It may be necessary to allow heavy vehicle to use the Argyle Street entrance under strict conditions, for example, in periods of high movement volume or Perth Street entrance closure.

3.5 General Traffic Rules

As a minimum NSW Transport for NSW Road Rules and any SafeWork NSW licencing requirements apply on site. Additionally:

- Do not stand within 25m of tipping trucks (or 1½ times the tipping body length)
- Pedestrians to give way to vehicles and mobile plant
- Three points of contact is to be used while climbing on or off any piece of equipment or when using stairs. If the access is near vertical, face the ladder or catwalk when climbing on and off the item of equipment, and never jump off machinery.
- The site has a Zero Breath Alcohol policy. The Boral Cement Alcohol and Other Drugs procedure applies to all persons at Berrima Cement Works.

3.6 Signage, Markings and Separation

3.6.1 Signage

Roads, traffic ways, pedestrian traffic ways and parking areas are to be clearly sign posted to define the requirements.

3.6.2 Markings

- Pedestrian crossing and walkways are to be clearly identified
- Parking bays are to have clear delineation

3.6.3 Separation

- Areas noted in the risk assessment are to have separation between vehicles/mobile plant and pedestrians
- No person is permitted to pass through a danger barricade without seeking approval from the name on the tag. Pedestrians can move through caution barricades after reading tag details.
- No person is permitted to pass/drive over the peak of a windrow/bund.
- Appointed traffic controllers will control vehicle interactions when required.

3.7 Speed Limits

The speeds shown below are the maximum allowable speed, however operators must drive to the prevailing conditions. Be wary of poor visibility, crowded areas and poor road surfaces.

The following MAXIMUM speed limits apply on the Cement Works site:

• General site speed limits unless signposted	50 km/h;
• Congested or restricted areas and Blue Shale Quarry	20 km/h;
• Shared Zones	10 km/h.

3.8 Accessing the Rail Corridor

Vehicles shall cross the rail corridor at designated crossings. Trains have right of way at all crossings.

No vehicle shall access the rail corridor and travel along the rail line unless;

- The rail line is isolated, AND;
- The rail infrastructure is concreted to protect it from damage.

3.9 Quarry and Shale Pad

Light vehicles (3T and under) must not enter the quarry area without:

- An operator who is aware of the Cement Works environments and the content of this Plan
- A clearly visible orange flashing light on at all times (no strobe lights)
- A two way radio either installed or hand-held. Use channels 1 or 3. When using the twoway radios hold down the button for a full second prior to speaking to ensure your full message is transmitted.
- Having contacted the machine operator's on the radio stating their intention to enter the quarry area.
- When there is a need to come within 50m of heavy mobile equipment, a response must be obtained from the Operator before proceeding, and the equipment has been powered down and parked in a safe manner;
- The Central Control Room must give permission before a person may access the Shale Pad. Prior to accessing the area, contact must be made with the operators on the Shale Pad and access shall only be made once all operations have ceased. Once granted, pedestrian access to the Shale Pad is only permitted either by car at the western entrance to the Shale Pad, or on foot via the stairs next to the Shale Crusher building. Operations must not recommence until pedestrians have left the Shale Pad.

3.10 Workshop Management

The following rules apply in and around the workshop;

- Entry is via the south facing roller door, exit via the north facing roller door;
- In the confines of the Maintenance Workshop, all heavy mobile equipment will have the right of way at all times.
- The use of horn signals prior to entering or moving to warn pedestrians of the intent to enter is mandatory
- Reversing should be minimised where possible. A spotter must direct all heavy mobile equipment when reversing in and out of the workshop. Barricading should be used to prevent inadvertent access when guiding in heavy mobile equipment;
- Buckets of heavy mobile equipment must be emptied before entering the workshop;

- If the body or bucket of a vehicle is raised, the body or bucket must be empty of material outside before it is raised and safety pins installed and or props used to prevent unwanted lowering of the body or bucket.

3.11 Tyre Chip Storage Area (TCSA)

A front end loader operates in this area along with road trucks delivering tyre chips.

Section 3.16 outlines the operations for truck movements within the area.

Appendix 5 and 6 identify front end loader and bulk materials traffic routes.

Light vehicles (3T and under) must not enter the TCSA without:

- An operator who is aware of the Cement Works environments and the content of this Plan
- A clearly visible orange flashing light on at all times (no strobe lights)
- A two way radio either installed or hand-held. Use channels 1 or 3. When using the two way radios hold down the button for a full second prior to speaking to ensure your full message is transmitted.
- Having contacted the machine operator's on the radio stating their intention to enter the TCSA area.
- When there is a need to come within 50m of heavy mobile equipment, a response must be obtained from the Operator before proceeding, and the equipment has been powered down and parked in a safe manner;

3.12 Safe Operating / Approach Distance

- The safe distance for following behind an empty or loaded heavy vehicle is 50m;
- The safe approach distance to approaching a loading, dozing or grading unit is 50m before making radio contact. Positive contact is defined as an understandable radio reply and/or a visual gesture confirming permission to approach the machine.

3.13 Parking

Any vehicle or mobile plant parked for the purposes of maintenance should have the wheels chocked prior to work commencing.

Light Vehicles requirements

- Only park in designated areas. No staff parking in visitor parking area unless permission from Manager. Night shift workers are excluded for security reasons.
- Park so the first movement is forward
- Turn off, out in gear and lock vehicle before exiting or when leaving it on site overnight.

- Do not park closer than 50m to operating equipment unless radio contact has been made with the operator, and permission has been given to approach
- Never park immediately in front of or behind Heavy Mobile Equipment without prior positive contact – it is always safest to park beside and or in full view of the equipment driver.

Mobile Equipment/Heavy Vehicles require:

- Park in their designated parking bays where provided;
- When parking temporarily, where possible reverse into a safe location that allows

maximum visibility when moving off;

When parked as a result of a break down, chock wheels.

3.14 Horn Signals

Before starting or moving heavy mobile equipment you must use the correct horn signals to inform other people in the area know what you are going to do. This applies in all areas including the workshop.

The horn signals are to be used when coming around corners and building and when there is no full visibility.

3.15 Stockpile Access

Any tipping / dumping is to be carried out in accordance with the site dumping procedures.

Tipping of material on a stockpile is not permitted if it is being reclaimed from below. All active tip heads or tip areas shall be demarcated as closed below to prevent vehicles from becoming exposed to falling rocks.

Prior to tipping on a new tip-head, a windrow (safety bund) must be established and the Production Services and Logistics Supervisor must inspect the stockpile.

3.16 Deliveries, Loading and Unloading

- All vehicles are to be loaded in such a manner so as to minimise spillage and the load is to be safely distributed. No vehicle is at any time is to be overloaded.
- Trucks must always reverse into the loading position under a loaded bucket. The vehicle must not be operated in such a way that the cab will pass under a loading machine's bucket at any time.
- Trucks delivering trye and wood chips must always reverse into the designated unloading bays. Truck bodies are not to be lifted until the vehicle is stationary. Trucks must not unload material if truck wheels are located on stockpiled material. Trucks must be level.



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- Truck drivers may only leave the cab of their vehicle during the loading and/or unloading process following positive communication with the person loading and /or unloading the truck.
- Deliveries are to be undertaken in areas noted on the site map
- The delivery area is to be segregated during loading and unloading using tape barricades etc to prevent pedestrians from entering the area.
- Only authorised people are to load and unload vehicles.
- Drivers of trucks being loaded or unloaded by forklift need to communicate with the forklift operator and establish protocols to ensure the vehicle is not able to move unexpectedly and the driver is positioned in a safe location. The driver of the vehicle shall either remain in the cab and the keys given to the forklift operator or driver to exit the cab with his keys and position himself in an agreed location until un/loading is complete.

3.17 Auditing

The Traffic Management Plan Assessment checklist is designed as the audit tool for determining needs, reviews and compliance to this plan.

3.18 Incident and Near Miss Management

All incidents and near misses shall be managed as per the requirements of the Incident Reporting, Investigation and Action Management procedure. In the event of a breach of this Plan, the potential causes of the breach will be investigated and appropriate corrective actions undertaken.

3.19 Emergency Response

All emergencies shall be managed as per the Berrima Cement Works Emergency Response Plan.

4. Associated Documents

- GRP-HSEQ-5-04 Mobile Plant
- GRP-HSEQ-5-05 Light Vehicle Operation
- GRP-HSEQ-5-06 Heavy Vehicle Operation
- GRP-HSEQ-7-09 Pedestrian and Vehicle Management
- GRP-HSEQ-7-07 Workplace Signs
- HSEQ-7-09-F02 Traffic Management Risk Assessment;
- HSEQ-7-09-F03 Traffic Management Plan Assessment Checklist;
- HSEQ-7-07-F01 Workplace Signage Inspection Checklist
- Berrima Drawing 40340-8-LOADER TRAFFIC;
- Berrima Drawing 40340s9r-BULK TRUCKS

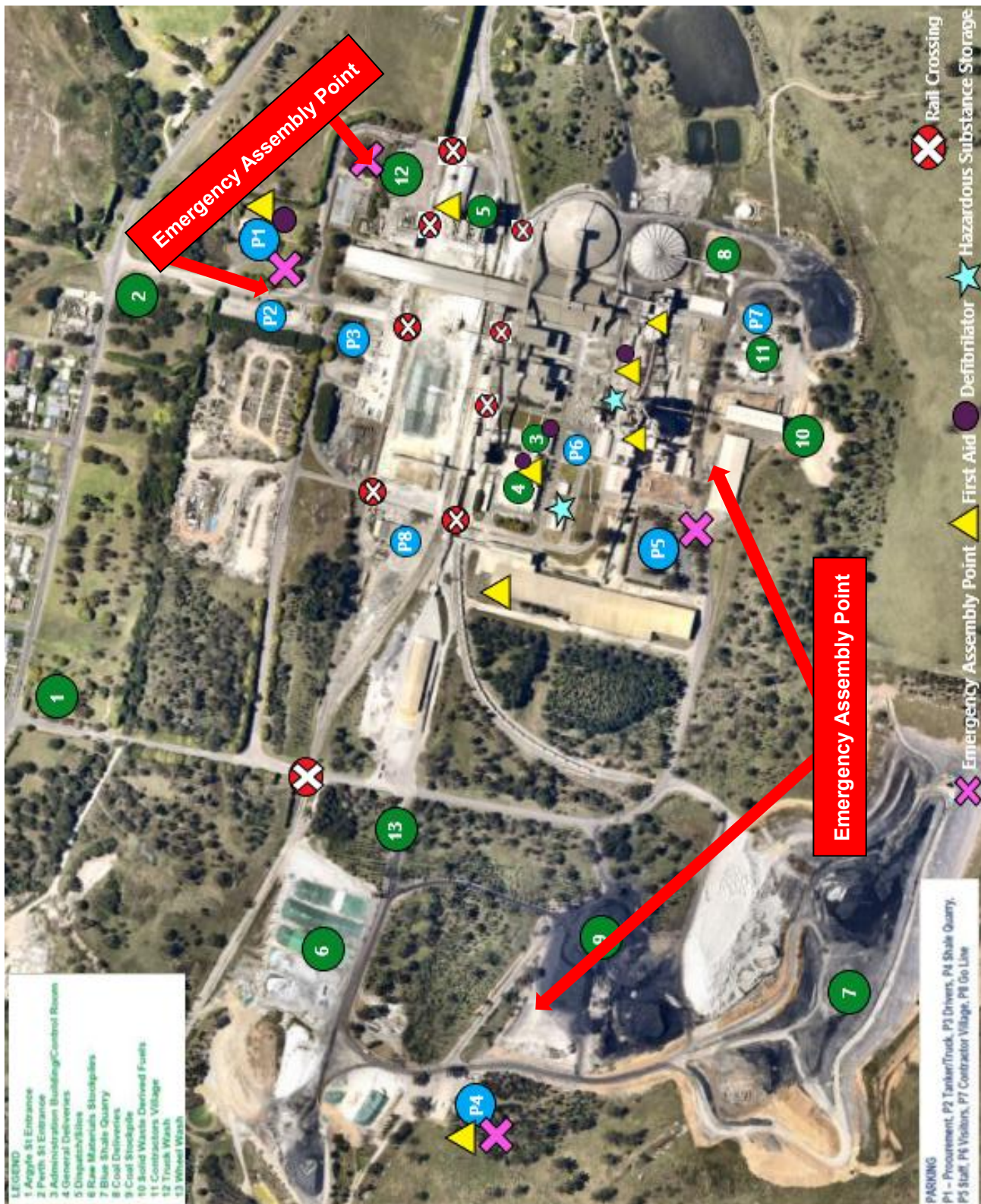
5. Revision History

Version	Date	By Whom	Description of Changes
1	November 2007	Grant Williams	Original version
2	September 2011	Alex Whorowski	Global revision and formatting change
3	September 2014	Michael Curley	3-yearly review
4	August 2017	Michael Curley	Major revision and formatting changes
5	November 2019	Rob Lasker	Review to align with HSEQ MS
6	September 2020	Naomi Munce	Update and HSR Review
7	June 2023	Jessica Seifert / Sharon Makin	Review and update in response to Mod 15 approval for Tyre Chip storage, removal of intermodal as it no longer operates
8	April 2025	Sharon Makin	Review and update in response to Mod 14 and use of AKF1 HFO

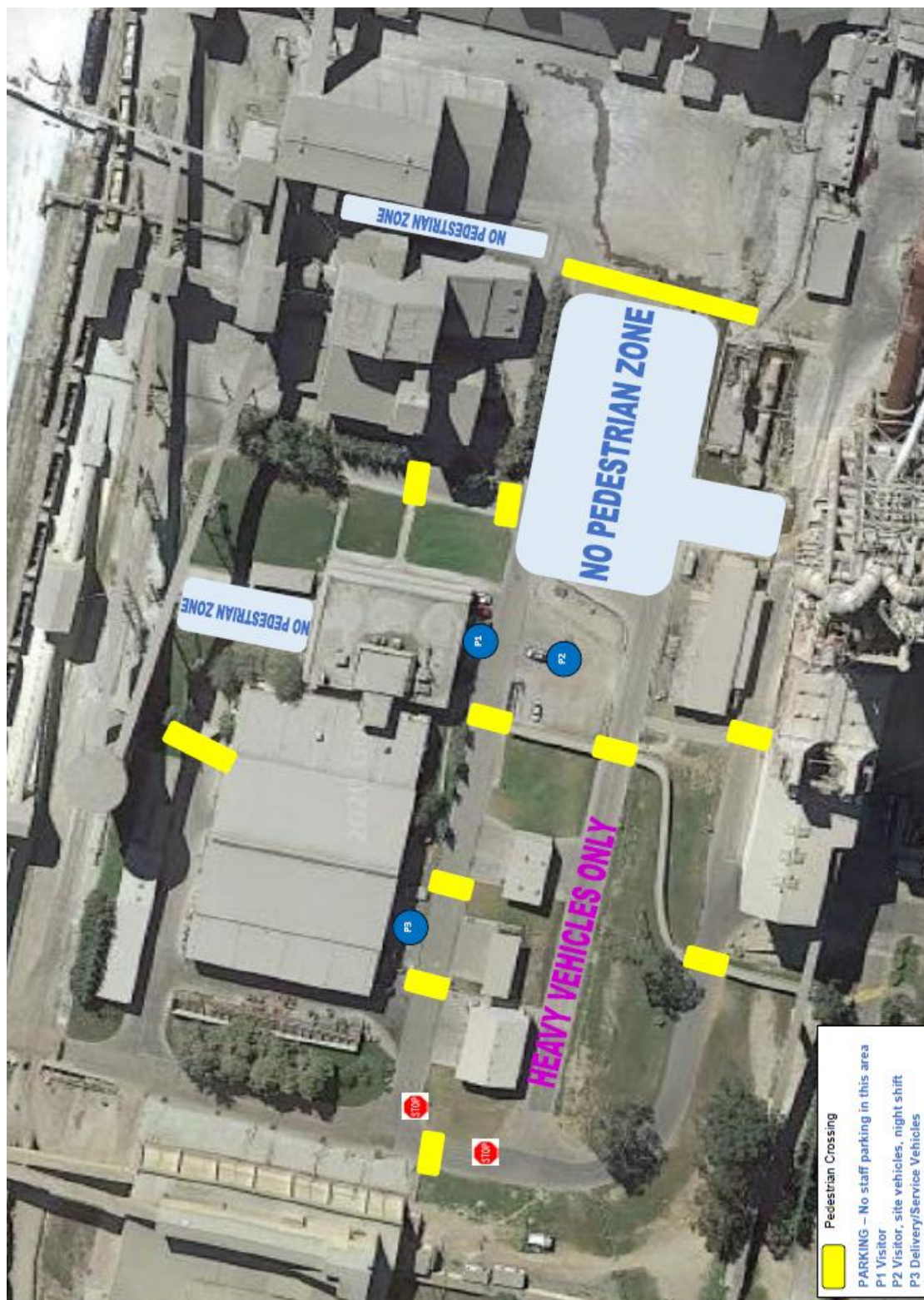


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APPENDIX 1 GENERAL SITE GUIDE



APPENDIX 2 PLANT CENTRE TRAFFIC FLOW



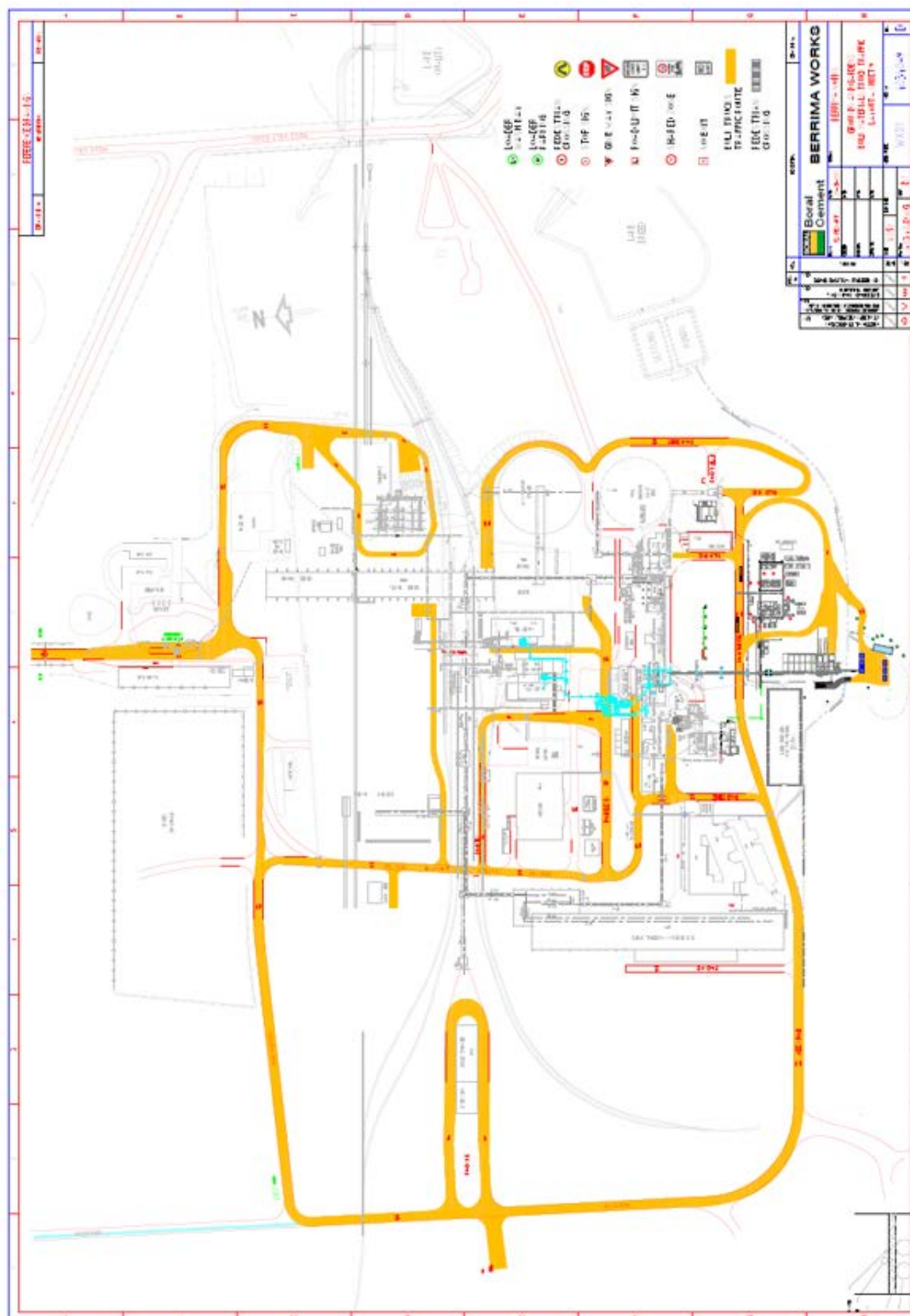
APPENDIX 3 INTERMODAL TRAFFIC FLOW



APPENDIX 4 BLUE SHALE QUARRY TRAFFIC FLOW & EMERGENCY RESPONSE



APPENDIX 6 BULK TRUCK TRAFFIC ROUTE





APPENDIX 10 WASTE MANAGEMENT PLAN



Boral Cement Limited

Berrima Works

Waste Management Plan (Appendix 10 of OEMP)

