

# Triennial Environmental Audit

## Independent Data Analysis for

### Conditions of Consent

Cement Mill 7- DA No. 85-4-2005-i

Kiln 6 - DA No. 401-11-2002-i



**February 2021**

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# 1. Introduction

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## 1.1 Executive Summary

This Independent Environmental Audit has been prepared in response to Condition 4.5 of DA401-11-2002i and Condition 3.3 of DA85-4-2005i both of which relate to the Boral Cement Plant at Berrima NSW. Although the Berrima Cement Plant has been operating since 1929 its planning platform under the NSW Environmental Planning and Assessment Act 1979 consists of two ministerial approvals. These were granted in 2003 for the upgrading of Kiln 6 (DA401-11-2002i) and in 2005 for the construction of Cement Mill 7 (DA85-4-2005i). Together, these consents cover all aspects of the operation of the cement plant and have been assessed together.

The Kiln 6 consent has been modified 12 times, primarily in relation to the use of alternative fuels while the Cement Mill 7 consent primarily covered construction related conditions which have been the subject of previous audits and verification. The progressive modifications to the Kiln 6 consent have seen this consent become the main driver for ongoing environmental management at the cement plant.

The Berrima Cement Plant holds Environmental Protection License (EPL) 1698. The EPL covers the main monitoring points and specific load based licensing conditions in relation to air emissions. It also provides operating conditions in relation to kiln temperature and fuels.

The results of this audit are summarised as follows:

- ❑ No non compliances were noted from DA85-4-2005i (Cement Mill 7), however it was noted that the truck signage on Taylor Avenue required by condition 2.17 had been removed since the previous audit. It is possible that subsequent road upgrading and landscaping works have removed the original signs. It was also noted that the performance monitoring conditions require updating as these do not reflect the current monitoring program required to satisfy either the EPL or modifications made to the Kiln 6 consent.
- ❑ Five non-compliances were identified with the Kiln 6 consent DA401-11-2002-i-MOD12. These relate to Condition 1.6 which is a general condition requiring the cement plant to meet all other statutory obligations. The non-compliance relates to monitoring and air emissions stipulated on the EPL which are noted below.
- ❑ There were five non-compliances with EPL 1698 over the three year period of this audit. These non-compliances had been previously identified by Boral and appropriately reported and addressed at the time. The non-compliances were a failure in the High Volume Air Sampler (HVAS) due to technical issues with the unit, an excessive dust event caused by the failure of the cement mill dust collection unit, and three separate kiln exceedances of stack emission limits. These non-compliances led to the corresponding five non-compliances with the development consent.

Boral has good validation and corrective action procedures and non-compliances relating to monitoring requirements and performance criteria were previously identified by Berrima Cement Plant staff and corrected in accordance with procedures outlined in the Operational Environmental Management Plan.

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## 1.2 Introduction

This Triennial Independent Environmental Audit of the Berrima Cement Plant was undertaken by International Environmental Consultants Pty Limited (IEC) in accordance with the NSW Department of Planning Industry and Environment (DPIE) Independent Audit Post Approval Requirements June 2018 and the auditing standard AS/NZS ISO 19011:2014. The consent requires that an external independent audit be undertaken every three years of operation with the first audit being completed in 2014. This audit therefore represents the third consent audit since commencement of operations as defined by both development consents. There was a further specific audit conducted in relation to the use of Non-standard Fuels (NSF) in 2019 which covered conditions related to the use and management of NSF. This audit has included matters relating to the use and management of NSF for the Triennial audit period ending November 2020.

The audit regime over the past 10 years coupled with Boral's internal quality control and assurance program has enabled the cement plant to maintain robust compliance verification systems. This was evident from the results of this audit which did not identify any outstanding compliance issues from previous audits. The compliance issues identified in this audit largely related to monitoring requirements and emissions which have already been rectified.

The post approval audit process is designed to achieve two overall outcomes. The first is to ensure that all pre-conditions relating to a consent are achieved in the early stages of a development. These usually involve matters relating to construction impacts and controls. The second outcome is to ensure that ongoing operation of the development meets the performance criteria established in the consent. This second component tends to be the key consideration for subsequent audits during the life of the project.

The main documents and evidence used in this audit is listed in full as Appendix B and summarised below:

- Environmental monitoring data including stack emissions and ambient data for the reporting period.
- Internal Boral QA/QC documentation.
- Environment Protection License returns for the period 2017 to 2020.
- Annual Environmental Management Review (AEMR) for 2018, 2019 and 2020 reporting years including specialist consultant reports on noise emissions.
- The Operational Environmental Management Plan and component plans.
- Detailed site inspection and interviews with key cement plant personnel.

Over the past three years, the cement plant has implemented a number of additional environmental controls and initiatives which have been reviewed as part of this audit. These include:

- Upgraded internal monitoring equipment and procedures as part of the NSF usage.
- Upgraded Quality Assurance and Quality Controls with the use of NSF.
- Improved environmental monitoring program including real time dust monitoring and a more effective noise monitoring location.
- Use of a dedicated water cart to water internal roads and hardstand areas.
- Reduced area of disturbance to reduce overall dust generation.
- Reduced long distance road haulage by using trains to transport cement product in isotainers to interstate destinations.

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### 1.3 Background

The Berrima Cement Plant was originally constructed between 1926 and 1928 with first production commencing in 1929. No formal planning consent was required at the time nor was it required for several plant upgrades and reconstructions that occurred during the 1950s to 1970s. The introduction of the NSW Environmental Planning and Assessment Act in 1979 saw the requirement to obtain planning approvals for any new or upgraded plant on site. This occurred in 2002 with an application to upgrade Kiln 6 (DA401-11-2002-i) and later in 2005 with the construction of a new cement mill, referred to as Cement Mill 7 (DA85-4-2005i). These two consents cover the entire operation of the cement plant.

There have now been 12 separate modifications to the Kiln 6 consent while the Cement Mill 7 consent as remained as originally approved. The modifications have allowed for various minor changes to the operation and to align the requirements of the Environment Protection Licence over time.

Since the last triennial audit in 2017, the cement plant has commenced use of alternative fuels derived from waste, referred to as Non-Standard Fuels (NSF). The use of NSF was approved by MOD9, while on 25<sup>th</sup> October 2019, MOD11 was approved by the DPIE which permits HiCal 50 to be used during start up and shut down. HiCal 50 is a high calorific value carbon anode material with similar properties to coal. HiCal 50 can only be fed into the kiln via the coal mill and is used as a blend with other coal material. Wood waste and refuse derived fuel (RDF) are the main non-standard fuels used, both are wood based material and are also referred to as Solid Waste Derived Fuel. The consent allows up to a combined 100,000 tpa of this material to be used, but individually no more than 50,000 tpa and 80,000 tpa respectively.

IEC was not involved in any of the planning approvals or preparation of the component management plans. IEC undertook the independent environmental audit of the NSF component of DA401-11-2002-i in 2019.

### 1.4 Audit Scope

Boral Cement commissioned IEC to complete the Triennial Environmental Audit of the Cement Plant as required by conditions of both consents. The audit was carried out in accordance with the NSW Department of Planning Industry and Environment (DPIE) Independent Audit Post Approval Requirements June 2018 and the auditing standard AS/NZS ISO 19011:2014. The scope of this audit includes consideration of:

- DA No. 85-4-2005-i (CM7);
- DA No. 401-11-2002-i (K6) (MOD 12);
- Statement of Environmental Effects (SEE) dated April 2005 and other documents listed under conditions 1.1 a) to 1.1 f) inclusive;
- SEE dated November 2002 for upgrade of works and other documents listed under conditions 1.2 a) to 1.2 p) inclusive in accordance with MOD 12;
- Environmental Protection License (EPL) 1698 as at November 2020;
- Monitoring data and internal compliance reporting;
- the predictions of environmental impact assessments supporting the various modifications since the original grant of the Kiln 6 consent;
- the performance of the operation based on analysis of monitoring data and site inspection;

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- ❑ Incidents or community complaints;
  - ❑ Environmental management plans prepared under the consents.

The following report provides an assessment of compliance against both current instruments, the implementation of the required management plans and assessment of environmental performance of the operation. A detailed checklist against the conditions of the development consent is attached as Appendix A. The checklist follows the requirements of the Independent Audit Post Approval Requirements 2018 published by the Department of Planning, Industry and Environment (DPIE). The following sections detail the status of the current operation, environmental management provisions and performance and compliance.

## **1.5 Audit Objectives**

This audit represents the third triennial audit of the Berrima Cement Plant operation. The first two independent audits dealt in detail all preconditions required to be satisfied prior to commencement of construction and the satisfactory preparation of the original environmental management plans covering the operation. The objectives for this audit have therefore been extended to include a more detailed assessment of environmental performance and adequacy of pollution controls and management systems in operation at the cement plant.

The two consents and EPL provide specific performance criteria to be met by the development. In order to verify that these are being met, an environmental monitoring program has been implemented on site. This program includes data gathered on noise, dust, surface water discharges and stack emissions. A key objective of this audit is to determine if the monitoring program is adequately robust to verify that the assessment criteria provided in the approval instruments are being met.

Environmental management systems include procedures that have been adopted on site to manage the environmental impacts of the project to acceptable levels in line with the assessment criteria. Determination of the efficacy of these procedures have also been included as an objective of this audit.

An overall objective of this audit is to satisfy the requirements of Conditions 4.5 and 4.6 of the DA 401-11-2002-i-MOD12 and Condition 3.3 of DA 401-11-2002-i. Both conditions are similar and their requirements have been incorporated into the scope of work for this audit.

## **1.6 Endorsement of Auditor and Audit Team**

Robert Byrnes of International Environmental Consultants Pty Ltd was approved by DPIE to undertake the independent audit. Correspondence from DPIE is attached in Appendix D. Mr Byrnes holds a Bachelor of Science and post graduate qualifications in environmental science and has 36 years experience in environmental assessment and management of mining and extractive industries.

Other audit team members included Kirsty Nielsen who assisted with the assessment of adequacy of the management plans. Kirsty holds a Bachelor of Science (Honours) and has 12 years industry experience. Keira Leahy provided assistance with data analysis and reporting.