Document Filename:	CMT-ENV-006 Berrima Waste Management Plan
Document Owner:	Operations Manager, Berrima Works
Approved By:	Operations Manager, Berrima Works

Version History:

Version	Date	By Whom	Description of Changes
1	30 November 2007	Grant Williams	Original version
2	7 October 2008	Grant Williams	Update to include requirements of Boral Cement corporate procedure, include NSF requirements.
3	September 2011	Alex Wnorowski	Global revision and formatting change
4	September 2014	Michael Curley	3-yearly review
5	March 2018	Michael Curley	Update to include new requirements from Modification 9 development consent
6	April 2020	Greg Johnson	Update to include reference Modification 11 and 12. Only minor role name changes etc.
7	May 2023	Sharon Makin	Update to include reference to Modification 13 and 15.
8	15 April 2025	Sharon Makin	Reviewed to include requirements of Mod 14 Development Consent Reviewed for usage of AKF1 No changes required
9	23 March 2026	Sharon Makin	Reviewed against DPHI RFI. No changes



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Attachments:

Site Waste Register

Issue Date: April 2025	Printed On:	Printed copies are uncontrolled
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1 PURPOSE

Boral policy requires all sites to monitor and measure all waste materials produced, reused and recycled and disposed of. There are also licence and regulatory requirements for the disposal of waste materials that must be complied with.

This Waste Management Plan (the Plan) defines the procedures for the handling, disposal and tracking of waste materials at the Berrima Cement Works (the Works) to ensure compliance with the conditions in the development approvals (DAs) for Kiln 6 (DA No. 401-11-2002-i) and Cement Mill 7 (DA No. 85-4-2005-i), including the consolidated DA for modifications 1 to 15 and Environmental Protection License 1698 (EPL) .

The Plan also facilitates the collection of waste data for use in preparing the annual Boral Sustainability Report.

2 SCOPE

This Plan applies to all waste materials or by-products generated at the Works.

This document has been based on the Boral Group Standard GRP-HSEQ-8-02.

The Plan does not apply to Non-Standard Fuels or external waste materials bought into the Works as recovered resources for use in clinker and cement manufacture.

The solid waste derived fuels will be stored and used in accordance with Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels prepared according to Condition 6.8 of the MOD 9 consent and attached to the consent.

3 MANDATORY REQUIREMENTS

The minimum mandatory requirements for compliance with this Plan are outlined in Table 1.

Table 1 Compliance requirements

	Requirement	Examples of Evidence / Verification
1	Implement the appropriate method of storage/reuse/disposal for each waste type created on site.	Documented records of materials transfers, contractor records, monthly reports and computer/weighbridge records to verify proper implementation.
2	Maintain a register of the main types of waste on site and their storage/disposal methods.	Documented register of waste types and their storage/disposal methods.

4 DEFINITIONS

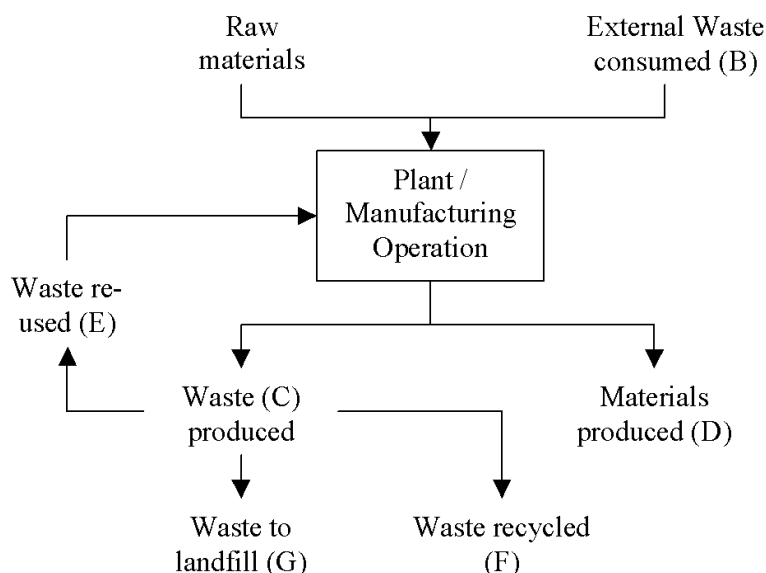
The waste definitions and descriptions in Table 2 correspond to those used in the Boral Sustainability Report.

Table 2 Waste definitions

Waste type	Definition
Waste product produced (tonnes)	
<i>Waste product produced (tonnes) (C)</i>	The material that is produced as an unwanted side effect of a production process.
<i>Own waste reused (tonnes and % of total weight of waste product produced) (E)</i>	Own waste material reused as a raw material in clinker or cement manufacture.
<i>Own waste recycled (tonnes and % of total weight of waste product produced) (F)</i>	Own waste material being used by an external business or by another Boral business.
<i>External waste consumed (recovered resource) (tonnes) (B)a</i>	External product reused as raw materials or supplementary cementitious materials in manufacture of clinker or cement.
Waste to landfill (tonnes; off site and on site)	
<i>Waste to landfill (G)</i>	The unwanted material produced for which there is no alternative but to discard.
<i>Hazardous waste produced (tonnes)</i>	A subset of solid waste that is ignitable, explosive, reactive, corrosive or toxic and which may pose a substantial or potential hazard to human health and safety or to the environment when improperly managed.
<i>Putrescible waste produced (tonnes)</i>	Household food waste, green waste and certain wastes arising from commercial and industrial sources, all of which will easily decompose and breakdown.
<i>General waste produced (tonnes)</i>	General factory waste and rubbish which does not easily decompose and breakdown including wood, rubber, used filter bags etc.
<i>Special wastes</i>	Special waste specifically refers to clinical and related waste, asbestos waste, waste tyres.
Other wastes recycled	
<i>Waste paper and cardboard recycled (F)</i>	Waste paper and cardboard being used by an external business to manufacture paper and cardboard.
<i>Waste scrap metal recycled (F)</i>	Waste steel, iron and non-ferrous metals being used by an external business to manufacture new metal.
<i>Waste oils and greases</i>	Waste oils and greases either sent for recycling or disposal.

These waste materials are shown graphically in the diagram below.

Figure 1 - Typical Site Waste Streams



5 RESPONSIBILITIES

In addition to the specific responsibilities listed in Section 6 the following general responsibilities in Table 3 apply.

Role	Responsibility
<i>Employees</i>	Responsible for ensuring that the waste standards for their work are achieved. This includes: Implement waste procedures at all times. Immediately report any observed incorrect or unauthorised dumping.
<i>Team Leaders / Front Line Supervisors</i>	Ensure all personnel are aware of the waste procedures, and monitor compliance with procedures.
<i>Production Services and Logistics Superintendent</i>	Responsible for: ➤ Controlling and monitoring the dry tip area and assigning areas to be used for storage of waste materials. ➤ Report the tonnages of each material returned to the process to Manufacturing Analyst each month
<i>Production Manager, Technical Manager</i>	Responsible for:

**BERRIMA WORKS
WASTE MANAGEMENT PLAN**



	➤ Monitoring compliance with procedures. ➤ Reporting outcomes of monitoring of compliance with procedures to Berrima Management and identify opportunities for improvement.
<i>Production Manager, Technical Manager and Maintenance Manager</i>	Responsibility and authority to ensure that the site environmental dust objectives are achieved. This includes: ➤ Ensuring staff are trained with respect to waste management responsibilities, instructions and procedures. ➤ Ensuring waste incidents are investigated and corrective and preventative action taken. ➤ Ensuring operations comply with the conditions of DAs, EPL and relevant legislation. ➤ Reviewing operations and implementing strategies to reduce waste generation from the Works.
<i>Site Operations Manager</i>	Responsible for: ➤ Implementing Boral environmental policy on site. ➤ Ensuring site environment performance objectives and targets are established, monitored and achieved. ➤ Defining responsibilities for the OEMP. ➤ Ensuring the availability of resources. ➤ Communicating the importance of the OEMP and meeting the statutory and regulatory requirements. ➤ Conducting management reviews of the OEMP. ➤ Ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities. ➤ Verifying the implementation of corrective and preventive actions. ➤ Recognising and responding to community concerns. ➤ Review operation of waste procedures, compliance with procedures and recommendations for improvements.
<i>Manufacturing Analyst</i>	➤ Collate waste data and report monthly into the Boral Cement Sustainability Data Capture Spreadsheet. ➤ Report waste data into the BC Sustainability Data Capture Spreadsheet for use in preparing the annual Boral Sustainability Report and for review by site management.



6 PROCESS

Procedures described below shall be used for each waste material.

For materials not defined in the procedure the Environmental Business Partner / Production Services and Logistic Superintendent must be consulted before the material is moved or disposed of.

Note 1:

The Work's EPL does not allow for the disposal of waste materials on site. Material that cannot be reused or recycled must not be disposed at the Works and must be sent to offsite disposal in a licensed waste facility using a licensed contractor.

Note 2:

All waste materials taken off site must be weighed on the Work's weighbridge and the weights used in the preparation of the Boral Sustainability Report.

To facilitate this, waste codes for the weighbridge have been introduced for all waste materials. See Section 6.1.

1.1 Weighbridge System Waste Codes

The NSW Government has assigned specific waste classifications to various types of waste materials. The product codes in Table 3 should be used to record all waste movements off the Works site (includes GES and Administration Building):

Table 3 Product codes

Code	Waste
501	General Waste
502	Hazardous Waste
504	Putrescible Waste
505	Waste Paper and Cardboard
508	Scrap Metal
509	Waste Oil
516	Waste Grease
532	Waste Refractories

1.2 Own Waste Reused

By-products and process waste materials from the clinker and cement manufacturing process may be reused in the cement making process where their reuse does not affect the quality of the finished products or cause process control problems.

These materials should, where possible, be returned directly to process without intermediate temporary storage or processing. Materials returned immediately to the process are not required to be weighed or recorded except where this information is for use in process investigations, etc.

All materials not returned immediately to the process and sent to temporary storage before processing and reuse must weighed for reporting through the Boral Sustainability Report.

Procedure

Details of all materials from the temporary stockpiles in the Quarry and Dry Tip areas, reused in the process, are to be recorded. The information to be recorded is:

- the details of the material (e.g. limestone, mixed raw materials, clinker, cement etc);
- where the material was returned to the process;
- number of loads;
- weight(s) of loads;
- estimated total weight of material;
- the driver's name.

Responsibilities

- *Loader Operator & Yard Operator(s)* – record daily details as listed above for all materials carted from the temporary stockpile, returned to the process, in duplicate book; provide copy to Production Superintendent daily.
- *Truck Operator(s)* – record daily details as listed above for all materials carted from the temporary stockpile, returned to the process, in duplicate book; provide copy to Production Superintendent daily.

1.3 Temporary Storage of Own Waste Material

Plant by-products, raw materials and process waste materials that cannot be immediately reintroduced to the process can be sent to the stockpiles at the Quarry/Dry Tip or other defined areas for temporary storage prior to being recycled to external users or reused in the cement manufacturing process.

Procedures for reuse of the various waste materials are included in the Standard Work Procedures Manual.

Materials that can be sent to the Quarry/Dry Tip or other defined areas for temporary storage are:

- ✓ raw materials rejected because of contamination with metal;

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✓ raw materials, clinker, cement, conditioning tower dust etc that are wet/contaminated with no hazardous materials, oils and grease etc that cannot be reused in the manufacture of clinker or cement without treatment or blending with other materials; and

× **No other materials are to be disposed to the Dry Tip area without the written approval of the HSE Advisor / Production Services and Logistic Superintendent.**

Procedure

The Production Superintendent is responsible for controlling and monitoring the site's dry tip area and assigning this and/or other areas to be used for the temporary storage of waste materials.

The details of all materials sent to the stockpiles at the dry tip, quarry or other defined areas are to be recorded. The information that should be recorded is:

- the details of the material (e.g. limestone, mixed raw materials, clinker, cement etc);
- the source of the material;
- why the material has been sent to the dry tip area;
- the assigned location that the material has been tipped at;
- any contaminants present (e.g. gloves, wood, cardboard, plastic etc);
- number of loads;
- weight(s) of loads;
- estimated total weight of material; and
- the driver's name.

Responsibilities

- *Yard Operator(s)* – record daily details as listed above for all materials carted to the temporary stockpile at dry tip area in duplicate book; provide copy to Production Superintendent daily.
- *Vacuum Truck Operator(s)* – record daily details as listed above for all materials carted to the temporary stockpile dry tip area in duplicate book; provide copy to Production Superintendent daily.

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1.4 Waste Refractories

Note 3:

Used or spent kiln and preheater refractories and coating and build-up can be temporarily stored in designated area on site for later reuse on site in the cement manufacturing process.

All refractory materials not suitable for reuse must not be disposed on site and must be sent to off site disposal using a licensed contractor.

Procedure

The weight of all waste refractories, coating and build-ups shall be estimated by the Production Superintendent. The Production Superintendent should then arrange for the waste refractory material to be transferred to an intermediate storage area allocated by the Production Services and Logistic Superintendent.

Waste refractory materials that are not to be processed and reused on site must be sampled prior to sending for disposal at an approved landfill site using a licensed contractor following the procedures in the Waste Regulations for the classification of the material. The samples of the materials are to be sent to a NATA approved laboratory (currently ALS) for waste classification according to the approved methods (in NSW, refer to the EPA *Waste Classification Guidelines, December 2009*).

Waste refractory materials that are to be reused are to be processed according to the procedures in the Standard Work Procedures Manual.

Responsibilities

- Environment Manager, Production Services and Logistic Superintendent – confirm that the waste refractories can be reused on site and allocate the temporary storage areas for the material or for those materials that cannot be reused, arrange for suitable disposal.
- Production Services and Logistic Superintendent – arrange for the materials to be transferred to the allocated temporary storage and for representative samples of the materials to be taken and provided to the site laboratory; estimate the tonnage of waste refractory materials sent to the temporary storage area or to off site disposal and report the tonnages to the Administration Manager each month.
- *Site Laboratory* – arrange for any samples taken to be sent to a NATA approved laboratory for waste classification; report the results of the tests to the Production Superintendent.
- *Manufacturing Analyst* – report weights monthly into the BC Sustainability Data Capture Spreadsheet for use in preparing the annual Boral Sustainability Report and for review by site management.

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1.5 Waste to Landfill

6.1.1 Hazardous Waste

Note 4:

The disposal of hazardous and other prescribed waste is not permitted at the Works. All such materials must be sent to offsite disposal in a licensed waste facility using a licensed contractor.

All hazardous wastes must be weighed out across the Work's weighbridge.

Responsibilities

- *Licensed Waste Contractor* – transfer of hazardous wastes off site in compliance with all state and federal regulations and provide the records for all transfers.
- *Production Services and Logistic Superintendent* – check and verify the details of all transfers; report the details and tonnages of each hazardous material to the Manufacturing Analyst each month.

6.1.2 General Putrescible Waste

Note 5: The disposal of putrescible waste is not permitted at the Works. All such materials must be sent offsite disposal using a licensed contractor.

All putrescible wastes must be weighed either on the Work's weighbridge or on the local tip weighbridge.

The following waste must not be deposited in these waste bins:

- asbestos and asbestos containing materials;
- liquids;
- tyres;
- chemicals;
- lead acid batteries;
- medical wastes; and
- scrap steel and other metals (these are to be placed in scrap metal bins).

Responsibilities

- *Licensed Waste Contractor* – transfer of putrescible wastes off site in compliance with all state and federal regulations; tare and gross each load of putrescible waste either using the Work's weighbridge or across the local tip weighbridge and invoicing Boral according to the local tip weighbridge.

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6.1.3 General Non-Putrescible Waste

Note 6: The disposal of general Non-Putrescible solid waste is not permitted at the Works. All general waste materials must be sent to offsite disposal using a licensed contractor.

All general non-putrescible wastes must be weighed out across the Work's weighbridge.

The following waste materials can be deposited in the general waste bins:

- ✓ glass, plastic, rubber, plasterboard, ceramics, bricks, concrete;
- ✓ paper or cardboard;
- ✓ grits and screenings that do not contain free liquids;
- ✓ garden waste;
- ✓ wood waste;
- ✓ empty containers that have been cleaned by washing or vacuuming;
- ✓ crushed drained oil filters;
- ✓ gloves, rags and oil absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids;
- ✓ drained motor oil containers that do not contain free liquids;
- ✓ synthetic fibre waste such as filter bags that are packaged securely to prevent dust emissions;
- ✓ virgin excavated natural material in small quantities (less than one Bobcat bucket);
- ✓ building and demolition waste in small quantities;
- ✓ asphalt waste in small quantities;
- ✓ cured concrete waste in small quantities;
- ✓ set thermosetting polymers and fibre reinforcing resins; and
- ✓ dried residues of resins, glues, paints, coatings and inks.

The following waste must not be deposited in these waste bins:

- asbestos and asbestos containing materials;
- liquids;
- tyres;
- chemicals;
- lead acid batteries;
- medical wastes; and
- scrap steel and other metals (these are to be placed in scrap metal bins).

HOUSEHOLD AND DOMESTIC WASTES MUST NOT BE DEPOSITED IN HERE.

Breeches of these requirements can have serious implications for the Company and will lead to serious disciplinary action which may include dismissal.

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Responsibilities

- *Licensed Waste Contractor* – transfer of general wastes off site in compliance with all state and federal regulations; tare and gross each load of general factory wastes using the assigned codes in the weighbridge system.
- *Manufacturing Analyst* – report weights monthly into the BC Sustainability Data Capture Spreadsheet for use in preparing the annual Boral Sustainability Report and for review by site management.

1.6 Waste Oils and Greases

Waste oils and greases are sent for either recycling or disposal.

Note 7:

The disposal of oils and greases is not permitted at the Works. All such materials must be sent to offsite disposal using a licensed contractor.

All waste oils and greases must be weighed out across the Work's weighbridge.

Responsibilities

- Production Services and Logistic Superintendent – notify the licensed contractor when the waste oil containers are full and require emptying or when there is an economic number of waste grease containers ready for disposal; check and verify the details of all transfers; report the details and tonnages of waste oils and greases to the Administration Manager each month.
- *Licensed Waste Contractor* – transfer of waste oils and greases of site in compliance with all state and federal regulations and provide the records for all transfers.
- *Manufacturing Analyst* - *report weights monthly into the BC Sustainability Data Capture Spreadsheet for use in preparing the annual Boral Sustainability Report and for review by site management.*

1.7 Other Wastes Recycled

Other wastes recycled typically include paper and cardboard and scrap metal.

Waste paper and cardboard is collected by a licensed contractor for recycling by an external business to manufacture paper and cardboard.

Waste steel, iron and non-ferrous metals are collected from the site by a contractor for recycling.

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Responsibilities

- *Licensed Waste Contractor* – tare and gross each load of waste using the assigned codes in the site's weighbridge system; transfer of waste oils and greases off site in compliance with all state and federal regulations; and provide the records for all transfers.
- *Manufacturing Analyst* – record the weights for use in preparing the annual Boral Sustainability Report and for review by Management.
- *Maintenance Planner* – notify the licensed contractor when the waste metal bin is full and requires emptying or when additional bins are required (as indicated by work programs).

7 IMPLEMENTATION & TRAINING REQUIREMENTS

To implement this Plan and comply with its intent, it is important that all staff are aware of the site procedures in relation to the appropriate disposal of wastes.

Staff with responsibilities in relation to waste disposal is to receive additional training to ensure that they are competent to carry out their roles.

The Environmental Business Partner and the Site Operations Manager will determine the level of training required by site personnel for any changes to this and other procedures and will develop a training program.

All training conducted will be recorded in the Training Records System.

Audits and checks will verify compliance with procedures.

8 RECORD KEEPING

The records indicated below should be captured as a minimum to provide evidence of complying with this Plan:

- Waste Register
- Records of offsite disposal.

Other documents and communications generated as part of this activity should also be captured in keeping with the **Records Information Management Business Rules** available on WizBiz.

SIMs/Sequence software is mandatory to record all spills and leaks on site, with any actions arising that are tracked until progressed and closed.

All records are to be retained for the time periods required by statutory timeframes and/or Boral policies (refer Boral Group SOP No. GRP-HSEQ-2-04-Document Control and Records Management).

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9 LEGAL REFERENCES

For the current list of Federal and State regulations relevant to this Management Plan refer to Boral Group Standard GRP-HSEQ-1-04 Legal and Other Requirements.

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WASTE REGISTER

Insert details of any waste/waste controls carried out/produced/located on site that may have an impact on the environment.

Site	Berrima Cement Works	Last Updated	May 2023

Waste	Source	Liquid / Solid / Hazardous	Storage Location	Waste Contractor	Contractor Licence Held? (Yes/No)	Waste Disposal Location	Location Licence Held? (Yes/No)	Receipts on File (Yes/No)
Oil	6 Cement Oil Bund	Liquid	6 Cement Oil Bund	Cleanaway	Yes	Offsite	Yes	Yes
General Waste	Lunchroom Amenities	Solid	15m Skip Bin North Side CCR	Cleanaway	Yes	Offsite	Yes	Yes
Cardboard	Packaging	Solid	Skip Bin North Side CCR	Wingecarribee Shire Council	Yes	Offsite	Yes	Yes
Recyclables	Lunch Room Amenities	Solid	North Side Machine Shop	Wingecarribee Shire Council	Yes	Offsite	Yes	Yes
Commercial Waste	Machine Shop	Solid	North & South Machine Shop	Cleanaway	Yes	Offsite	Yes	Yes
Oil	Machinery	Liquid	6 Raw Mill & 7 Raw Mill	Cleanaway	Yes	Offsite	Yes	Yes
Grease	Coal Mill	Liquid	West Side Loco Shed	Cleanaway	Yes	Offsite	Yes	Yes
Oil & Water	Diesel Bunds	Liquid	Diesel Bunds	Cleanaway	Yes	Offsite	Yes	Yes
Steel	Manufacturing	Solid	Scrap Yard	Ward Scrap Metal	Yes	Offsite	Yes	Yes



APPENDIX 11 WATER MANAGEMENT PLAN



Boral Cement Limited

Berrima Works

Water Management Plan (Appendix 11 of OEMP)

Document Filename:	CMT-ENV-005 Berrima Water Management Plan
Document Owner:	Operations Manager, Berrima Works
Approved By:	Operations Manager, Berrima Works

Version History:

Version	Date	By Whom	Description of Changes
1	7 October 2008	Grant Williams	Original version
2	20 September 2011	Alex Wnorowski	Global revision and formatting change
3	September 2014	Michael Curley	3-yearly review
4	March 2018	Michael Curley	Update to include new requirements from Modification 9 development consent
5	April 2020	Greg Johnson	Update to include MOD 11 and 12
6	November 2022	Greg Johnson	Update to include AKF5 tyre chip storage to support MOD15
7	29 June 2023	Sharon Makin	Update to include new requirements from Modification 15 development consent and review based on DPE and Water NSW comments
8	15 April 2025	Sharon Makin	Updated to include requirements of Mod 14 Development Consent Reviewed to include any requirements for the use of AKF1
9	23 March 2026	Sharon Makin	Reviewed against DPHI RFI. No changes

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1. PURPOSE

The objective of the Water Management Plan (the Plan) is to outline the water management system for the operation of the Berrima Cement Works (the Works) including the Kiln 6 Upgrade. The Plan addresses:

- stormwater management; and
- process water supply to the Works.

Water is an important resource for the cement manufacturing industry. It is used for process equipment cooling and in the control of emissions from the process. Water is also used for the suppression of fugitive dust emission from the site

In the past, the Works relied on the Wingecarribee River to supply process water. To improve sustainability and conserve natural resources, two large dams (Lake Breed and Lake Quality) were constructed on land adjacent to the site to collect stormwater runoff, prevent uncontrolled discharges to the environment and provide a supply of process water for use on site. There is also additional water storage capacity in the shale quarry. Construction of the two dams has enabled the Works to significantly reduce its dependence on the Wingecarribee River with daily extraction averaging approximately 0.4 – 0.6ML/day.

2. SCOPE

The objective of the Plan is to outline the water management system for the operation of the Works. The Plan addresses:

- site process water uses;
- current and alternative sources of process water;
- stormwater management and potential sources of pollutants;
- compliance with all relevant legislative requirements;
- promotion of employee and community environmental awareness;
- opportunities to reduce water consumption; and
- compliance with work health and safety requirements on the site.

This Water Management Plan (the Plan) identifies the controls and water management techniques with respect to the operation of the Works and forms part of the Operational Environmental Management Plan (OEMP). The Plan also allocates responsibilities and accountabilities for managing operational water issues.

The Plan incorporates water related conditions in the development approvals (Das) for Kiln 6 (DA No. 401-11-2002-i) and Cement Mill 7 (DA No. 85-4-2005-i), including the consolidated DA for modifications 1 to 15 to DA No. 401-11-2002- and Environment Protection License 1698 (EPL). It also includes details on the AKF5 (tyre chip) storage area, fire water detention and stormwater risks and related controls in relation to the existing site stormwater system as approved in Mod 15.

It is noted the DA and EPL do not specifically require preparation of a water management plan, however, the consent did require the preparation of a Water Supply Strategy which was prepared in 2003. This management plan incorporates findings of that original study and present day updates.

It is a requirement of Modification 14 Conditions of Consent 6.4D that..

“Prior to the commencement of operation of the site access road approved under MOD 14, the

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Applicant must review and update the Water Management Plan, a sub-plan of the OEMP required under condition 6.3 of this consent, to the satisfaction of the Planning Secretary. The updated Water Management Plan must:

- a) be prepared in consultation with Water NSW; and
- b) include a maintenance program for the stormwater quality improvement devices and drainage infrastructure along the new site access road for the life of the development.”

Version 8 (this version) of the Water Management Plan does not include the details and requirements of the water management of the site access road but is limited to a review of the Modification 14 requirements and recommencement of the use of AKF1.

A version 9 of the Water Management Plan will be prepared in consultation with Water NSW prior to the commencement of the operation of the site access road.

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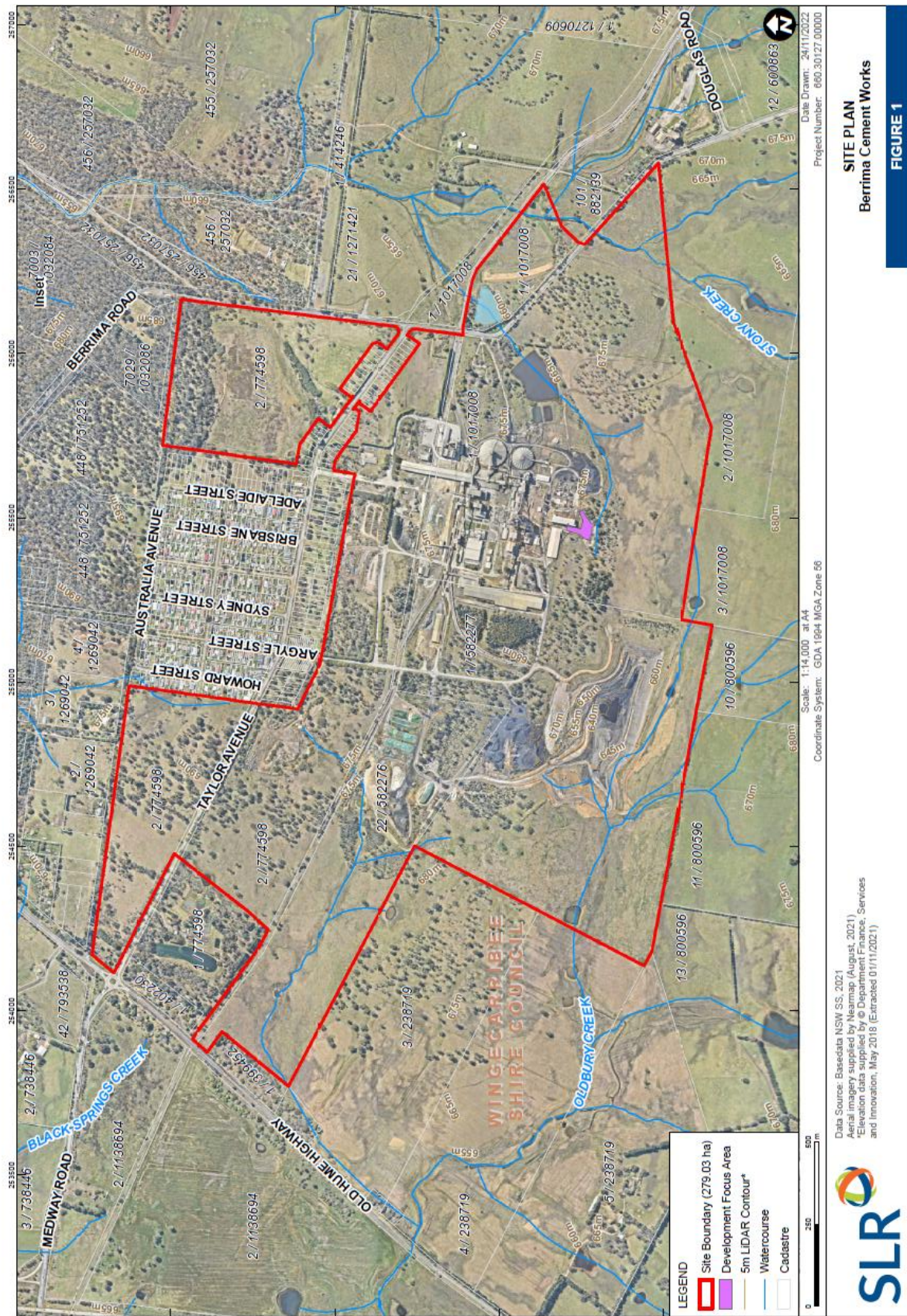


Figure 1

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3. DEFINITIONS

Table 1 Definitions

Term	Definition
DA	Development approval - a consent issued by the Department of Planning and Environment, detailing site-specific construction and operational conditions that Boral Cement must comply with
DPHI	NSW Department of Planning, Housing and Infrastructure
EMS	Environmental management system
EPL	The site-specific Environment Protection Licence (No 1698) issued and managed by the NSW Office of Environment and Heritage
EPA	NSW Environmental Protection Authority
OEMP	Operational environmental management plan
PIRMP	Pollution incident response management plan

4. RESPONSIBILITIES

The responsibilities of the personnel, including water management, are summarised Table 2.

Table 2 Responsibilities

Role	Responsibility
<i>Employees</i>	Responsible for ensuring that the environmental standards for their work are achieved. This includes: ➤ observing any environmental instructions and procedures that apply to their work or operations and products, including usage of water; ➤ taking action to halt or prevent environmental incidents; ➤ identifying and immediately reporting environmental incidents; and ➤ monitoring and controlling water discharges (if any) to keep within approved levels.
<i>Team Leaders / Front Line Supervisors</i>	Responsible for the prevention of poor environmental performance arising from work methods and the working environment. This includes: ➤ identifying, reducing and preventing environmental problems, including water usage and discharges; ➤ monitoring operations and maintenance work to ensure water discharges are maintained within approved levels; ➤ initiating action to prevent environmental incidents;

	➤ immediately reporting environmental incidents to the Operations Manager and the HSE Advisor; and ➤ initiating corrective actions to prevent similar incidents reoccurring.
<i>Production Manager</i>	Responsibility for ensuring that the environmental objectives are achieved. This includes: ➤ ensuring staff are trained and updated on environmental awareness, environmental responsibilities and procedures; ➤ ensuring environmental incidents are investigated and corrective and preventative action taken; ➤ ensuring operations comply with the conditions of site DAs, EPL and other relevant legislation; ➤ reviewing operations and implementing strategies to reduce water use from the Wingecarribee River; ➤ developing and implementing contingency plans to respond to incidents and minimise environmental harm ➤ immediately reporting environmental incidents to the Operations Manager or HSE Advisor; ➤ ensuring the proper management of waste and chemical products to ensure that they cannot contaminate stormwater runoff or affect dam water quality; and ➤ monitoring the flow of water over the Wingecarribee River weir and ceasing the recovery of water when water stops flowing over the weir.
<i>Environmental Sustainability Manager/ Environmental Business Partner</i>	Responsible for ensuring the effectiveness of the OEMP. This includes: ➤ ensuring the OEMP is established, implemented and maintained; ➤ ensuring personnel are aware of the requirements of the EPL, DAs and other regulatory documents relating to plant operation and its environmental performance; ➤ reporting on the performance of OEMP and need for improvements; ➤ reporting non-compliances with EPL, DAs and other relevant legislation requirements; ➤ immediately reporting material environmental incidents to 5 compulsory government authorities; ➤ promoting the awareness of environmental performance and requirements throughout the organisation; ➤ coordinating the auditing of the OEMP to verify the implementation of corrective and preventive actions ➤ overseeing timely and accurate collection of data, including monitoring programmes for site emissions and discharges; and ➤ reporting of emission data and environmental performance results.

	➤ monitoring and ensuring compliance with the procedures;
<i>Business Analyst</i>	Responsibility for ensuring the recording and reporting of site water use. This includes: ➤ establishing procedures for the recording of site water use and water sources; and ➤ reporting water use for management review.
<i>Site Operations Manager</i>	Responsible for ensuring the operation of the Works' environmental management system. This includes: ➤ implementing Boral Cement environmental policy on site; ➤ ensuring site environment performance objectives and targets are established, monitored and achieved; ➤ defining responsibilities for the OEMP; ➤ ensuring the availability of resources; ➤ communicating the importance of the OEMP and meeting the statutory and regulatory requirements; ➤ conducting management reviews of the OEMP; ➤ ensuring that material environmental incidents are immediately reported to 5 compulsory government authorities; ➤ verifying the implementation of corrective and preventive actions; and ➤ recognising and responding to community concerns.

5. Site Operations and potential impacts on water quality

Cement is produced at the Works by the dry process in No. 6 Kiln (see Figure 2 for process schematics). The sequence of operations at the Works with respect to their water quality impact potential is described in Table 3.