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Keira holds a Bachelor of Conservation Biology (Honours, Dean's Scholar) with 3 years of industry experience.

### **1.7 Audit Period**

The audit period covers the date of November 2017 to November 2020.



## 2. Audit Methodology

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The audit process involved the interview of site personnel, a review of documentation and samples of records provided by site management and a site inspection of the operations to determine the level of compliance of the operations and assess the status of the sites operational performance. The audit process and methodology are described in more detail in the sections below.

### 2.1 Document Review

Documents, information, and data available for this audit included:

- Environmental studies and assessments undertaken in support of the various consent modifications.
- Environmental management plans prepared in response to the approval.
- Operational Environmental Management Plan.
- Monitoring data and reporting.
- Internal company documents such as plans and procedures.
- Advice from government agencies obtained through email and/or telephone discussions.
- Advice from the Community Consultative Committee; and
- Site inspection and interviews with Greg Johnson (Environmental Sustainability Manager) and Gabriel Paicu (Plant Manager).

A list of documents used, reviewed or sighted as part of the audit is discussed in Section 3.1 while a full list is provided as Appendix B. Specific environmental management plans are listed in Section 3.1.1. These were separately reviewed and used to assess effectiveness of environmental management systems on site. Some monitoring data was provided in original Excel format while real time monitoring of the process was viewed in the control room at the cement plant.

### 2.2 Site Interviews and Inspections

#### 2.2.1 Site Interviews

An on site interview was held on 19<sup>th</sup> November 2020 which followed several remote meetings held in the lead up to the site inspection. Greg Johnson (Environmental Sustainability Manager) and Gabriel Paicu (Plant Manager) were present for the interview. During the interviews, the conditions of the consent were discussed and examined at length. Where necessary, evidence was requested to verify compliance. A detailed site inspection was conducted following the interview to confirm some aspects of the consent requirements.

All information requested was provided at the time of the interview or by email shortly after. The full list of information made available for the audit is provided in Appendix B.

#### 2.2.2 Data Collection and Verification

Where possible, documents and data were collected and reviewed prior to the on site audit inspections. Several documents were provided during the site visit.

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All information obtained during the audit process was verified by the auditor where possible. For example, statements made by site personnel were verified by viewing documentation and/or site inspections where possible. Photographs were taken of key points around the site which are provided as Appendix C.

AS/NZS ISO 19011 Guidelines for Auditing Management Systems, provides a protocol for verification of environmental data. The environmental monitoring data was verified by the following methods:

- Cross checking a random set of 24 result summaries provided in the online reporting against raw data provided in Excel format.
- Review of the 4 quarterly stack emission testing against data provided to the EPA in the EPL return.
- Checking the annual noise survey results for 2018, 2019 and 2020 results against the requirements of the EPL and development consent.
- Re-graphing raw stack emission data for 2018-19 and compare with Proof of Performance Trial results and EPL limits.
- Review of dust deposition results using raw Excel files and comparing the results with AEMR reports and EPL returns for the reporting years 2018, 2019 and 2020.

No samples or measurements were taken for third party verification.

### **2.2.3 Site Inspections**

A site inspection was undertaken on the 19<sup>th</sup> November 2020 which focused on the operation and management of the following areas:

- Kiln 6 and Mill 7 and surrounds
- Shale quarry;
- Storage and Stockpiling Facilities;
- SWDF storage shed;
- Rehabilitation areas;
- Water management system including Lake Quality, Lake Breed and main drainage lines; and
- Fuel and oil containment facilities, workshop and storage areas.

Photographs were taken at all key locations which are provided in Appendix B.

### **2.3 Closing Meeting**

The closing meeting was held onsite at Berrima cement Plant Office on 11<sup>th</sup> December 2020. The objectives of this meeting were to discuss any outstanding matters, present preliminary findings and outline the process for finalising the audit report.

### **2.4 Authority Liaison**

Evidence of consultation undertaken as part of this audit is provided in Appendix D. consultation emails were sent to the EPA, Wingecarribee Shire Council and the Chair of the Community Liaison Group. The only response received at the time of finalising this audit was from the Chair of the Community Liaison Group.

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## 2.5 Community Liaison Group

The Chair of the Community Liaison Group (CLG) was contacted as part of this audit. The response, attached in Appendix B, as well as follow-up telephone conversations, confirmed the following key elements of the CLG:

- The CLG is adequately funded by Boral.
- The CLG is an effective tool in disseminated information to and from the local community.
- All required data and reports are provided to the CLG along with sufficient supporting information, presentations and explanation for the community to gain an appreciation of the impacts of the cement plant on the local community.
- Community issues when they arise are adequately dealt with by Boral management

Meetings are currently held approximately twice per year and the minutes and presentation materials are provided on Boral's web page. Boral also hold "Whole of Community" meetings which open invitation meetings for anyone to attend from the local community. These are generally held once per year.

## 2.6 Compliance Status Description

The reporting of results from the compliance audit was determined based on the definitions presented below in Table 2. The results of the compliance audit are presented in Appendix A.