Table 3 Sequence of operations

Operation	Description	Potential for Water Impact
Unloading of limestone	Limestone/limestone-yellow shale mixture from Marulan Limestone Mine is transported to the works by rail. The limestone is unloaded and taken by conveyor belt to the preblend heaps. The conveying system is enclosed and the transfer points are fitted with dust collection systems.	Minor
Quarrying	Blue shale is excavated using a bulldozer.	Minor Surface Water Held in Pit

**BERRIMA WORKS
WATER MANAGEMENT PLAN**



Operation	Description	Potential for Water Impact
Additive raw material delivery, storage and transfer	The additive materials such as blue shale, yellow shale, iron source materials and gypsum for cement production are delivered to the works by road. They are stockpiled on site in open stockpiles and/or on the Shale Pad. The various materials are transferred to the Shale Pad or Shale Crusher by road transport and/or front end loaders. The Shale Pad area is bunded and covered. The area is swept to remove spilt material.	Minor
Coal delivery and storage	Raw coal is delivered by road and unloaded through a hopper for transfer to the raw coal blending system. When coal shed is full, excess coal is stored in an open stockpile. The raw coal is wet and the transfer system and coal blending is enclosed.	Minor Stormwater Drainage on side of the roadways Stormwater captured at the edge of stockpiles
Diesel and AKF1	Fuels delivered to site in appropriate tankers and unloading in bunded areas direct to storage tanks before being pumped to operations as required.	Potential for leaks/spills however fuels are contained in bunded areas. Pipework, tanks and bunding inspected on a routine basis and maintained as required
SWDF storage, handling and feeding system	SWDF delivered to site in covered vehicles to designated storage building.	Minor stormwater
AKF5 (tyre chip) storage	AKF5 (Tyre Chips) are stored within six external bunkers behind the SWDF shed. Storage capacity is limited to 75t, which is 1-2 days of supply. Tyre chips are delivered and stored within the toe of the bunkers. High turnover of product limits any extended	Minor AKF5 tarped if not in use greater than 14 days. Stormwater directed via Fire water bund

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Operation	Description	Potential for Water Impact
	contact time with waters and leachate risks. Size and weight of chips do not lend themselves to migrate within stormwater during rain events.	within storage area Overflow or stormwater dewatering directed to main site settling ponds via swale prior to entering Lake Breed then Lake Quality
Additive raw material crushing	The additive materials, blue shale, yellow shale, iron source materials are crushed in the Shale Crusher and transferred to the Proportioning Bins.	Minor
Preblending	The limestone from rail deliveries is laid down in a series of windrows on the preblend heap. These windrows form layers that help to reduce the effect of any variations in the limestone quality. One heap is being built while the other is being reclaimed. The operation is contained in a building.	None Stormwater does not have access
Reclaiming	The preblend heaps are reclaimed by the reclaimer. The reclaimer scrapes limestone from the face of the heap across all the layers laid down during the build of the heap. This further reduces any effects of variation in limestone quality. The operation is contained in a building.	None Stormwater does not have access
Proportioning of raw materials	During the reclaiming of the limestone from the preblend heap the other raw materials are added from bins in careful controlled proportions to adjust the chemistry of the mixture to ensure that the finished clinker will have the right quality. The operation is contained in a building.	None Stormwater does not have access
Grinding of raw materials	The mixture of raw materials is ground up finely in the raw mills to make raw meal. Hot air from the kiln is drawn through the mills to dry the raw materials. The raw milling is to help the raw materials mix properly and make the mixture easy to burn in the kiln.	None Stormwater does not have access

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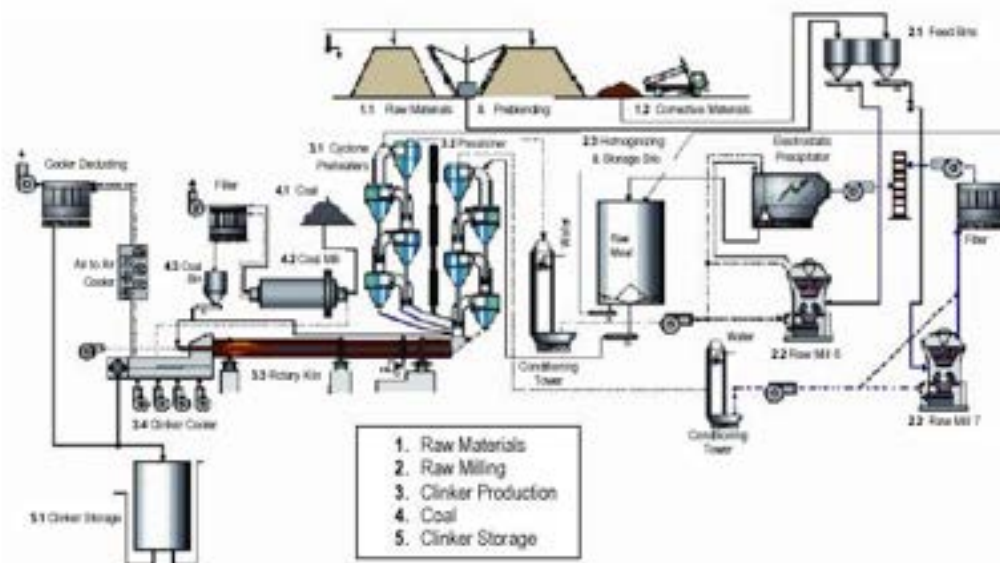
Operation	Description	Potential for Water Impact
	The operation is contained in a building.	
Homogenising	The raw meal is stored in the homogenising silo. The homogenising silo mixes the raw meal, reducing any variations in the chemistry raw meal.	None Stormwater does not have access
Burning	The raw meal is fed to the preheater tower. As the raw meal is heated in the preheater tower and kiln, carbon dioxide (CO₂) is liberated from the limestone. In the hottest part of the kiln, the burning zone, chemical reactions take place, which convert the raw meal into “clinker”. Hot gases from the preheater system are quenched in the conditioning towers and then used to dry the raw materials in the raw mills. The gases from the raw mills are de-dusted in either an electrostatic precipitator or bag filter.	Potential for leaks/spills of production water a requirement for effective maintenance systems is required, this is completed by the onsite maintenance team.
Cooling	The hot clinker that is formed in pieces about the size of large marbles is passed through the cooler where air cools the clinker. The hot air from the cooler is recycled to burn the fuel in the kiln. This helps reduce the amount of fuel needed. Excess cooling air is cooled in an air-to-air heat exchanger then de-dusted in a bag filter.	Potential for leaks/spills of production water a requirement for effective maintenance systems is required, this is completed by the onsite maintenance team..
Clinker transfer to storage	Clinker is transferred from the clinker cooler to storage in bucket conveyors. The transfer system is enclosed.	None
Clinker storage	Clinker is tipped from the bucket conveyor to the storage areas, the Mole or the A Frame.	None

BERRIMA WORKS WATER MANAGEMENT PLAN



Operation	Description	Potential for Water Impact
Clinker transfer to milling/despatch	Clinker from Mole and A Frame are transferred to the cement mill feed hoppers or the clinker despatch silo by a conveyor system. The transfer system is enclosed The road despatch silo is fitted with a telescopic chute.	None
Clinker despatch	Clinker is stored in the despatch silo prior to loading and despatch. Clinker is despatched by road trucks or by rail bulk wagons.	None
Finished cement grinding	The cooled clinker together with a small amount of gypsum to control how fast the cement sets is ground in the cement mills to make the finished product cement. Other additives can be mixed with the clinker to make different types of cement.	None
Cement storage and despatch	The ground cement is stored in silos until required by our customers. Cement is despatched by road bulk trucks or by rail bulk wagons to other despatch depots.	None.

Production of Clinker by the DRY Process



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Figure 2 Clinker Manufacturing Process

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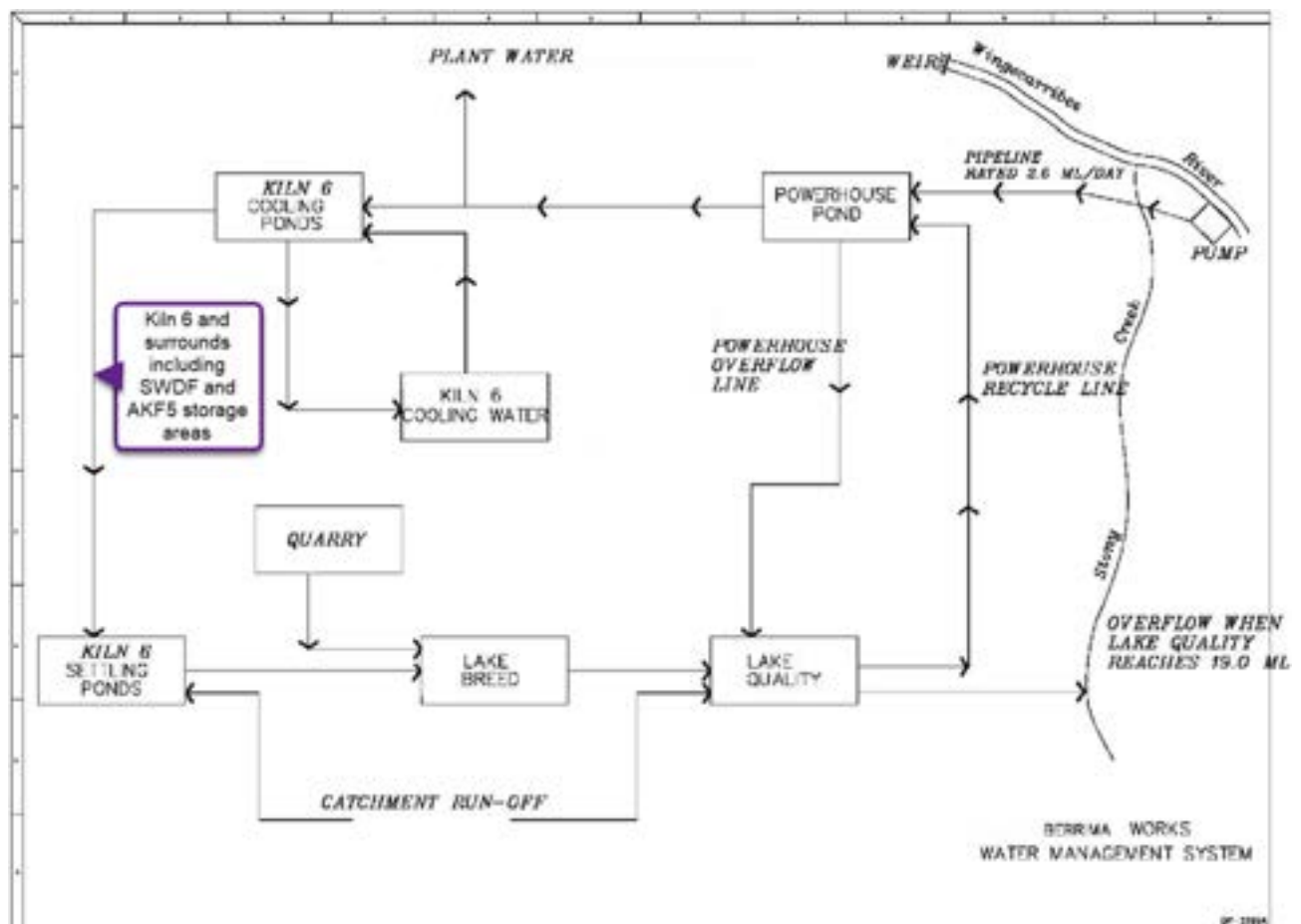
6. SITE WATER USAGE

Water for process use is pumped from Lake Quality to the Power House Pond. Water is treated using a commercial biocide before being pumped into the Works water circuit. The water supply and circulation system are shown in Figure 3.

The treated process water is used for:

- process cooling water – to maintain the operating temperatures of the process equipment;
- conditioning tower – humidification of the process gasses and dusts is critical to ensure the efficient operation of the electrostatic precipitators. This humidification is normally achieved with water drawn off the drying of the raw materials in the raw mills. When the raw mills are off, the water must be replaced and the conditioning tower performs this function;
- cooling water – the process gasses must also be cooled to improve the efficiency of the dust collection in the electrostatic precipitators and protect the bag filter; and
- fugitive dust emission control – water is used to water roads, the site shale quarry and stockpiles to assist in the control of fugitive dust emissions.

Figure 3 The Works' Water Supply and Utilisation



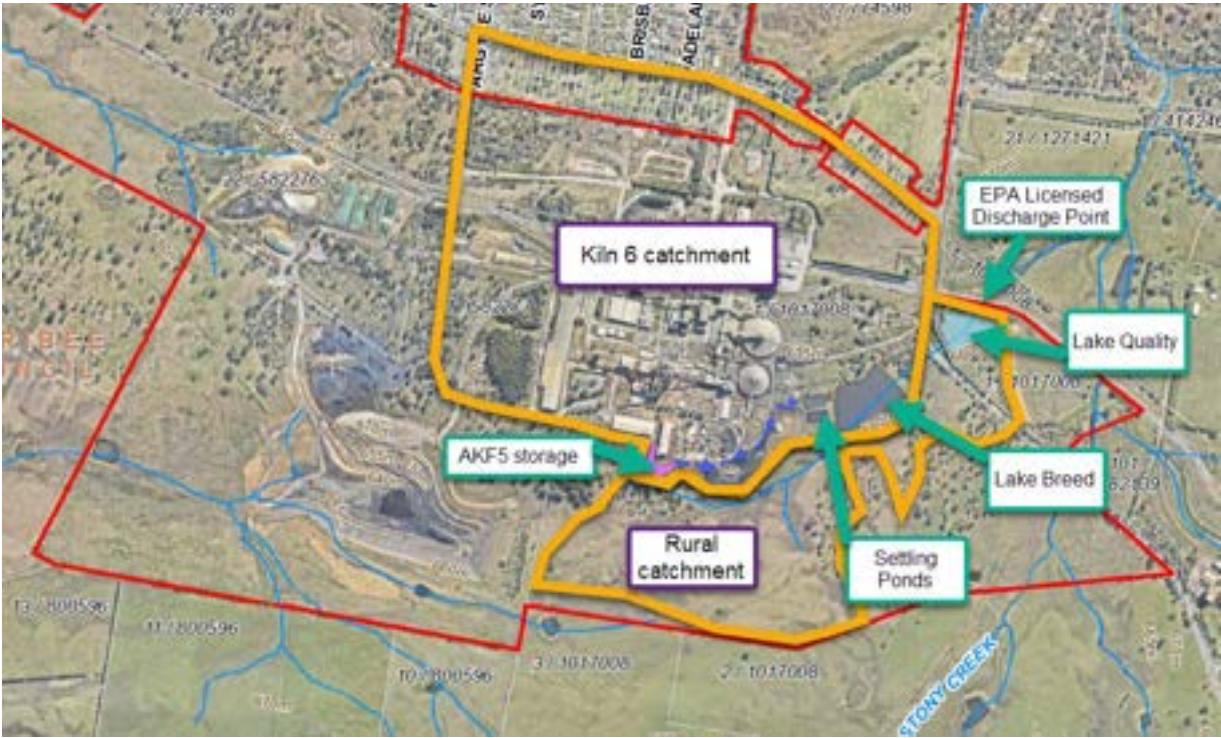


Figure 4 – Kiln 6 Stormwater Catchments

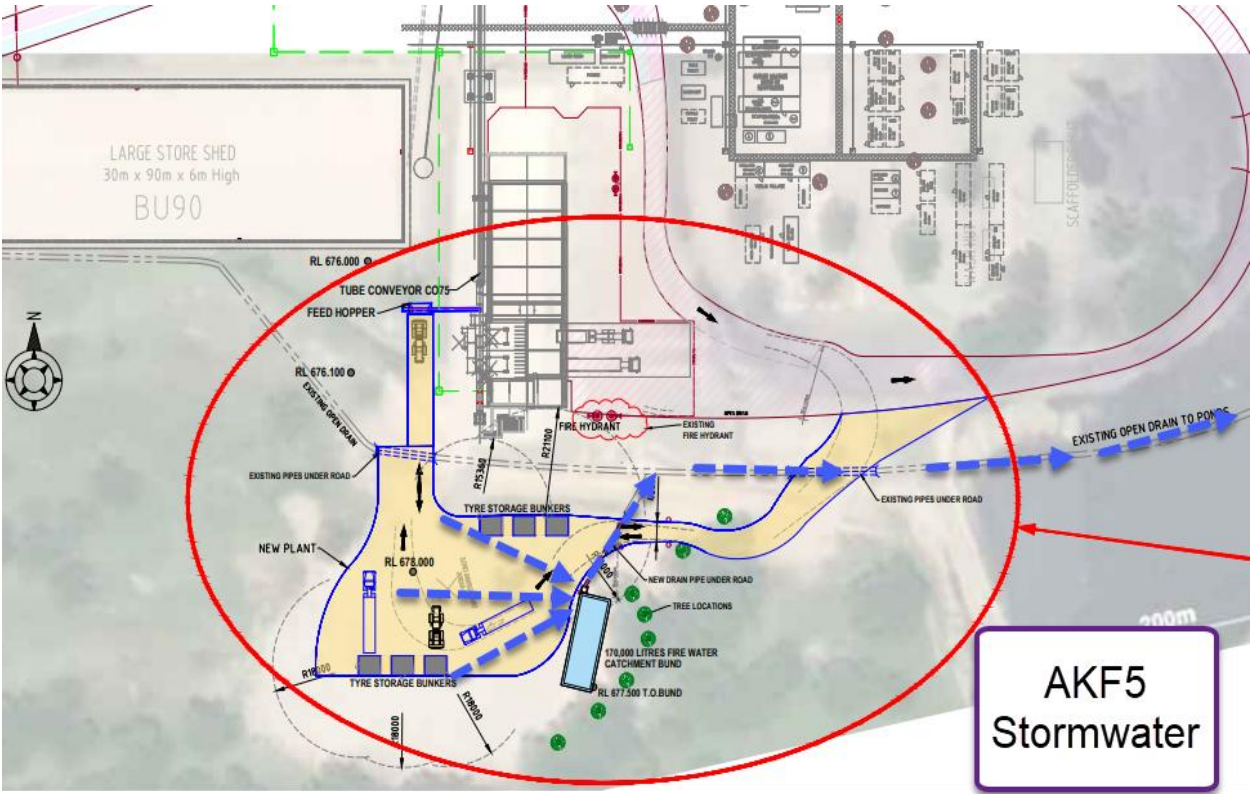


Figure 5 – AKF5 storage area and stormwater flow

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7. PROCESS WATER SOURCES

7.1 Current sources of process water

Process water requirements are currently drawn from stormwater which is collected from the local catchment including Boral owned rural land to the south of the plant and the kiln production area (see figure 4) and stored in the two settlement dams, Lake Breed and Lake Quality. The capacities on the dams are 15 ML and 19 ML respectively. Stormwater collected within the Shale quarry is pumped into Lake Breed. Water from Lake Breed is pumped, or overflows in elevated rain events into Lake Quality, treated with biocides and used in production processes. During period of high rain events water will overflow via Lake Quality (EPA Licensed Point) into Stoney Creek

During periods of low onsite rainfall when the onsite dam levels are low, process water supplies are pumped from the Wingecarribee River under Water Access License 25452 (provided water is flowing over the weir).

In the event that onsite water has been depleted and water from the river is unavailable due to low flows, while not ideal, water can be sourced offsite via trucking water from the Council water supply or a licensed provider.

7.2 Alternative Sources of Process Water

Historically, the cement works has depended on water supply from the Wingecarribee River due to the wet process technology within the former kilns onsite. However, with the use of the dry process technology within kiln 6 and the construction of on-site water storage dams, this dependency has been reduced.

The company has investigated the use of alternative sources of process water to further reduce the dependence on water sourced from the Wingecarribee River. The investigations identified three potential sources:

1. treated wastewater from Bowral sewage treatment plant – this source was deemed sufficient to meet the Works' water requirements however quality and logistics in sending to site is uneconomical;
2. treated wastewater from Berrima sewage treatment plant – this source was deemed insufficient to meet Works' water requirements regarding available volume and quality; and
3. water from the Medway (Berrima) Colliery – this source was deemed sufficient to meet Works' water requirements.

Engineering studies, including budget cost estimates, have been completed for each.

There is significant potential for the Medway (Berrima) Colliery water to be supplied to the site. Boral holds a Water Access Licence with an annual volume of 1400ML available. Boral also owns a former rail corridor from the mine to the Works which could be used to pipe the water.

The Colliery EPL 608 has an Environmental Improvement Program to assess the installation of a pit top treatment facility and pipeline to the Cement works. Subject to EPA approval, capital approvals and capital availability there is potential for the installation of the pipeline in the medium term.

8. STORMWATER MANAGEMENT

All stormwater from the existing kiln 6 and milling operational areas (approximately 240,000m²),

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which includes management areas for AKF1 and SWDFs are collected and either discharged directly into Lake Quality or for dirtier stormwaters and process waters with potentially high silt loads from the Kiln 6 area, including the AKF5 storage overflow waters, are directed to the settling ponds prior to overflowing into Lake Breed. Water from Lake Breed is pumped into Lake Quality or overflows during high rainfall. See Figure 3 for site catchment details.,

During normal operation, the water in Lake Quality is used for process water and there is no discharge into Stony Creek.

During periods of low onsite rainfall, water captured in the shale quarry is pumped into Lake Breed to top of the system.

During periods of high rainfall Lake Quality may fill and overflow into Stony Creek via an Environmental Protection Licensed discharge point (EPA ID No.9).

Water levels in the dams are monitored electronically and used to determine when a discharge to the water course occurs.

- The main sources of potential contamination of the stormwater on the site include:
- Suspended Solids (sediment/particulate matter) contamination in the stormwater runoff from the site;
- oil and other liquid contamination due to spills and leaks; and
- process wastewater.

Suspended solids are minimised by regular and routine site cleaning and directing stockpile and process area stormwater via the settling ponds and weirs prior to overflowing into Lake Breed. Existing emergency procedures are used to contain and clean up oil and other liquid spills and leaks.

Discharge water quality monitoring is undertaken as per EPL 1693 at license point 9 (see section 10.2)

8.1 AKF5 (Tyre Chip Storage)

The AKF5 (tyre chip) storage area (approximately 1,950m²) is generally flat and constructed with a stabilized virgin DGB20 roadbase. The area slightly slopes towards the northeast and makes up less than 1% of the operational catchment.