**Table 2- Compliance assessment criteria**

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not triggered	A requirement has an activation or timing trigger that has not been met at the time when the audit is undertaken, therefore an assessment of compliance is not relevant.

The current DPIE guidelines do not allow for separate categories of non-compliance. However, AS/NZS ISO 19011 provides for grading of nonconformities and non-compliances. The purpose of grading is to reflect the severity of environmental risk associated with the non-compliance. This audit presents the findings in accordance with the three categories provided in the DPIE guidelines but also provides an additional comment where considered appropriate, on severity using the following grading:

- The non-compliance has or could result in an exceedance of assessment criteria or environmental harm.
- The non-compliance has not and would be unlikely to result in an exceedance of assessment criteria or environmental harm.

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- ❑ The non-compliance is administrative in nature and has not and could not in itself result in an exceedance of assessment criteria or environmental harm.

These descriptors however have not been used in the compliance table but rather in commentary components of this audit document. In addition to the above descriptions of non-compliance, the audit has included observations and comments on the adequacy of environmental controls and procedures.

## 3. Audit Findings

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### 3.1 Documentation Used in the Audit

The documents used in this audit have been separated into assessment and approval related, environmental management plans and other data sources and reports. A complete list of documents reviewed as part of this Audit is provided as Appendix C.

#### 3.1.1 Environmental Management Plans

The following Environmental Management Plans updated for the Alternative Fuels Project have been reviewed as part of this audit:

- Operational Environmental Management Plan V6 (April 2020)
- Dust Management Plan V3 (April 2020)
- Water Management Plan V5 (April 2020)
- Waste Management Plan V6 (April 2020)
- Noise Management Plan V9 (April 2020)
- Traffic Management Plan (April 2020)
- Air Quality Management Plan V6 (April 2020)
- Construction Environment Plan (CEMP)
- Emergency Plan
- Pollution Incident Response Management Plan
- SWDF Stakeholder Engagement Plan

The Operational Environmental Management Plan (OEMP) is the main document which describes the environmental management system operating at the cement works. This provides the strategic framework for environmental management and how the cement plant achieves the required standards and assessment criteria. All component environmental management plans are linked through the OEMP.

#### 3.1.2 Environmental Studies and Assessments

There have been several environmental impact assessments undertaken since the two consents were first granted. Although the assessments that were used in support of the original consents are important, subsequent assessments used to gain approval to modify the consents have provided more up to date assessment criteria, management initiatives and commitments which have been incorporated into the consents. The key environmental assessment documents are as follows:

- Statement of Environmental Effects (SEE) dated April 2005
- SEE dated November 2002 for upgrade of works
- Environmental Assessment dated 2001, Use of Granulated Blast Furnace Slag, MOD 7
- Environmental Assessment dated July 2015 supporting MOD 9 Waste Derived Fuels
- SEE dated May 2019 for the use of HiCal50
- SEE dated 2019, Isotainer Loading Operations Modification (MOD12)

There were several other minor amendments however as the potential impacts were considered minor, the level of environmental assessment was inconsequential. The 2015 Environmental

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Assessment was a substantial document and included several specialised studies covering air quality, hazards, noise, traffic, greenhouse gas emissions and visual.

### 3.1.3 Environmental Monitoring and Records

Environmental monitoring data collected as required by the various environmental management plans as well as under the EPL are published by Boral on their web page: <https://www.boral.com.au/our-commitment/environmental-reporting>. The management plans are listed on a separate web site: <https://www.boral.com.au/locations/boral-cement-works-berrima>

The monitoring and verification program detailed in the Kiln 6 consent is comprehensive but also complex. Boral operate what is referred to as a Continuous Emission Monitoring System (CEMS) which covers a number of analytes within the gas stream of Kiln 6. The main analytes are oxides of Nitrogen (NO<sub>x</sub>), Hydrogen Chloride (HCL), Sulphur Dioxide (SO<sub>2</sub>), Volatile Hydrocarbons (VOC), and particulate matter. Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>) and Oxygen (O<sub>2</sub>) are also measured to determine the completeness of combustion and is a measure of the kiln performance. This data can then be compared with other operating parameters such as temperature within each component of the process, feed rate and quality.

As part of the compliance work, Boral has engaged Ektimo Pty Ltd to undertake quarterly monitoring of the stack emissions and it is their reports which are used to detail the compliance status against the EPL conditions. This program will eventually be scaled back to annual verification monitoring. Ambient monitoring consists of both dust and noise.

Deposited dust is monitored using seven gauges which are located around the site and sampled on a monthly basis. A High Volume Air Sampler (HVAS) is located to the south-east of the site which measures Total Suspended Particles and PM10 on a six-day cycle. Samples are also analysed for metal content. Boral also operate a weather station which records temperature, wind speed and direction. Boral has recently installed a real-time dust monitor which will eventually replace the ambient gauges. The real-time monitor is located in the Stores Yard near the Isotainer loading area. This is the same location that has become the central noise monitoring location used to determine compliance.

Boral also engages noise consultants to determine noise compliance. This is undertaken on an annual basis and consultant's reports are contained in the AEMR each year. The use of specialist consultants to determine the compliance status of the operation is supported and provides a high degree of confidence.

### 3.1.4 Environmental Reports

The following additional environmental reports were reviewed as part of this audit. The key reports are the AEMRs which are provided in the Boral Berrima Cement web page.

- Annual Environmental Management Review (AEMR) 2017,2018, 2019 and 2020.
- Annual Noise Assessment (Hatch, Recognition Research), from 2017 to 2020.
- Proof of Performance Testing, reports from 2018 to 2020.
- Annual stack testing, 2018 and 2019.
- Non-Standard Fuels First Year Monitoring and Modelling Assessment Report 2019.
- Alternative Fuels Independent Environmental Audit 2019.
- Solid Waste Derived Fuel Supplier QA/QC Audit 2020.

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## 3.2 Compliance Performance

A detailed breakdown of the audit findings is provided in the tables attached in Appendix A which is summarised in the following table.

**Table 3.1 – Compliance Status Summary**

Instrument	Condition	Year of Non-Compliance	Details
DA401-11-2002i	1.6	2019, 2020	Five Non-compliances with EPL conditions in relation to monitoring and emissions (as outlined in below)
EPL1698	L3.3	2018	Cadmium and Thallium exceedance of limits
	L3.3	2018	Solid particles exceedance of limits
	L3.3	2018	Hydrogen Chloride exceedance of limits
	M2.2	2019	HVAS failure to run on 4 occasions
	O2.1	2019	Failure of bag house filtration system resulting in excessive dust emissions. EPA infringement notice issued

This audit also noted that the truck warning signage on Taylor Avenue, as required by Condition 2.17 of DA85-4-2005 had been removed, possibly during the recent roadworks and landscaping activities. The land adjacent to the road verge is owned and controlled by Wingecarribee Shire Council. As condition 2.17 does not require Boral to maintain the signage or otherwise require Boral to enter an agreement with Council for their ongoing maintenance, the previous assessment that the original signage satisfied this condition continues for this audit. This audit however recommends that Boral seek approval from Council to reinstate the signage.

The three non-compliances that occurred in 2018 were during the SWDF Proof of Performance Trials. These trials were used to fine tune the systems required to meet the additional licence requirements imposed as a result of the proposed use of waste derived alternative fuels. The trials essentially represented a commissioning phase and the exceedances noted were of very short duration which were quickly corrected.

## 3.3 Notices, Penalties and Prosecutions

One penalty infringement notice was issued by the EPA during the reporting period. From 23 June 2019 to approximately 28 June 2019, failures in a bag house resulted in cement dust emissions that left the premises, affecting New Berrima Residents, depositing cement dust on their vehicles and property. Out of the 144 dust collector bags within Cement Mill 6, a total of three had prematurely failed. The EPA issued a \$15,000 infringement notice on 19<sup>th</sup> December 2019. The event resulted in a cluster of complaints in New Berrima and Boral implemented a clean-up response involving assistance with car cleaning. Boral has also engaged with a local solar panel specialist who is available to take calls from residents to discuss concerns relating to solar panels and appropriate methods to clean and maintain for their particular brands.

## 3.4 Previous Audit Recommendations

The 2017 Audit found no non-compliances with either of the development consents or Environment Protection Licence, however it provided the following recommendations for improvements:

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- ❑ Ensure Incident Reports remain open until all key stakeholders have completed their corrective actions and ongoing monitoring is undertaken to verify that all corrective/preventative actions were effective to prevent further re-occurrences.
  - ❑ Ensure Register is revised when changes occur and communicated to all Workforce and key Stakeholders. (The Auditor observed the Legal Register had not been updated with recent changes to the Environment)
  - ❑ The following deficiencies require attention;
    - Potential for worker's exposure to silica quartz in CM7 Building
    - L7 – Concrete mound/hump – potential for workers to trip
    - Clinker Gallery on top of A Frame – door left open allowing continual dust to escape, especially when SE or southerly wind impacts onto village.
    - S7U Silos – small amounts of dust leakage from Building.
    - High points are a problem –dust escaping from the cooling air vents.
    - Clinker Mole door left open instead of closed
    - Build-up of product on floors requires cleaning to prevent dust escaping.
  - ❑ Ensure all Issues identified as Priority 1 and Priority 2 in Section 3 of the Essential Fire Safety Measure Assessment Report No 3863772, are actioned immediately to avoid Council &/or Fire and Rescue NSW finding the signatory guilty of an offence under the Regulations by not taking action.
  - ❑ Ensure all follow-up Actions raised during HSE Inspections are effectively actioned. Ensure each element of the ISO 14001:2004 Standard is to be audited by Senior HSE Auditors during 3 year planned intervals.
  - ❑ Ensure Management Reviews are conducted in accordance with annual planned intervals to avoid non-conformances being raised.

The above listed recommendations were actioned over the 2018 reporting period.

### **3.5 Monitoring Data Review**

The monitoring program at the cement plant consists of continuous process and emissions monitoring at both the Kiln and cement mill, and ambient noise and dust monitoring. The process and emission monitoring program is complex and was designed and installed by a specialist contractor (Ektimo Pty Ltd). The ambient monitoring program has been in operation for many years but has gradually been improved to better understand the impacts the cement plant has on surrounding areas. These are discussed in the following sections.