Onsite storage within the bunkers is limited to 75t at anytime, accounting to approximately 1-2 days worth of operational requirements. Tyre chips will be stored within the toe of the concrete bunkers and spillage in the handling areas cleaned regularly. The bunkers are roofed to prevent stormwater ingress to the stockpiles.

During extended periods (i.e. greater than 14 days) when the kiln is not in use and does not require AKF5 fuel, any remaining AKF5 stored within the Bunkers will be tarped.

Given the size and weight of the tyre chips (30mm-50mm), experience during trials has shown that the tyre chips do not migrate or move during rain events. This limits the ability of the material to enter the stormwater system and prolonged contact with waters. Given the high turn-over of the tyre chips there is also limited ability of any leaching from the fuel into stormwaters. However, material will be tarped should a significant rain event be forecasted and the risk of runoff be determined.

As required by the Fire and Rescue NSW Guideline for bulk storage of rubber tyres, the AKF5 storage area is to have a waste fire water bunded basin with a capacity of at least 170,000L (i.e. equivalent of 3 fire hydrants X 10L/Sec for 90 min),. In event of a fire, any residual fire waters within the bund will be removed via a licensed waste removal company, such as Cleanaway.

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While not designed primarily as stormwater containment, the fire water basin system has been designed with a capacity of 170,00L which would more than handle a 5-day 95% 72.5mm rain event for Mittagong ($1950\text{m}^2 \times 0.0752 = 146.64\text{m}^3$ or 146,640L). The basin will assist in slowing waters and reducing and settling sediments before entering the existing swale and water management system i.e. the settling ponds and storage lakes. There is also a wedge pit/pit prior to the fire water basin which assists with containing debris run-off before entering the basin. This will be cleaned out on an as needs basis.

After rain events, any residual waters within the fire water basin will be dewatered within 5 days of the end of a rain event via the existing swale and existing water management system to ensure adequate capacity is maintained within the basin.

8.2 Site Access Road

Modification 14 proposed the installation and operation of a new site access road to the west of the Cement operations as shown in Figure 6 below.



Figure 6 New Site Access road (yet to be constructed).

Prior to the use of the road, this Water Management Plan is to be updated in consultation with Water NSW and approved by the Planning Secretary.

The Plan will include the details of the stormwater quality improvement devices and drainage infrastructure including a maintenance program.

The details of the Water Course crossing associated with the road will also be included such that it meets the **the Department's Fact Sheet Controlled Activities – Guidelines for watercourse crossings on waterfront land (2022)** and the design in the **Roadworks and Drainage Layout Plan – Sheet 3** prepared by SLR dated 20 February 2023, Revision P3, Drawing Number 660.30247-CI-1103 as per Condition 3.14A of the consent.

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9. ENVIRONMENTAL MANAGEMENT

Spill prevention and sediment control during any construction activities on site will be managed in accordance with the Boral Cement Pollution Incident Response Management Plan (PIRMP) and the SOP CEM-ENV-014 Spill Prevention and Control. Spill prevention equipment and measures aim to eliminate or reduce the probability of spills occurring and reduce the degree of damage that could occur to the surrounding environment. In places or situations where a spill risk exists, the following measures will be implemented:

- placement of spill-risk facilities away from sensitive environments (sufficient to allow for effective intervention prior to pollution occurring in the event of a spill);
- use of secondary spill containment facilities such as bunding around all storage tanks and other areas where hazardous substances are stored;
- ensuring risky activities such as tank loading are undertaken on bunded, hardstand areas;
- avoiding risky activities at times when weather events may magnify the harm caused by a spill;
- ensuring drainage structures can be sealed to halt passage of spill fluids; and
 - training of employees and contractors in good environmental practice.

The site utilizes universal spill kit wheelie bins that are audited and stocked regularly by a specialised local supplier (see Appendix 2 of emergency response plan for locations). Spill kits are registered and mapped; personnel are trained in the proper use of spill kits. The site's hazardous substances storage areas, oil and fuel storage tanks, bunds and compounds comply with the requirements of Australian Standard AS 1940:2004.

10. MONITORING

10.1 Method

All sampling and monitoring is undertaken in accordance with the relevant Australian Standards:

- AS/NZS 5667.1:1998 Water Quality — Sampling — Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples;
- AS/NZS 5667.10:1998 Water Quality — Sampling — Guidance on sampling of waste waters; and
- Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales.

Sampling is undertaken by a trained person (a technician from the ALS laboratory). The samples are analysed by a laboratory (ALS) NATA accredited to carry out the tests required.

10.2 Monitoring Schedule

10.2.1 Monthly and Quarterly Monitoring

For process quality purposes the water in Lake Breed and Lake Quality are generally sampled

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and tested monthly with the water in the Wingecarribee River sampled and tested three monthly (there are no DA or EPL requirements for this testing). Tested parameters are:

- biological oxygen demand (BOD);
- oil and grease;
- total suspended solids;
- pH;
- oxygen demand (COD);
- total phosphorus;
- metals (aluminum, barium, calcium, copper, lead, magnesium, manganese, nickel, potassium, sodium, total iron, zinc);
- boron;
- chloride;
- cyanide;
- fluoride;
- sulphate; and
- total coliforms, thermotolerant (faecal) coliforms, enterococcus.

10.2.2 Overflow Monitoring

Water quality is monitored with Grab samples being taken at EPL Monitoring Point 9 in accordance with Condition M2.3 of the EPL during discharges from Lake Quality to Stony Creek. The water is tested for:

- biochemical oxygen demand (BOD);
- oil and grease;
- total suspended solids; and
- pH.

As per requirements of the NSW *Protection of Environment Legislation Amendment Act 2011* (POELA) Act, the site is obliged to publish on the Work's webpage the monitoring data that are required by the EPL. The summary report is updated each month with all new results received in the preceding month with an aim to upload by the 10th working day of the next month. The summary report is updated with sampling data the month after there is an overflow from Lake Quality.

<https://www.boral.com.au/what-we-do/environmental-reporting>

11. IMPLEMENTATION AND TRAINING

Boral Cement is committed to ensuring our employees are aware of potential environmental impact of its operations. All employees are trained in environmental awareness.

Through delivery of an appropriate training program, staff will understand the following issues:

- the potential for emissions/discharges from the various operations and the relevant operating and licence limits;
- process water requirements and need for consumption reductions;
- the control technologies used to minimise potential for contamination of stormwater;
- action to be taken when Lake Quality discharges to the environment as per licence requirements; and
- the cleanup and notification procedures if water pollution occurs.

Further information can be found in the Boral Cement's Corporate SOP No. **CEM-ENV-005**

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Environmental Training.

12. REPORTING AND RECORD KEEPING

12.1 Incident Reporting

Incidents and non-conformances are managed in accordance with the emergency plan and pollution incident response management plan (attached to the OEMP) and safety management system (the system is on the Boral Cement intranet). See Section 6 of OEMP.

12.2 Pollution complaints

Boral Cement will record water pollution related complaints in accordance with Condition M6 of the EPL and the complaints and dispute resolution procedure in Section 5.3 of the OEMP.

12.3 Annual Reporting

Boral Cement has various reporting and record keeping requirements defined in the DAs and the EPL. Condition 7.3 of the MOD 15 consent requires preparation of an annual environmental management report (AEMR) and Condition R1 of the EPL requires preparation of an annual return. Refer to sections 5.2.1 and 5.2.2 of the OEMP for details.

12.4 Record Keeping

Record keeping is undertaken in accordance with Site Procedure **SP05-01-01 Document Control – Electronic Data**.

- Boral Cement maintains a document storage system named WizBiz to facilitate effective management and document control over controlled documents.
- Sequence software is mandatory to record all incidents on site, with any actions arising that are tracked until progressed and closed.

All records are to be retained for the time periods required by statutory timeframes and/or Boral policies (refer Boral Group SOP No **GRP-OHS-007 Document Control and Records Management**).

13. LEGAL REFERENCES

For the current list of Federal and State legislation relevant to this Management Plan refer to Boral Cement's Corporate SOP No. **CEM-ENV-004 Environmental Legal Requirements**.

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APPENDIX 12 ESIP

Boral Berrima Cement Works

EMERGENCY SERVICES

INFORMATION PACKAGE (ESIP)

IMPORTANT INFORMATION

DO NOT REMOVE FROM

Berrima Control Room

TITLE PAGE

Premises address - *Taylor Avenue, New Berrima, NSW, 2577*

Head office address - *Level 3, Trinita 2, 39 Delhi Road, North Ryde, NSW, 2113*

Premises geocode (GPS co-ordinates) –

Lat: -34.510301, Long: 150.335997

SafeWork NSW reference number – *Not applicable*

EMERGENCY CONTACT DETAILS

Name	Position	After Hours Phone Number
Berrima Control Room	Shift Superintendent	02 4860 2200
Waqas Ali	Site Manager	0401 899 099

PREMISES OVERVIEW

Boral Cement Limited (Boral Cement) operates an integrated clinker and cement manufacturing operation at the Berrima Cement Works.

The facility is located south of New Berrima in the Southern Highlands of NSW in the Wingecarribee LGA. Access is via Taylor Avenue, which connects the facility with the Hume Highway, approximately 2.5km to the west.

The facility is located on approximately 135ha of Boral owned land. The area to the south east of the Cement Works between New Berrima and Moss Vale is part of the Moss Vale Enterprise Corridor (MVEC) set aside for employment generating development under the *Wingecarribee Local Environmental Plan 2010* (Wingecarribee LEP).

The closest residential zone to the works site is located to the north of the operations in New Berrima. The New Berrima residential area is flanked to the south and east by “Private Recreation” areas.

Boral Cement uses a dry process in the manufacture of clinker which is a continuous process day and night.

Specifically in the Tyre Chip area, there will be two to three people associated with the delivery and movement of the tyre chips.

AKF5 Tyre chips are used on site and have been identified as having a potential fire risk. The Tyre Chip Storage area is an open air, ground level facility.

Boral Cement also use other Solid Waste Derived Fuels (SWDFs). Modification 14 approves the construction of additional SWDF storage facilities and requires an update of the ESIP prior to operation of the facilities in consultation with FRNSW as per Condition 6.4E. An update of the ESIP will be undertaken once construction of the storage facilities is planned.

Furthermore, Boral Cement proposed to recommence the use of AKF1 fuel with a Fire Safety Study of the AKF1 storage facilities undertaken, reviewed and approved by NSW Fire Services in March 2026. A number of items were recommended. These have been implemented.

The ESIP has been reviewed in line with the Fire Safety Study. No changes have been required to the document.

This ESIP has been developed to outline the management of such an incident should it occur.

Site Layout and Emergency Response details



CONTACT LIST

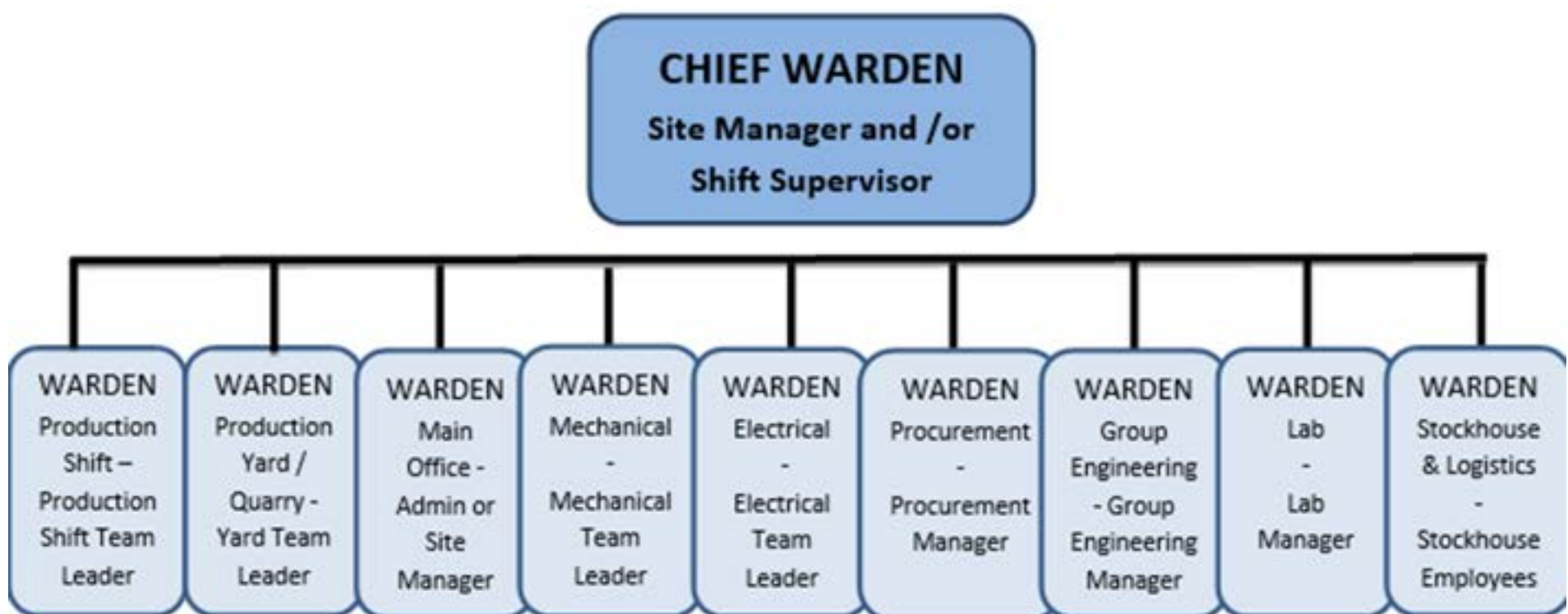
Main Control Staff and Wardens

Office Hours 8.00am to 4.00pm

Contact Number: (02)4860 2222

After Hours Contact Number: (02)4860 2262

A number of wardens have been allocated for the site.



Emergency Appointment	Emergency Control Organisation (ECO)	Stand-in Control Staff (if ECO absent)
Chief Warden Main contact for Tyre fire incident	Shift Superintendent Ext: 253/262 Phone: (02) 4860 2262 Radio channel 1	N/A – Always a Shift Superintendent on site
Communications Officer	Process Controller Ext: 200 Phone: (02) 4860 2262 Radio channel 1	N/A – Always a Process Controller on site
Production Shift Warden	Radio Channel 1	
Production Yard / Quarry Warden	Quarry UHF 11 or Radio Channel 1 Yard Radio Channel 2	
Main Office Warden	Site Manager – 0401 896 979	Admin – (02) 4860 2212
Mechanical Warden	Radio Channel 2	
Electrical Warden	Radio Channel 1	
Procurement Warden	Radio Channel 1	
Group Engineering Warden	Jonathan Charlesworth – 0401 895 589	Ian Johnson – 0401 893 356 David Spears – 0401 897 087
Lab Warden	Technical Services Manager - 0401 893 369	Quality Control Manager - 0401896428
Stockhouse & Logistics Warden	Stockhouse – (02) 4860 2340	

EVACUATION OVERVIEW

Fire and Smoke –The Action Plan is as per the Berrima Cement Emergency response plan, incorporating the Tyre Chip Storage Area.

If staff or contractors discover fire or smoke on site, then follow the steps below immediately.

Step 1: Activate the nearest emergency alarm. Advise the Chief Warden / Control Room immediately of the fire or smoke and its location on the site.

Step 2: People in immediate danger are to make their way to Safe Assembly Area.

Step 3: The Chief Warden will assess the situation and, if deemed appropriate, evacuate the site and notify emergency services.

For Evacuation

The Control Room will use the Public Address (PA) system and radio to alert all workers and visitors of the evacuation. Area Wardens will instruct all personnel to EVACUATE.

The Tyre Chip Area will evacuate to the closest area.

Step 4: Wardens must ensure that the evacuation area is free of all personnel.

If safe to do so, Wardens will switch off power to machines and other equipment, and close doors. Do not turn off the lights. If safe to do so, the fire may be extinguished.

Step 5: For evacuation, all personnel – with the exception of Shift-work personnel who report directly to the Chief Warden - must assemble at the designated Assembly Points (see Site Map) and remain with the Warden at all times.

Step 6: Each Warden will ensure a roll call is conducted to account for all workers and visitors. Report back to Chief Warden.

Step 7: First Aid Attendants will treat any injured personnel at the Assembly Point.

Step 8: Await further instructions.

Evacuation All-Clear

Entry or re-entry is strictly forbidden until authorised by the Officer-in-Charge of the attending emergency authority. If no emergency authority is in attendance, entry or re-entry is forbidden until the Chief Warden gives the all clear and the Site/Operations Manager authorises re-entry.

TACTICAL CHECK LIST

Contents	Tyre chips
Storage	12.5 tonnes per bunker (6 x 20m2 bunkers)
Fire System	Manual application from identified Water Hydrants

Steps	Description of Task	Done
1	In the event of a fire, alarm will be raised to the Berrima Control Room	☐
2	The Chief Warden will assess the situation and, if deemed appropriate, evacuate the site and notify emergency services	☐
3	The Chief Warden will activate emergency procedures as per the Berrima Emergency response Plan	☐
4	Nominated Berrima employee to meet firefighters at the main plan entrance and escort emergency services to the tyre storage area	☐
5	The Chief Warden to send a fire pump and valve operator from the CCR shift and any other resources to the storage area	☐
6	The Chief Warden established an exclusion zone around the area	☐
7	The Chief Warden will arrange for all feed conveyors from the Trye storage area to the kiln to be stopped and isolated	☐
8	On arrival of Emergency services to the site, The Chief Warden will hand the situation over to the Chief Fire Officer on arrival and advise of: - Any unaccounted-for personal and - The latest situation and actions taken	☐
9	Water supply and hydrants accessed by Fire Fighters who commence operations within the storage area.	☐

For details of the suppression systems refer to the “Alternative Solution Summary”.

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HAZARDOUS CHEMICALS MANIFEST

The Hazardous and Dangerous Goods Register is located in the CCR outside the Small Conference Room.