#### **3.5.1 Continuous Emission Monitoring**

The Continuous Emission Monitoring System (CEMS) provides real-time data on specified analytes in the Kiln 6 stack gas stream. The Environment Protection Licence provides limits in terms of grams per cubic metre over various averaging periods. Some limits are then converted to 24 hour periods. To determine these levels, laser-based probe analysers with optical system sensors have been installed in the kiln stack which detect continuous concentrations of each specified analyte. The data is then sent to the plant control room and recorded.

#### **3.5.2 Continuous Process Monitoring**

This includes monitoring of process data within the kiln and mill such as temperature, exhaust gas rate and composition, feed rate of standard raw materials and non-standard fuels. This



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system provides “lockouts” for the non-standard fuels if certain operating parameters are not met such as kiln temperature. The EPL lists temperature limits on stack gas, abatement system, preheater exit, and combustion temperature. These limits include both upper and lower levels which are designed to ensure maximum operating efficiency of the kiln which in turn minimises adverse emission levels of nominated compounds. The data is recorded in the main control room and records are kept of triggers that result in changes being made to the operation.

The continuous monitoring system was upgraded with the introduction of non-standard fuels (NSF). This was necessary to provide the required data as specified on the revised EPL. The lockout system mentioned above stops the input of NSF if the kiln temperature drops below 850°C. Stack temperature is important in the removal of particulates and some gaseous emissions but also provides information on the performance of the conditioning tower.

### **3.5.3 Ambient Monitoring Review – Dust**

The main tool to determine the impacts of the cement plant on the local community is through monitoring of ambient dust at several locations. This data can then be used to assess the environmental performance of the cement plant operation and verify the impact predictions made in the environmental assessment documentation which forms the basis of the planning consent and environment protection licence.

The site operations use one a High Volume Air Sampler (HVAS) and seven dust deposition gauges. The HVAS collects a large volume of air over a 24 hour period every 6 days and determines Total Suspended Particulates measured as micrograms of dust per cubic metre of air. The HVAS also uses filtration to determine the component of ultra fine dust particles, referred to as PM<sub>10</sub> or 10 micron component. The collected dust samples are also subject to metal analysis which allows the sample to be characterised and its source to be estimated. The deposition gauges measure the coarser dust particles which readily fall out of suspension and are collected in static gauges. This component is measured as grams per square metre measured over a month.

As noted in Table 3.1, during the 2019 reporting period, Boral reported a non-compliance for the failure of the HVAS to run on 4 occasions. As the HVAS is required to run every 6 days throughout the year, even a minor programming error or power outage could cause a sample to be missed. During the 2020 review of the Air Quality Management Plan approved by the EPA and DPIE an amendment was made to include the following 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.’*

Boral has recently installed real-time dust monitoring equipment located on the northern side of the plant in the direction of the New Berrima village. The benefits of using real time monitoring is that problems with dust generation on site is detected immediately rather than after the results of laboratory analysis of the current gauges is at hand. This can occur many days after a dust incident has occurred. The real-time monitor will in future provide an alert to the control room that elevated dust has been detected prior to the dust leaving the site. This provides the opportunity to investigate the cause of the dust and if necessary, make changes to the operation, direct the water cart to problem areas or determine if there is a fault with the dust controls requiring shutdown.

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### **3.5.4 Ambient Monitoring Review – Noise**

Boral employs a specialist noise consultant to assess noise levels and to determine compliance. Although this is not necessary specified in the consent, by using a registered noise consultant provides a greater level of confidence in the assessment of compliance. The noise consultant's reports are contained in each Annual Review.

The noise assessment includes measuring the noise levels at multiple points around the cement plant as well as ambient levels at receiver locations. Given the high levels of background noise not attributable to the cement plant activities, the noise consultant is required to calculate the contribution of the cement plant activities to the receiver locations using standard modelling techniques.

Both consents list noise limits and other noise related conditions which are slightly different. Boral has negotiated with the EPA to change the EPL to allow for a single nominated monitoring site inside but close to the plant boundary where noise emissions from sources other than the Cement Plant are not significant. This site, referred to as "Store Yard Close" and has a specific assessment criteria of 58dB(A) LA<sub>90</sub> 15 minute.

### **3.6 Site Inspection and On-Site Environmental Management**

The site inspection covered all aspects of the cement plant operation and a photographic record is provided in Appendix B.

#### **3.6.1 Kiln 6 and Cement Mill Area**

The site inspection did not identify any hazards or issues of concern in relation to the main process plant on site. There were no visible evidence of dust emissions and the stack discharge appeared clear. The inspection included the control room and continuous monitoring system.

#### **3.6.2 Bulk Materials Storage Area**

The bulk material storage area is largely open with a separate pollution control dam and tree planting to screen the site and to create windbreaks. The inspection occurred on a relatively still day with little wind. There were no visible signs of dust leaving the site however this area would be a source of fugitive dust during higher wind events. It is understood the dedicated water cart frequents this area regularly and activities are curtailed during high wind days. It was noted that some stockpiles were tarped.

#### **3.6.3 NSF Storage Facility**

Non-standard fuels consist of primarily wood waste which is can generate high levels of dust. The storage facility is fully enclosed and there was no evidence of dust leaving the shed. The material is delivered by fully enclosed truck which reverses into the shed. The material is shaken into the receival bunker which is then "grabbed" by an overhead crane which can either reclaim the material into the main storage bunker or into the conveyor hopper. There were no signs of NSF spillage outside of the shed including the feed conveyor area and truck receival area. The roadways leading to the shed were also clear with no evidence of spillage.

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### **3.6.4 Hardstand, Carparks and Internal Roadways**

All hardstand areas were inspected and found to be generally clear of debris and build up of dust. The cement plant by its very nature generates fine cement dust which needs to be controlled by regular cleaning. This is usually done by high pressure water using a dedicated water cart which also waters the roadways for dust suppression. The operation of the water cart was sighted on site and All runoff water is then contained in a large on site pollution control pond, referred to as Lake Breed.

### **3.6.5 Pollution Control Ponds**

There are two main pollution control ponds on site, Lake Breed and Lake Quality. Lake Breed is located on the main cement plant site while Lake Quality is located on Boral owned land on the eastern side of Moss Vale Road. The spillway of Lake Quality represents the licensed discharge point for the cement plant. Both ponds were inspected and the water quality appeared excellent. There was no evidence of sedimentation or discoloration.

### **3.6.6 Shale Quarry**

The Blue Shale quarry is located on the south-western side of the cement plant site. The quarry provides one of the main raw materials in the production of clinker. Clay is extracted on an as needed basis which is then blended with limestone and iron ore to produce the feed meal to the kiln.

The Shale Quarry operates under the Kiln 6 Consent (DA 401-11-2002) and subsequent modifications and is also covered by Environment Protection Licence 1698 which includes the scheduled activity "land-based extractive industry". The Shale Quarry is also covered by MLA 454 and associated Mining Operations Plan covering the period ending 1 July 2022. These two authorities are not covered by this audit.

The shale is extracted by a series of shallow benches by dozer ripping then pushing up into piles which are then loaded onto trucks for transport to the storage shed. The storage shed was inspected as part of this audit which also housed yellow clay sourced from the Marulan Limestone Mine.

The external batters showed evidence of erosion and minor failure of the internal drainage systems. This occurred during intense storm events earlier in the year but should be corrected. The remaining quarry surrounds were stable and functioning correctly and rehabilitation work appeared satisfactory.

### **3.6.7 Landscaping**

Boral has previously completed a comprehensive landscaping and rehabilitation program designed to reduce the area of disturbed ground that could generate fugitive dust as well as provide wind breaks to reduce the erosive velocity of localised wind. The program involved significant tree planting and grass cover improvements. The rehabilitation area was inspected and it was found that the majority of the work has proved successful. Some woody weeds have developed along the drainage line leading to Lake Breed and the original tree guards should be removed as they are no longer needed and will eventually break as trees mature.

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### **3.6.8 Night time Visual Inspection**

A separate inspection of the cement facilities and surrounding area occurred on 30<sup>th</sup> November 2020. This inspection covered the main roads surrounding the plant to determine if light spillage was occurring. The cement plant is clearly visible at night from many elevated vantage points for up to 8 km in a westerly direction around Mandemar, 3 km from the south particularly around Gingenbullen Mountain, 4 km to east along Berrima-Moss Vale Road and at elevated locations to the north for over 5 km. Although the lights were visible, no direct glare was evident indicating that all internal light sources are directed towards the ground and within the cement plant site.

As the cement plant operates 24 hours per day, seven days per week, Boral has given consideration to the placement and direction of internal light sources and ensure that light spill outside the cement plant is minimised.

### **3.7 Community Liaison**

Boral maintains a strong reputation of positive communication within the local community including quarterly Community Liaison Group Meetings and annual Whole of Community meetings. Additional Whole of Community meetings are also held when significant changes or announcements are to be made by the cement plant. Quarterly newsletters are delivered to the residents of New Berrima. The newsletters and presentations from both community meetings including meeting notes are published on the Boral webpage which have been reviewed in this audit. Concerns of dust have regularly been discussed, particularly following a high dust event at the end of June 2019. The community and the EPA were informed about the failed dust collectors on Cement Mill 6, and impacted residents were provided with vouchers and resources to clean their cars. To follow up on this event, the Boral is trialling a real-time dust monitor to detect such occurrences in the future.

### **3.8 Record Keeping**

The success of site environmental management often rests with good data collection, proper analysis of data and record keeping. The environmental data is all kept on site and there is a system to enable ongoing management of data to identify trends and potential future exceedances. The raw environmental data has been inspected and found to be stored and kept up to date.

Paper records are kept of NSF receipts and data templates which are used for QA/QC of waste management were viewed as part of this Audit. Public data and monitoring result are published on the Boral webpage on a regular basis.