Product/ Chemical Name	Maximum Quantity Stored	Location where the Product is Stored/Used	Storage Type	Is the Chemical a Dangerous Good? (Y/N)	Is the Chemical a Hazardous Substance? (Y/N)
Kiln Fuel – Diesel	55000L	Tank No. SS60	Tank	N	Y
Kiln Fuel – Diesel	55000L	Tank No. SS61	Tank	N	Y
Diesel	60000L	AKF1 - SS63	Tank	N	Y
Diesel	22000L	AKF1 - SS64	Tank	N	Y
Diesel Fuel	25000L	Tank No. SS70	Tank	N	Y
Diesel Fuel	25000L	Tank No. SS71	Tank	N	Y
LPG	2500L	Depot 2	Tank	Y	Y
LPG	4500KG	Depot 2	Tank	Y	Y
Acetylene	1000KG	Gas Store	Bottles	Y	Y
Oxygen	2500KG	Gas Store	Bottles	Y	Y
Hydrogen	250KG	Gas Store	Gas bottles	Y	Y
LPG	330KG	Gas Store	Gas bottles	Y	Y
Hydrochloric Acid (30%)	30L	Laboratory	Bottles	Y	Y
Ethanol	100L	Laboratory	Bottles	Y	Y
Methanol	100L	Laboratory	Bottles	Y	Y
Kerosene	10L	Laboratory	Bottles	Y	Y
Acetone	20L	Laboratory	Bottles	Y	Y
Grinding Aid	5000L	Cement Mill 6	Tank	N	Y
Grinding Aid	5000L	Cement Mill 7	Tank	N	Y
Hydrochloric Acid (30%)	1000L	Powerhouse pond	Tank	Y	Y
Hydrochloric Acid (30%)	1000L	Hotwells	Tank	Y	Y
CALTEX DELO 400 SAE 15W/40	410L	Loco Shed	Drum	N	N
CALTEX RANDO HD 68	410L	Loco Shed	Drum	N	N
CALTEX 85W-140 Gear Oil	205L	Loco Shed	Drum	N	N
CALTEX 80W-90 Gear Oil	205L	Loco Shed	Drum	N	Y
Caltex Safe Degrease	205L	Loco Shed	Drum	Y	Y
Waste Oil	1000L	Loco Shed	ISO Container	Y	Y

Product/ Chemical Name	Maximum Quantity Stored	Location where the Product is Stored/Used	Storage Type	Is the Chemical a Dangerous Good? (Y/N)	Is the Chemical a Hazardous Substance? (Y/N)
CALTEX DELO 50/50 Coolant	205L	Loco Shed	Drum	N	Y
Hydrogen	156KG	Preheater L6	Bottles	Y	Y
CALTEX DELO GREASE EP 2	40KG	OIL STORE	Drum	N	N
CALTEX EP GREASE C 3	40KG	OIL STORE	Drum	N	N
CALTEX MINE GREASE PREMIUM 2	180KG	OIL STORE	Drum	N	N
CALTEX RANDO HD 32	205L	OIL STORE	Drum	N	N
CALTEX TEXTRAN TDH PREMIUM	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 320	205L	OIL STORE	Drum	N	N
CALTEX TRANSFORMER OIL BSI INHBITED	205L	OIL STORE	Drum	N	N
CALTEX DELO 400 SAE 15W/40	205L	OIL STORE	Drum	N	N
CALTEX TORQUE FLUID 434	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 460	205L	OIL STORE	Drum	N	N
CALTEX RANDO HD 32	205L	OIL STORE	Drum	N	N
CALTEX RANDO HD 68	205L	OIL STORE	Drum	N	N
CALTEX RANDO HD 150	205L	OIL STORE	Drum	N	N
CALTEX MEROPA 320	205L	OIL STORE	Drum	N	N
CALTEX MEROPA SYNTHETIC EP 320	205L	OIL STORE	Drum	N	N
CALTEX TEXAMATIC 1888	205	OIL STORE	Drum	N	N
CALTEX SAFE-D- GREASE QB	205L	OIL STORE	Drum	N	Y
CALTEX KEROSENE	200L	OIL STORE	Drum	Y	Y
CALTEX HAVOLINE FULLY SYNTHETIC 5W/40	205L	OIL STORE	Drum	N	N
Transformer Oils – Refer to Transformer Register	765 to 7400L	Various	Transformers	Various	Various
SWDF	900T	SWDF Store	Enclosed shed	N	N
AKF5 Tyre chips	75 T	Tyre Storge area	bunkers	N	N

LOCATION OF HAZARDOUS SUBSTANCES STORAGE



ALTERNATIVE SOLUTION SUMMARY

- Tyre Chip Storage Area

Berrima Cement use Solid waste Alternative fuels in the operation of the kiln.

This includes AKF5 Tyre chips (used and unwanted tyres). As such, a dedicated storage area is in place for the management of the tyre chips.

According to research, the tyre material is difficult to ignite (ignition temperature of tyres is approximately 300–350 °C), but once a tyre fire starts, it is generally burns with increasing intensity and is very difficult to control and extinguish given rubber naturally repels water. The standard fire brigade fire suppression tactics using water and/or foam is often futile when it is applied to a tyre fire.

Water is best used to keep adjacent, unburned tyres from igniting.

Due to the burning characteristics of tyre fires, FRNSW have provided a guideline for bulk storage of rubber tyres or related subsidiary products. The guideline identifies maximum stack sizes and minimum separation distances between tyre storage areas to assist the fire brigade in containing and extinguishing such fires.

The Tyre Storage area has been designed in line with the Fire and Rescue New South Wales (FRNSW), Fire Safety Guideline – Guideline for bulk storage of rubber tyres, Version 03, Fire Safety Branch, Greenacre, NSW Australia.

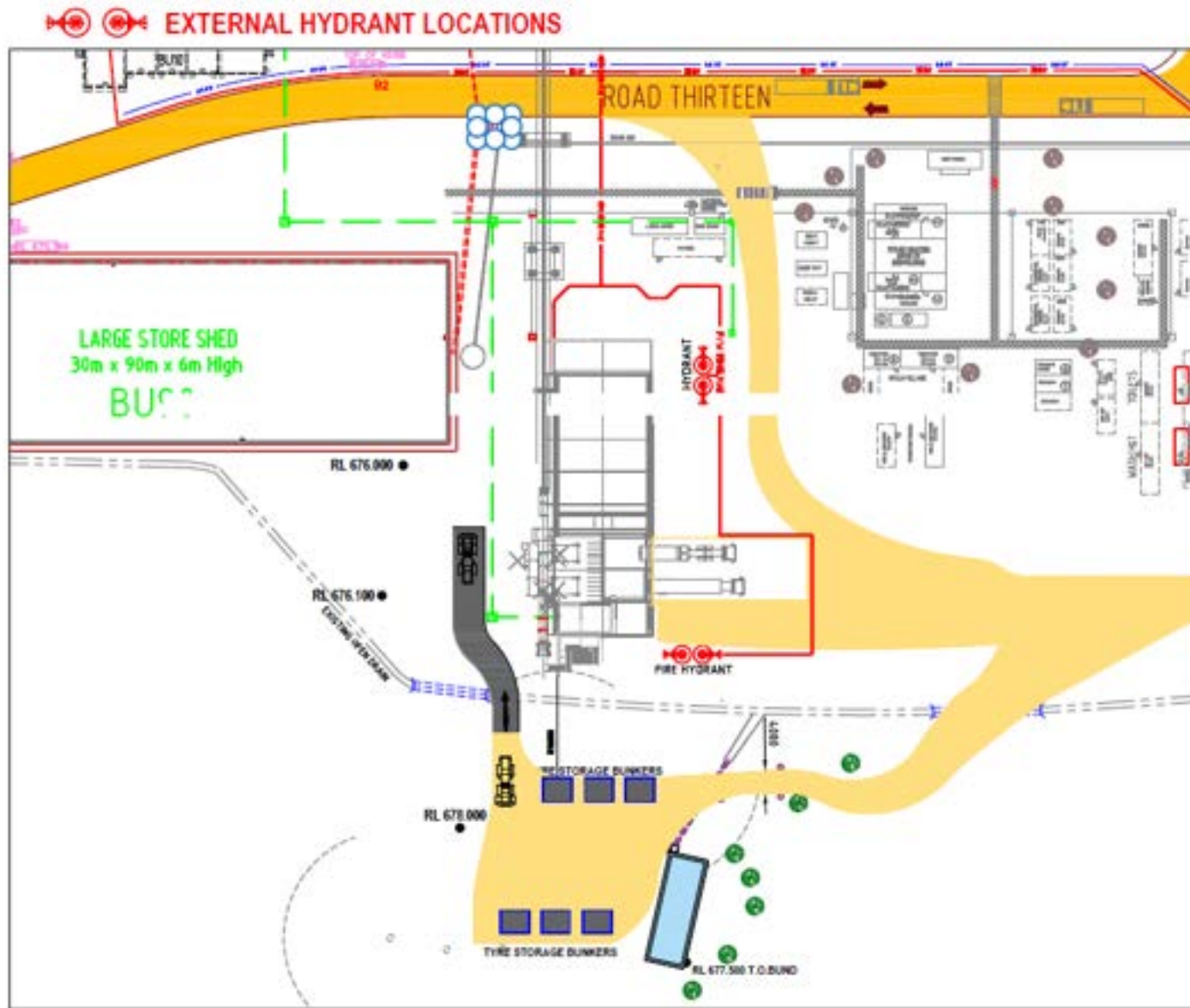
Details are as follows...

Summary of Solution	Impact to Operations
CP1 STRUCTURAL STABILITY	
The bunker is constructed by concrete blockwork to achieve a minimum of 180 minutes fire rating in all directions except for the top and the front	Management of fire fighting based details of bunker and fire ratings
The bunker height shall be 2.7 m, with tyre chips not to be stored any higher than this height at any time.	Management of fire fighting based upon bunker design
A maximum of 12.5 tonnes of tyre chips in weight will be held in each bunker.	Management of fire fighting based upon bunker design
CP2 SPREAD OF FIRE	
The bunker is 20 m ² in area, with a minimum clear separation distance of 2 m between each bunker	Spread of fire limited based upon bunker design and separation distances
A total of six (6) individual bunkers have been grouped into two	Spread of fire limited based upon bunker design

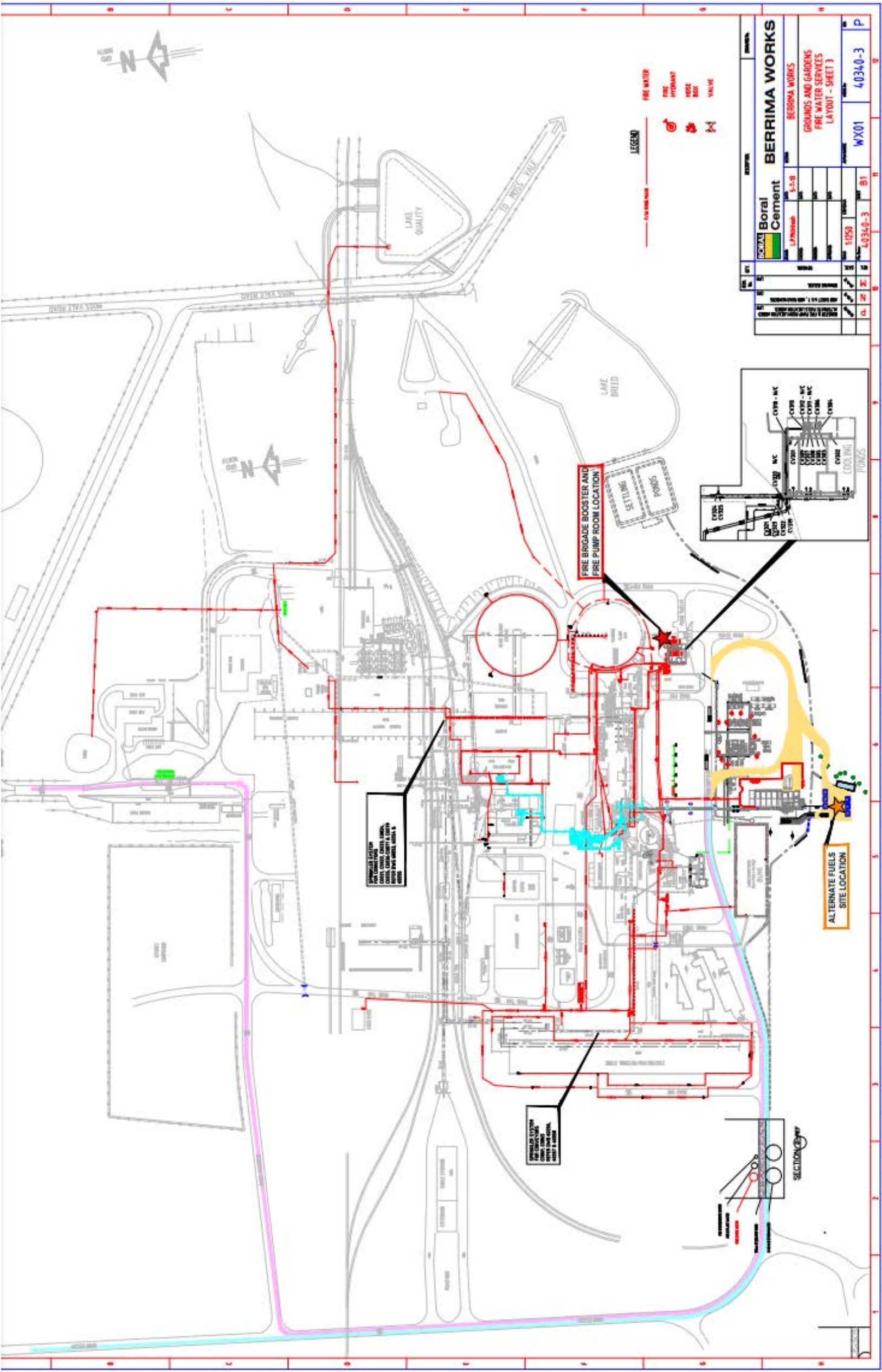
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Summary of Solution	Impact to Operations
bunker stacks (2 x groups of three bunkers on each side of the area). A total of 60 m ² on each bunker stacks as a result	and separation distances
The distance between the two groups of bunker stacks is more than 18 m (a minimum of 21 m proposed)	Spread of fire limited based upon bunker design and separation distances
The distance between the bunker stacks (North) and the existing Solid Waste Derived Fuels (SWDF) storage shed is approximately 18m	Spread of fire limited based upon bunker design and separation distances
The site will maintain structural adequacy under load from a fire appliance, including when supported, elevated or reinforced by structural members.	No limitation on fire fighting availability associated with fire appliance
CP9 FIRE BRIGADE VEHICLE ACCESS	
Site Access for the fire brigade to the tyre chips storage area is provided direct from Argyle Street, and Perth Street	No limitation on fire fighting availability associated with fire appliance and access
A minimum of 4 m wide roadway is provided for each site access point.	No limitation on fire fighting availability associated with fire appliance and access
The tyre storage site is a flat and level all weather surface;	No limitation on fire fighting availability associated with fire appliance and access
The site has been constructed with an all-weather sealed surface capable of supporting a fire appliance	No limitation on fire fighting availability associated with fire appliance and access
The site has less than 1% grade and therefore shall not hinder vehicle response and must be suitable for heavy vehicles.	No limitation on fire fighting availability associated with fire appliance and access
There is no additional fence or wall surrounding the storage area	No limitation on fire fighting availability associated with fire appliance and access
EP1.3 FIRE HYDRANT SYSTEM	
The Tyre Storage area is serviced by the current Berrima Cement fire hydrant system complying with AS 2419.1, with coverage from the existing valves to the south of the SWDF building being able to provide coverage to the facilities using 60 m hose coverage and 10 m hose stream	Berrima Cement Site Fire warden will assist with access to fire hydrant system. 60m hoses required
The Fire Brigade booster pump and Fire Pump room are located in the vicinity of the storage area	
Fire water capture. A fire water catchment bund is in place adjacent to the Tyre Storage Area.	Berrima Cement Fire Warden will ensure the Fire Water catchment bund is maintained empty and available for the capture of fire water. Berrima Cement staff will be responsible for the management of the fire water after the event. Therefore, no limitation on firefighting availability.

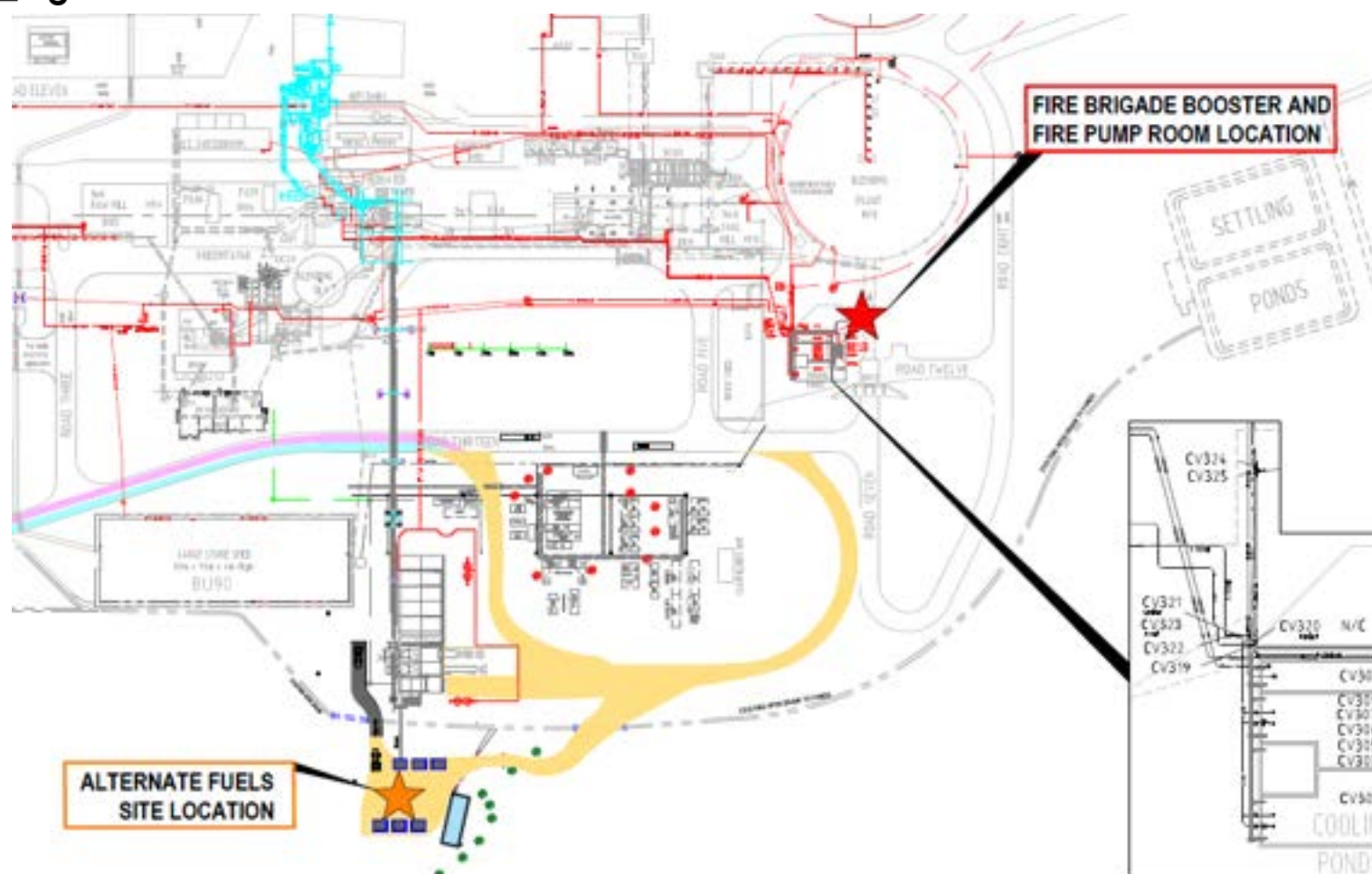
TACTICAL FIRE PLANS



External Hydrant locations in relation to the Tyre Chip Storage Area



Overall Fire system and Location of Fire Brigade Booster and Fire Pump Room in relation to Tyre Chip Storage Area



Detail of Location of Fire Brigade Booster and Fire Pump Room in relation to Tyre Chip Storage Area

FRNSW ESIP Guideline requirements

Section #	Guideline requirement	Where addressed in the ESIP Berrima Cement
7.1 Function	ESIP is intended for use by emergency services only and supplements the emergency plan for occupants	ESIP will be located in the Berrima Cement Control Room. Regular drills conducted with local FRNSW will action the use of the ESIP.
7.2 Form & Construction		
7.2.1	ESIP is to be a complete and self contained portable package that may be picked up and used In any location	ESIP will be printed A3 size and laminated in a A3 folder to allow for use at any location
7.2.2	a) To be contained within an A3 plastic covered D ring binder folder b) clearly identified with company, premises name, ESIP, IMPORTANT INFORMATION, DO NOT REMOVE FROM location c) all pages to be printed on medium stock A3 paper in portrait d) all pages to be laminated and then hole punched e) indexed into sections f) all drawings A3 size directly inserted in folder	a) noted b) refer page 2 c) noted d) noted e) noted f) noted
7.2.3	All textual information to be minimum 14 font with 1.5 times spacing and double lined paragraph spacing	ESIP formatted as required
7.2.4	Each page identified for continuity (header with section title. Version number, date of issue, page number)	ESIP formatted as required
7.2.5	Use standard terms and abbreviations	ESIP formatted as required
7.2.6	May be printed double sided	Printed single sided
7.2.7	A4 pages to be scaled to A3	ESIP formatted as required
7.3 Content of ESIP		
7.3.1	a) Must contain company and or premises name, address, geocode location, 2 emergency contracts, revision number, date of issue and date of next review b) premises overview c) contacts list d)Evacuation overview e) tactical check lists f) hazardous chemicals	All sections contained and addressed in the ESIP a) Page 1 and 2 b) Page 3 c) Page 5 and 6 d) Page 7 e) Page 8 f) Page 9

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	g) alternative solution summary h) tactical fire plans	g) Page 12 h) Page 14
7.4 Tactical check lists (TCL)		
7.4.1	Provide a checklist of tasks to be undertaken, in specific order to manage scenario	Refer page 8
7.4.2	TCL should be developed through consultation	TCL developed based on advice from Minerva through the review of the fire safety plan. TCL developed based on information from previous FRNSW drill and site Emergency response plan
7.4.3	TCL are to include a transient between Emergency response procedures to management by emergency services	Addressed line 8 of the TCL on page 8
7.4.4	TCLs are to identify a hierarchy of staff to undertake specific roles	Refer page 8. Outlined in TCL
7.4.5	TCLs are to identify the location and type of controls	Refer page 8. Outlined in TCL
7.4.6	Details of equipment of features specific to the TCL should be provided e.g. suppression systems, spill containment etc	Refer page 8. Outlined in TCL. Reference to Alternative Solution summary for details
7.4.7	Where necessary TCLs to incorporate task to return equipment to normal operation	Not applicable.
7.4.8	TCL for worst case scenario to be provided	Refer page 8
7.4.9	Where a TCL is common to a number of hazard scenarios, a reference table may be provided	Not applicable
7.5 Hazardous Chemicals manifest		
7.5.1	A hazardous Chemicals manifest is required if the workplace uses, handles or stores hazardous chemicals above manifest quantities as prescribed in schedule 11 of the WHS reg.	Refer page 9 for hazardous chemicals Manifest
7.5.2	FRNSW have published a Hazardous Chemicals manifest technical information sheet	Noted
7.5.3	A consent or regularity authority may require the manifest quantity workplace to provide an ESIP as a condition of consent or licensing	Noted
7.5.4	If an ESIP is required to be provided for the premises, a copy of the Hazardous Chemicals manifest including manifest site plan is to be included within the ESIP	Refer page 11
7.6 Alternative Solution summary		
7.6.1	If the building has an alternative solution, a summary of the solution is to be provided to assist firefighters determine what impact , if any, it may have on firefighting operations	Refer pages 12 and 13 which detail layout of the area in relation to fire fighting requirements
7.6.2	The summary is to be developed wit the assistance of the fire safety engineer who developed the alternative solution and is to include an specific recommendations that have been made by FRNSW	Summary prepared from details provided and developed by Minerva – fire safety Strategy report.
7.6.3	The summary is to provide details of the applicable fire engineering report including where a copy of the report is kept on site	Refer pages 12 and 13
7.6.4	A summary of each alternative solution issue is to be made ad grouped by NCC performance requirement.	Refer pages 12 and 13 Relevant NCC groups CP1, CP9, EP1.3
7.6.5	Summary to be presented in a simple table format, with each alternative solution issues summarised in plain English and the impacts on firefighting operations explained in an easy to understand format.	Refer page 12and 13 Table included as per example in guideline
8 tactical Fire Plans (TFP)		
8.1 Function		
8.1.1	TFPs are colour coded drawings that visually display installed fire safety systems.	Refer page 14, 15 and 16
8.1.2	FRNSW Incident controller will tactically use information from TFPs during operations. TFPs must be accurate and kept current	Noted annual review of the ESIP or when site conditions change
8.2 Form and construction		

8.2.1	Each drawing to be clearly identified by its title i.e. within title block	Noted and formatted
8.2.2	Drawings to be clearly identified by version number and date of issue	Main drawing identified in this way.
8.2.3	Drawing to be in an acceptable scale	Noted and formatted
8.2.4	Drawing to be printed in full colour on heavy stock paper than laminated	Noted
8.2.5	Depending on scale drawings should be printed on A2 paper but be no smaller than A3	noted
8.2.6	Drawings are to be clear, unambiguous and provide sufficient detail on each system or feature	Noted and formatted
8.2.7	Drawings are to be developed using computer aided design and be consistent with AS 1100	Noted. Developed via CAD
8.2.8	Drawings are to use standardised symbols, icons and colouring coding	Noted
8.2.9	All labels and text on drawings are to be minimum 14 font size	Noted
8.2.10	All drawings making a complete set of TFP are to be provided as follows.. a) a copy inserted into each ESIP folder b) a copy is to be mounted within a FCR or FECC or placed on/under a plan layout table	Noted
8.3 Content of tactical Fire Plans		
8.3.1	TFPs must detail information that may be critical to managing a fire or emergency and should include a) an overview of the site requiring evacuation b) fire hydrant system c) fire sprinkler system d) other active systems e) essential utility services f) hazardous chemicals storages and containment features	a) NA b) Included c) NA d) NA e) NA f) Included
8.3.2	Information is to be logically separated across multiple drawings if cluttered	Noted and formatted
8.3.3	Following drawings to be provided where applicable a) general site plan b) plan view of each building level c) schematics of installed systems d) an evacuation system plan e) hazardous chemical manifest site plan	a) included in ESIP b) NA c) Included d) NA e) Included in ESIP
8.3.4	Any instructions critical for safe control of a system should be provided on the drawing and headed with the word "warning"	Noted but not applicable
8.3.5	Only required exits are to be identified by colour coding	NA
8.3.6	Air ducts should not be drawn where they will unnecessarily complicate a drawing	NA
9 Location and Identification		
9.1	The ESIP is to be kept in approved locations readily accessible to FRNSW at all times	ESIP will be kept in the control room.
9.2	A copy of the ESIP is to be provided in other location as determined by the consent or regulatory authority	Noted
9.3	If the ESIP location is not apparent and in clear line of sight, signage is to be provided	Noted
9.4	Persons should be prompted to return the ESIP to its home location if removed	Noted
9.5	A copy of the emergency response plan and emergency response procedures should be kept with the ESIP	Noted
10 Management		
10.1	The PCBU should delegate a person responsible for ensuring the ESIP is developed and managed appropriately including ongoing review and auditing	To be determined once ESIP is approved by FRNSW

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10.2	Development of the ESIP should be initiated as early as practicable and be completed and ready for implementation when the premises is to be occupied	Noted. ESIP in place prior to tyre storage and usage commencing
10.3	The ESIP should be verified and validated prior to implementation e.g drill	Regular drills are undertaken. ESIP will be verified, with local FRNSW
10.4	The ESIP contents are to be reviewed to ensure it remains current and effective including routine (eg annual) auditing, post emergency review and whenever changes occur the ESIP be updated	Noted and formatted



APPENDIX 13 AKF5 SPECIFICATION

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

AKF5 – Tyre Derived Fuel (Used Tyres)

1. Background

1.1. Resource Recovery Opportunities

In March 2020, the former Council of Australian Governments (COAG) announced a ban on the export of waste plastic, paper, glass and tyres. The purpose of the ban was to prevent the export of unprocessed waste which will likely have a negative environmental or health impact in the importing countries; to encourage Australian companies to take greater responsibility for the waste produced in Australia; and to develop Australia's capacity to recycle material and produce high value products with recycled content. The ban was legislated under the *Recycling and Waste Reduction Act 2020* (RAWR Act).

From 1 December 2021, all baled whole tyres or tyres in pieces larger than 150mm were banned from export. From 1 December 2021, a waste export licence is required to export the following waste tyres:

- Passenger, SUV, bus, truck and aviation (BTA) for re-treading to a verified re-treading facility;
- Tyres that have been processed into crumbs, buffings, granules or shreds;
- Tyres to an appropriate importer for re-use as a second-hand tyre; and
- Tyres that have been processed into shreds of not more than 150mm for use as tyre-derived fuel (TDF).

Tyres are essential components of an economy and are used across almost all industries in Australia. Australia generates approximately 466,000 tonnes of End of Life Tyres (EOLT) annually, with around 259,000 tonnes historically recovered for export.

As a result of this ban, there is an increased demand domestically to find markets for waste tyre products.

Most waste tyres are collected through Australian tyre retailers and industrial users. Tyres may be processed into several waste tyre products. The definition, source material and likely end uses of each waste tyre product is outlined in the table 1 below.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

Table 1: Waste Tyre Products

Waste tyre product	Definition	Source material	Likely end uses
TDF (Tyre Derived Fuel)	TDF are shredded (generally to 50mm-150mm) waste tyres which serve as an alternative fuel source.	Primarily whole passenger tyres, but BTA (bus, truck and aviation) and OTR (off-the road) tyres can also be processed with the appropriate equipment.	Alternative fuel source, likely to be used in industrial processes including as boiler fuel, paper mills and cement kilns.
Rubber crumb/ powder, granules or buffings	Rubber granule: 2-15mm rubber. Fibre and steel has been removed from the rubber product.	Primarily bus and truck tyres due to a high natural rubber content compared with passenger tyres. There is limited domestic capacity to crumb OTR and AV tyres.	• Playground surfaces • Sporting mats • Sporting fields • Acoustic mats • Anti-slip mats • Equestrian surfaces
	Buffings: rubber component only cut to a <2mm size. Fibre and steel has been removed from the rubber product.	Derived from BTA tyres during the re-tread process.	• Matting • Moulded products
	Crumb rubber or powder: Very small pieces of rubber with no contaminants <.7mm	Primarily BTA tyres due to a high natural rubber content.	Used in industrial processes including spray on bitumen roads and additive to asphalt mix. • Adhesive tile glue • Bitumen and asphalt aggregates (road surfaces)
Whole tyres for re-tread	A whole tyre that has good structural quality where the tyre casing remains intact but the tyre tread requires renewed tread and sidewall rubber.	BTA and OTR tyres. Passenger tyres are not designed to be re-tread.	Re-used as a BTA tyre. Re-tread process can be repeated more than 3 times depending on the quality of the casing ¹
Whole tyres for re-use	Whole tyres that have been discarded but still capable of being used.	Primarily passenger and OTR tyres.	Exported to countries with lax regulations for re-use as passenger, OTR or BTA tyres.

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	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

2. Material Specifications

2.1. General Material Description

Alternative Kiln Fuel 5 (AKF5), Tyre Derived Fuel is derived from used and rejected tyres that have reached the end of their useful lives.

Used tyres are collected from various sources such as retail tyre fitting outlets and tyres suitable for re-use (such as re-treaded tyres) are diverted to those uses.

The manufacture of tyres is a very carefully controlled process to ensure that the tyres meet the required quality and safety standards. **As such, there are only very minor changes to the chemical properties of tyres during use.**

The main constituents of used tyres are natural and synthetic rubber hydrocarbons, carbon black, oils, steel belts and beads, zinc oxide and sulphur. There are minor variations in these components depending on the use, size and quality of the tyres.

Used tyres currently present a major disposal issue in all developed countries including Australia.

2.2. Used and Rejected Tyre Sources

Tyre resource recovery facilities that can produce AKF5 tyre derived fuel, source their used tyres from a number of commercial and retail tyre outlets. These include:

- Motor garages
- Retail tyre outlets
- Commercial vehicle fleet facilities
- Road transport fleet facilities
- Separated tyres within non-conforming mixed waste from licenced resource recovery facilities.

AKF5 will not be sourced directly from these sources but through licensed operators who operate systems to recover the tyres from these sources and process them to the AKF5 specification for use at Berrima.

The majority of AKF5 will be sourced from accredited* tyre recyclers who source from accredited tyre collectors under the Tyre Stewardship Australia (TSA) Accreditation.

A smaller volume will be collected from licenced tyre recyclers (accredited* under TSA) who receive tyres which have been separated out of non-conforming waste at licenced resource recovery facility.

*This includes those tyre recyclers that have applied for TSA accreditation, have relevant approvals and licences in place, however, are within the required three-month operational period mandated by TSA before accreditation by TSA can commence.

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	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

2.3. Components and Contaminants

AKF5 Tyre Derived Fuel will represent the components used in the tyre manufacturing process and typically consists of:

- Natural and synthetic rubber (hydrocarbons).
- Carbon black (fine carbon)
- Oils and waxes (hydrocarbons)
- Polyester, nylon and rayon - as fabrics in carcass, plies and chafer (hydrocarbons)
- Sulphur
- Zinc oxide
- Steel - as steel wires in steel belts and beads
- Silica - fine particles of sand
- Lime - fine particles of calcium oxide
- Minor components including:
 - copper, tin and chrome – used to coat steel wires to control corrosion
 - colouring agents and dyes
 - other organic compounds used to ensure tyre properties.

The manufacture of tyres is a very carefully controlled process. The content of these components are very tightly controlled during the manufacture of new tyres to ensure that they meet the required quality, safety and performance requirements specified in standards and manufacturers specifications. There are minor variations in the components and manufacturing process for the different tyre types. However, these minor variations have no effect on the tyre derived fuel.

There are only very minor changes to the chemical properties of tyres during use. The predominant change is physical and is predominately the loss of rubber from the wearing tread.

The main potential contaminants are dirt and water through their use on roads. The use of tyres collected direct from the commercial and retail sources results in low levels of contaminants.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

2.4. AKF5 Suppliers

Berrima cement works will only accept delivery of AKF5 sourced from EPA licensed tyre resource recovery facilities who operate a quality assurance system. As described in Section 2.2, it is a minimum requirement that Boral will source AKF5 from recyclers accredited* under Tyre Stewardship Australia.

Any supplier proposed to be engaged for the supply of AKF5 to the Cement Works will be contractually required to maintain an appropriate quality control/quality assurance (QA/QC) procedure to ensure that the supply of AKF5 Tyre Derived Fuel meets the requirements of the AKF5 specification presented in Appendix 1.

The supplier QA/QC procedures will define processes for controlling the quality of raw materials and the testing and processing stages to be followed to ensure compliance with the AKF5 specification.

The supplier QA/QC procedures will be audited annually in order to demonstrate that the supplier is complying with these procedures.

2.5. Specification

Tyres are a carefully controlled product made to strict quality standards which means there is very little variation in the composition of tyres sourced for AKF5. This ensures a consistent quality of tyre derived fuel.

The specification shown in Appendix 1, is for Boral's internal quality assurance purposes and indicates the expectations on suppliers to meet. The specific minimum calorific values and chlorine content % by weight within the specification reflect requirements within the sites development consent for non-standard fuels.

2.6. Material Variability

➤ Between Suppliers

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel between suppliers.

➤ Within Batches

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel within batches.

➤ Between Batches

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel between batches.

➤ Seasonal Variations

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

Tyres are a carefully controlled product made to strict quality standards. Tyre sales are largely constant during the year so there is minimum chemical quality variation of tyre derived fuel during the year.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

2.7. Effect of Material Variability on Kiln Performance and Emissions

Tyres are a carefully controlled product made to strict quality standards. This ensures that there is minimal variation in the chemical property of the tyre derived fuel.

Critical to the operation of the kiln and maintenance of clinker quality is a constant input of fuel and materials. The system for feeding the tyre derived fuel to the kiln is designed to ensure a constant fuel input. Such systems are well proved at other cement plants. They have been found to be reliable and ensure stable kiln operation and product quality.

This, coupled with the lack of variability of the tyre derived fuel, ensures stable kiln operation and minimises any effect on emissions.

2.8. Transport and Delivery

AKF5 is delivered to the Berrima Works by road transport.

Transport and delivery arrangements will be confirmed by the Production Manager/Technical Manager to meet production requirements.

The driver shall proceed to the weighbridge and enter the load details into the weighbridge system. The driver shall follow site procedures to ensure gross and net weights for the vehicle and delivered product weights are registered in the weighbridge computer system.

The driver shall then proceed to the nominated discharge point and unload.

The frontend loader operator will co-ordinate with truck drivers the unloading of AKF5 in the defined AKF5 storage area.

3. Berrima Site Facilities

The facilities for the handling and storage of AKF5 are approved and have been constructed to comply with the requirements of the NSW Fire Brigades Guidelines for the Bulk Storage of Rubber Tyres.

3.1 Fire and Emergency Facilities

The storage area has access to a fire hydrant for the rapid extinguishing of fires.

Procedures for fire, spills and vehicle incidents are included in the site Emergency Procedures Manual.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

4. Quality Control Procedures

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel. The physical properties of the shreds (size, exposed wires) are more important for feeding of the fuel and maintaining constant fuel input.

The supplier will sample and test a **monthly composite sample** as per the Specification in Appendix 1. Tests will be undertaken by an independent NATA accredited laboratory.

4.1. Batch Size

Tyre derived fuel is produced in a continuous process. Batch size is not applicable.

4.2. Pre-delivery procedures

There are no pre-delivery approval procedures requirements for tyre derived fuel.

4.3. Delivery approval

There are no delivery approval procedures requirements for tyre derived fuel.

4.4. Post-delivery procedures

Procedures for storage and use of AKF5 are included in the Berrima Laboratory Quality Manual.

The Technical Manager or delegate will compare the test results from the independent laboratory against the specification and report any non-conformances to the supplier for action.

5. Quality Assurance and Auditing

Boral operates a quality management system (QMS) certified to ISO 9001:2000 by BSI Global.

The procedures for AKF5 shall be included in the routine auditing of the system and the results of the audits will be included in the management review.

Any non-compliance shall be reported through the QMS Non-conformance System.

Boral will also conduct annual audits of the tyre derived fuel supplier quality management system.

5.1 Emergency Procedures

Emergency procedures for spills and vehicle incidents involving AKF5 are included in the site Emergency Procedures Manual.

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	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

5.2. Off Specification Deliveries Procedures

The careful control of the tyre manufacturing process together with the stockpiling and blending of the tyre derived fuel minimises the potential for the production and despatch of off specification material. The design of the AKF5 feed system will allow off specification material be used in the production process.

If off specification material is detected the incident will be reported to the supplier for investigation and action. The incident will be reported and investigated through the Boral QMS non-conformance system.

5.3 Records

The following records will be kept and the personnel responsible for maintenance.

Delivery Details – these are recorded in the computerised weighbridge system. The information recorded is:

Record	Comment
Docket no.	Generated by computer
Customer:	Entered by driver
Fleet:	Generated by computer if truck registration
Registration no:	Entered by driver
Carrier	Generated by computer if truck registration
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Time In	Generated by computer
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Gross Weight	Generated by weighbridge
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This information is held within the computer system and is available through the information system. The records are used to check and verify deliveries and raise invoices.

Monthly Analyses – Technical Manager or delegate (Laboratory Analyst)

Audit Results – Technical Manager or Environmental Manager

Non-conformance Reports – Technical Manager

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Appendix 1: Specification AKF 5 – Tyre Derived Fuel (Used Tyres)

Parameter	Units	Typical
Gross Calorific Value	MJ/kg	26.3 minimum*
Moisture Content	% by wt	<2%
Particle Size	mm	Up to 50mm X 50mm (approximate)
Ash Content	% by dry wt	Approx. 12%
Dirt/Foreign Material	% by dry wt	<2%
Total Sulphur	% by dry wt	<2.5%
Total Chlorine	% by dry wt	<1% Maximum**

*The MJ/kg aligns to the National Greenhouse and Energy Reporting (Measurement) Determination – 13 August 2021 NGER Amendment (2021 Measures No.1) Regulation 2021, NGERs Item 8 – TDF – Tyres Derived Fuel. **Maximum allowable within the Berrima Cement Kiln 6 Development Consent No. 401-11-2002-I Condition 3.21 d).

Note: As per condition 3.21 e) of the Berrima Cement Kiln 6 Development Consent No. 401-11-2002-I, AKF5 must not be diluted or blended with other materials to meet any of the fuel specification requirements.



APPENDIX 14 AKF1 SPECIFICATION

Boral Berrima Cement - QA/QC for AKF1 – May 2025

- A1.1 The Supplier is responsible for sampling and testing AKF1 in accordance with the requirements of this QA/QC procedure.
- A1.2 Supplier shall ensure appropriate procedures are developed and implemented with the aim of assuring that AKF1 supplied will fulfil the specification.
- A1.3 The Supplier shall ensure that AKF1 is sampled in accordance with A2.1 and tested and complies with the Specification in Table A1.1.
- A1.4 The Supplier shall ensure that testing of all NATA parameters in table A1.1 is undertaken according to the requirements by a laboratory certified to NATA at least monthly. Internal laboratories are permitted for any process or any non-NATA parameter monitoring requirements.
- A1.5 The Supplier shall agree with Boral on the details for final procedures of sampling and testing AKF1 as part of Supplier's QA/QC system.
- A1.6 Boral will undertake parallel testing of the AKF1 received as per the CMT-MAN-BER-0102 Liquid Fuel Received Procedure.

A2.1 Supplier Sampling

- A2.1.1 The Supplier shall ensure that a 500 ml representative sample of AKF1 is collected from the final product tank prior to load out to the delivery tanker. Boral and the supplier will agree on the point of sampling to ensure sample is representative.

A 500ml sample from each load is to be retained and stored for six months.

Equal quantities from daily samples collected during the month will be mixed to create a monthly composite sample.

Monthly composite sample will be sent to an external NATA laboratory where all NATA parameters specified in Table A1.1 will be tested.

A2.2 Supplier Reporting

- A2.2.1 The Supplier shall ensure that tests for all parameters in table A1.1 are carried out on each monthly composite sample of AKF1. The Supplier shall provide Boral in writing with the individual monthly composite sample results.
- A2.2.2 Where test results demonstrate that the Supplier has failed to comply with the specification, the Supplier will immediately notify Boral and they will conduct a second test of the monthly composite sample.

In case the second monthly composite sample failed the fuel specification then each delivery sample for the month will be tested to identify which of the load(s) may have failed exceeded the specification for the parameters which failed.

The supplier will investigate the reason for failing the specification and prepare a report to be submitted to Boral. Boral will notify the Department of Planning and the EPA of any

exceedance supported by any documentation prepared by the supplier.

A2.2.3 Unless otherwise detailed in a formal supply agreement, any dispute as to the quality or specification of the AKF1 which cannot be amicably resolved between the Seller and the Buyer within 60 days either party may refer such dispute for determination by an Expert agreed between the parties. Such person shall act as expert and not arbitrator and make such determination within 20 days of his appointment and his determination shall be final and binding on both parties. The expert shall determine the issue of costs, which shall also bind the parties.

A2.3 AKF1 Deviation from Specification Actions

A2.3.3 If any chemical parameter in Table A1.1 is out of specification and through communication with Boral Berrima, supply of the product will be suspended while further investigation is conducted.

The use of the current material stored at Berrima is to be suspended if the specification is exceeded for Cadmium, Mercury or Organo halogens (as Chlorides). If other parameters are exceeded, the existing material will be consumed at a maximum of 0.5t/hr.

The samples of the last two loads received will be tested.

In the case of Cadmium, Mercury or Organo halogens exceedance if the samples prove to be in spec the product will be release for consumption. If material proves not to be in spec the product will be recovered by the supplier.

A2.4 Recommencement of Supply

Recommencement of supply will need to be agreed upon with the Supplier and may require but not limited to the actions listed below to show the fuel is back within specification.

- A) The Supplier's tank(s) at the site where the exceedance occurred should be turned over once and a sample tested to show if the parameter(s) are back on specification.
- B) If the parameter(s) are not back on specification, step A above for testing by Supplier should continue to be completed until it is on specification or if it is not expected to be back in range, additional tank turnover completed once it is expected to be back in range.
- C) Agreement for recommencement of supply by Supplier should be received in writing from Boral Berrima before supply is resumed.

Table A1.1. AKF1 Specification

Parameter	Units	Max	Min
Nett Calorific Value	MJ/kg		20
Free water content	% by wt	1	
Total Water Content	% by wt	40	
Solids Content	% by wt	3	-
Particle Size	mm	2	-
Flash Point	°C		61
Parameters tested by NATA lab			
Mercury (Hg)	mg/kg	2	-
Cadmium (Cd)	mg/kg	5	-
Thallium (Tl)	mg/kg	20	-
Arsenic (As)	mg/kg	50	-
Beryllium (Be)	mg/kg	50	-
Cobalt (Co)	mg/kg	50	-
Chromium (Cr) Total	mg/kg	250	-
Copper (Cu)	mg/kg	500	-
Manganese (Mn)	mg/kg	500	-
Nickel (Ni)	mg/kg	250	-
Lead (Pb)	mg/kg	500	-
Antimony (Sb)	mg/kg	50	-
Selenium (Se)	mg/kg	50	-
Tin (Sn)	mg/kg	100	-
Vanadium (V)	mg/kg	150	-
Zinc (Zn)	mg/kg	3000*	-
Polychlorinated biphenyls (PCB)	mg/kg	2	-
Organohalogens (as Chlorine)	% by wt	1	-
Sulphur (S) Total	% by wt	2	
Fluorine (F ₂) Total	% by wt	0.05	-
Chlorine (Cl ₂) Total	% by wt	1	-

*Zn limited to 3000mg/kg unless supplied for the purposes of Proof of Performance Trials. The PoPT limits for Zn is 5000mg/kg.

Vapours	No toxic or harmful vapours are to be released
Rheology	Material shall display no unusual rheological behaviour when pumped or stirred.

1) All parameters to be reported on as received basis

	BORAL CEMENT
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AKF5 – Tyre Derived Fuel (Used Tyres)

1. Background

1.1. Resource Recovery Opportunities

In March 2020, the former Council of Australian Governments (COAG) announced a ban on the export of waste plastic, paper, glass and tyres. The purpose of the ban was to prevent the export of unprocessed waste which will likely have a negative environmental or health impact in the importing countries; to encourage Australian companies to take greater responsibility for the waste produced in Australia; and to develop Australia's capacity to recycle material and produce high value products with recycled content. The ban was legislated under the *Recycling and Waste Reduction Act 2020* (RAWR Act).

From 1 December 2021, all baled whole tyres or tyres in pieces larger than 150mm were banned from export. From 1 December 2021, a waste export licence is required to export the following waste tyres:

- Passenger, SUV, bus, truck and aviation (BTA) for re-treading to a verified re-treading facility;
- Tyres that have been processed into crumbs, buffings, granules or shreds;
- Tyres to an appropriate importer for re-use as a second-hand tyre; and
- Tyres that have been processed into shreds of not more than 150mm for use as tyre-derived fuel (TDF).

Tyres are essential components of an economy and are used across almost all industries in Australia. Australia generates approximately 466,000 tonnes of End of Life Tyres (EOLT) annually, with around 259,000 tonnes historically recovered for export.

As a result of this ban, there is an increased demand domestically to find markets for waste tyre products.

Most waste tyres are collected through Australian tyre retailers and industrial users. Tyres may be processed into several waste tyre products. The definition, source material and likely end uses of each waste tyre product is outlined in the table 1 below.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

Table 1: Waste Tyre Products

Waste tyre product	Definition	Source material	Likely end uses
TDF (Tyre Derived Fuel)	TDF are shredded (generally to 50mm-150mm) waste tyres which serve as an alternative fuel source.	Primarily whole passenger tyres, but BTA (bus, truck and aviation) and OTR (off-the road) tyres can also be processed with the appropriate equipment.	Alternative fuel source, likely to be used in industrial processes including as boiler fuel, paper mills and cement kilns.
Rubber crumb/ powder, granules or buffings	Rubber granule: 2-15mm rubber. Fibre and steel has been removed from the rubber product.	Primarily bus and truck tyres due to a high natural rubber content compared with passenger tyres. There is limited domestic capacity to crumb OTR and AV tyres.	• Playground surfaces • Sporting mats • Sporting fields • Acoustic mats • Anti-slip mats • Equestrian surfaces
	Buffings: rubber component only cut to a <2mm size. Fibre and steel has been removed from the rubber product.	Derived from BTA tyres during the re-tread process.	• Matting • Moulded products
	Crumb rubber or powder: Very small pieces of rubber with no contaminants <.7mm	Primarily BTA tyres due to a high natural rubber content.	Used in industrial processes including spray on bitumen roads and additive to asphalt mix. • Adhesive tile glue • Bitumen and asphalt aggregates (road surfaces)
Whole tyres for re-tread	A whole tyre that has good structural quality where the tyre casing remains intact but the tyre tread requires renewed tread and sidewall rubber.	BTA and OTR tyres. Passenger tyres are not designed to be re-tread.	Re-used as a BTA tyre. Re-tread process can be repeated more than 3 times depending on the quality of the casing ¹
Whole tyres for re-use	Whole tyres that have been discarded but still capable of being used.	Primarily passenger and OTR tyres.	Exported to countries with lax regulations for re-use as passenger, OTR or BTA tyres.

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	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

2. Material Specifications

2.1. General Material Description

Alternative Kiln Fuel 5 (AKF5), Tyre Derived Fuel is derived from used and rejected tyres that have reached the end of their useful lives.

Used tyres are collected from various sources such as retail tyre fitting outlets and tyres suitable for re-use (such as re-treaded tyres) are diverted to those uses.

The manufacture of tyres is a very carefully controlled process to ensure that the tyres meet the required quality and safety standards. **As such, there are only very minor changes to the chemical properties of tyres during use.**

The main constituents of used tyres are natural and synthetic rubber hydrocarbons, carbon black, oils, steel belts and beads, zinc oxide and sulphur. There are minor variations in these components depending on the use, size and quality of the tyres.

Used tyres currently present a major disposal issue in all developed countries including Australia.

2.2. Used and Rejected Tyre Sources

Tyre resource recovery facilities that can produce AKF5 tyre derived fuel, source their used tyres from a number of commercial and retail tyre outlets. These include:

- Motor garages
- Retail tyre outlets
- Commercial vehicle fleet facilities
- Road transport fleet facilities
- Separated tyres within non-conforming mixed waste from licenced resource recovery facilities.

AKF5 will not be sourced directly from these sources but through licensed operators who operate systems to recover the tyres from these sources and process them to the AKF5 specification for use at Berrima.

The majority of AKF5 will be sourced from accredited* tyre recyclers who source from accredited tyre collectors under the Tyre Stewardship Australia (TSA) Accreditation.

A smaller volume will be collected from licenced tyre recyclers (accredited* under TSA) who receive tyres which have been separated out of non-conforming waste at licenced resource recovery facility.

*This includes those tyre recyclers that have applied for TSA accreditation, have relevant approvals and licences in place, however, are within the required three-month operational period mandated by TSA before accreditation by TSA can commence.

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2.3. Components and Contaminants

AKF5 Tyre Derived Fuel will represent the components used in the tyre manufacturing process and typically consists of:

- Natural and synthetic rubber (hydrocarbons).
- Carbon black (fine carbon)
- Oils and waxes (hydrocarbons)
- Polyester, nylon and rayon - as fabrics in carcass, plies and chafer (hydrocarbons)
- Sulphur
- Zinc oxide
- Steel - as steel wires in steel belts and beads
- Silica - fine particles of sand
- Lime - fine particles of calcium oxide
- Minor components including:
 - copper, tin and chrome – used to coat steel wires to control corrosion
 - colouring agents and dyes
 - other organic compounds used to ensure tyre properties.

The manufacture of tyres is a very carefully controlled process. The content of these components are very tightly controlled during the manufacture of new tyres to ensure that they meet the required quality, safety and performance requirements specified in standards and manufacturers specifications. There are minor variations in the components and manufacturing process for the different tyre types. However, these minor variations have no effect on the tyre derived fuel.

There are only very minor changes to the chemical properties of tyres during use. The predominant change is physical and is predominately the loss of rubber from the wearing tread.

The main potential contaminants are dirt and water through their use on roads. The use of tyres collected direct from the commercial and retail sources results in low levels of contaminants.

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2.4. AKF5 Suppliers

Berrima cement works will only accept delivery of AKF5 sourced from EPA licensed tyre resource recovery facilities who operate a quality assurance system. As described in Section 2.2, it is a minimum requirement that Boral will source AKF5 from recyclers accredited* under Tyre Stewardship Australia.

Any supplier proposed to be engaged for the supply of AKF5 to the Cement Works will be contractually required to maintain an appropriate quality control/quality assurance (QA/QC) procedure to ensure that the supply of AKF5 Tyre Derived Fuel meets the requirements of the AKF5 specification presented in Appendix 1.

The supplier QA/QC procedures will define processes for controlling the quality of raw materials and the testing and processing stages to be followed to ensure compliance with the AKF5 specification.

The supplier QA/QC procedures will be audited annually in order to demonstrate that the supplier is complying with these procedures.

2.5. Specification

Tyres are a carefully controlled product made to strict quality standards which means there is very little variation in the composition of tyres sourced for AKF5. This ensures a consistent quality of tyre derived fuel.

The specification shown in Appendix 1, is for Boral's internal quality assurance purposes and indicates the expectations on suppliers to meet. The specific minimum calorific values and chlorine content % by weight within the specification reflect requirements within the sites development consent for non-standard fuels.

2.6. Material Variability

➤ Between Suppliers

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel between suppliers.

➤ Within Batches

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel within batches.

➤ Between Batches

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel between batches.

➤ Seasonal Variations

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Tyres are a carefully controlled product made to strict quality standards. Tyre sales are largely constant during the year so there is minimum chemical quality variation of tyre derived fuel during the year.

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2.7. Effect of Material Variability on Kiln Performance and Emissions

Tyres are a carefully controlled product made to strict quality standards. This ensures that there is minimal variation in the chemical property of the tyre derived fuel.

Critical to the operation of the kiln and maintenance of clinker quality is a constant input of fuel and materials. The system for feeding the tyre derived fuel to the kiln is designed to ensure a constant fuel input. Such systems are well proved at other cement plants. They have been found to be reliable and ensure stable kiln operation and product quality.

This, coupled with the lack of variability of the tyre derived fuel, ensures stable kiln operation and minimises any effect on emissions.

2.8. Transport and Delivery

AKF5 is delivered to the Berrima Works by road transport.

Transport and delivery arrangements will be confirmed by the Production Manager/Technical Manager to meet production requirements.

The driver shall proceed to the weighbridge and enter the load details into the weighbridge system. The driver shall follow site procedures to ensure gross and net weights for the vehicle and delivered product weights are registered in the weighbridge computer system.

The driver shall then proceed to the nominated discharge point and unload.

The frontend loader operator will co-ordinate with truck drivers the unloading of AKF5 in the defined AKF5 storage area.

3. Berrima Site Facilities

The facilities for the handling and storage of AKF5 are approved and have been constructed to comply with the requirements of the NSW Fire Brigades Guidelines for the Bulk Storage of Rubber Tyres.

3.1 Fire and Emergency Facilities

The storage area has access to a fire hydrant for the rapid extinguishing of fires.

Procedures for fire, spills and vehicle incidents are included in the site Emergency Procedures Manual.

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

4. Quality Control Procedures

Tyres are a carefully controlled product made to strict quality standards. This ensures there is minimum chemical quality variation of tyre derived fuel. The physical properties of the shreds (size, exposed wires) are more important for feeding of the fuel and maintaining constant fuel input.

The supplier will sample and test a **monthly composite sample** as per the Specification in Appendix 1. Tests will be undertaken by an independent NATA accredited laboratory.

4.1. Batch Size

Tyre derived fuel is produced in a continuous process. Batch size is not applicable.

4.2. Pre-delivery procedures

There are no pre-delivery approval procedures requirements for tyre derived fuel.

4.3. Delivery approval

There are no delivery approval procedures requirements for tyre derived fuel.

4.4. Post-delivery procedures

Procedures for storage and use of AKF5 are included in the Berrima Laboratory Quality Manual.

The Technical Manager or delegate will compare the test results from the independent laboratory against the specification and report any non-conformances to the supplier for action.

5. Quality Assurance and Auditing

Boral operates a quality management system (QMS) certified to ISO 9001:2000 by BSI Global.

The procedures for AKF5 shall be included in the routine auditing of the system and the results of the audits will be included in the management review.

Any non-compliance shall be reported through the QMS Non-conformance System.

Boral will also conduct annual audits of the tyre derived fuel supplier quality management system.

5.1 Emergency Procedures

Emergency procedures for spills and vehicle incidents involving AKF5 are included in the site Emergency Procedures Manual.

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	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

5.2. Off Specification Deliveries Procedures

The careful control of the tyre manufacturing process together with the stockpiling and blending of the tyre derived fuel minimises the potential for the production and despatch of off specification material. The design of the AKF5 feed system will allow off specification material be used in the production process.

If off specification material is detected the incident will be reported to the supplier for investigation and action. The incident will be reported and investigated through the Boral QMS non-conformance system.

5.3 Records

The following records will be kept and the personnel responsible for maintenance.

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This information is held within the computer system and is available through the information system. The records are used to check and verify deliveries and raise invoices.

Monthly Analyses – Technical Manager or delegate (Laboratory Analyst)

Audit Results – Technical Manager or Environmental Manager

Non-conformance Reports – Technical Manager

	BORAL CEMENT
	RECOVERED RESOURCE SPECIFICATION AKF5 – Tyre Derived Fuel

Appendix 1: Specification AKF 5 – Tyre Derived Fuel (Used Tyres)

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Gross Calorific Value	MJ/kg	26.3 minimum*
Moisture Content	% by wt	<2%
Particle Size	mm	Up to 50mm X 50mm (approximate)
Ash Content	% by dry wt	Approx. 12%
Dirt/Foreign Material	% by dry wt	<2%
Total Sulphur	% by dry wt	<2.5%
Total Chlorine	% by dry wt	<1% Maximum**

*The MJ/kg aligns to the National Greenhouse and Energy Reporting (Measurement) Determination – 13 August 2021 NGER Amendment (2021 Measures No.1) Regulation 2021, NGERs Item 8 – TDF – Tyres Derived Fuel. **Maximum allowable within the Berrima Cement Kiln 6 Development Consent No. 401-11-2002-I Condition 3.21 d).

Note: As per condition 3.21 e) of the Berrima Cement Kiln 6 Development Consent No. 401-11-2002-I, AKF5 must not be diluted or blended with other materials to meet any of the fuel specification requirements.