### **3.9 Environmental Management Plan Review**

All the management plans required by the consent have been prepared and approved, since the development commenced. These plans have been reviewed and updated since the 2017 Environmental Audit. The key management plans operating on site were reviewed as part of this audit. These are discussed in the following sections.

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### **3.9.1 Operations Environmental Management Plan**

The main management plan for the site is the Operations Environmental Management Plan (OEMP) which was revised in April 2020 (Version 6) 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). The OEMP covers the entire operation including the regulatory requirements, environmental management, communications including reporting, responses to incidents/ non-conformances, monitoring and reviews. The requirements for the OEMP are listed under the Kiln 6 consent in conditions 6.3, 6.3A, 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), 6.5 and 6.6. The OEMP meets the requirements of these conditions as discussed in Appendix A of this report.

### **3.9.2 Water Management Plan**

The latest version of the Water Management Plan (Version 5) was updated in April 2020 to incorporate changes to the Consent including MOD 11 use of HiCal50 (25/10/19) and MOD 12 Use of isotainers and site-wide noise limit (7/04/20). The WMP provides a water management system which addresses the management of stormwater on site, and supply of process water to the cement works. The plan also looks at the potential for water quality impacts from each operating activity conducted on site. The process water sources and requirements for water usage on site are detailed. Monthly and quarterly water quality sampling is required from Lake Breed and Lake Quality as well as monitoring of any discharges to Stony Creek are described in the WMP. The Water Management Plan satisfies the relevant conditions of the Consent.

### **3.9.3 Waste Management Plan**

The Waste Management Plan was updated in April 2020 (V6) to include reference to MOD 11 and MOD 12. The plan describes the procedures in place at Berrima Cement Works for handling, tracking and disposal of waste materials. Boral requires the site to monitor and measure all waste produced, reused, recycled, and disposed and the plan outlines how such procedures comply with the licence and regulatory requirements. It is important to note that this plan does not apply to the NSF or external waste bought on site as recovered material. The Waste Management Plan is comprehensive and adequately addresses the consent requirements.

### **3.9.4 Air Quality Management Plan**

This Air Quality Management Plan (AQMP) has been revised in April 2020 (Version 6) to include the outcomes of the Proof of Performance Trials for non-standard fuels, to include the trial of the real-time dust monitor, and update for MOD 11 and 12. This plan informs staff of their obligations relating to air quality, including emission limits, and the controls and management actions in place to mitigate fugitive dust, odours and point source emissions. All possible gas and dust emission sources are identified within the plan with controls for the potential sources. The AQMP is in compliance with environmental legislative requirements and satisfies the relevant conditions of the consent.

### **3.9.5 Dust Management Plan**

The Dust Management Plan was updated in April 2020 (V3) with minor changes to reflect the HiCal 50 storage. This plan is in place to reduce offsite dust impacts including PM10 and deposited dust. Sources of dust have been identified, and activities identified as high to medium

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priority are a focus of this plan, as dust minimisation in such areas will have the greatest reduction of dust generation overall. A comprehensive list of management measures to minimise dust from each operation is detailed under Section 7. A landscaping and revegetation program is discussed in the plan which aims to reduce dust pickup from exposed areas and immobilise dust generated from operations.

### **3.9.6 Noise Management Plan**

The Noise Management Plan (NMP) was updated in April 2020 (V9) to include the variation to the EPL and MOD 11 and MOD 12 whole of site noise limit and use of isotainers. The plan is designed to address appropriate controls and management techniques to minimise noise levels. Current whole of site maximum allowable noise contribution limits are outlined in the NMP as 58 L<sub>A90(15minutes)</sub> for the day, evening and night. An independent consultant conducts a noise assessment on an annual basis to confirm the noise emissions remain below existing limits. The Plan also enables compliance with the conditions specified in the development approvals for Cement Mill 7, Kiln 6 and the EPL1698.

### **3.9.7 Traffic Management Plan**

The Traffic Management Plan (TMP) has also recently been updated in April 2020. The purpose of the TMP is to outline the requirements for safe management and environmentally responsible road use and the mobile plant/equipment that uses the site and local external roads. Mitigation strategies for traffic/ transport impacts are discussed within the plan as well as the responsibilities of personnel on site. Additional traffic rules are applied to vehicles driving on site which can be found in the TMP.

### **3.9.8 Quality Assurance and Control Procedures Solid Waste Derived Fuel (SWDF)**

Appendix 1 of the Kiln 6 consent 401-11-2002-I MOD12 provides a Quality Assurance and Control Procedure for the receipt and use of SWDF. The purpose of the procedure is to define a standard approach for ensuring that the quality of SWDF received and used at the Boral Berrima Cement Works meets the specified fuel requirements and relevant statutory regulations and policies including the NSW Energy from Waste Policy. The purpose of the procedure is to:

- Ensure the compatibility of SWDF supplier QA/QC systems with Boral's approved Control Procedures.
- Ensure that SWDF supplier QA/QC systems will enable Boral to continue to meet the specific SWDF specifications as listed in Table A1.1 of Development Consent 401-11-2002-I MOD12.
- Ensure that SWDF supplier QA/QC systems meet the requirements of the NSW Energy from Waste Policy.
- Ensure that there is a verifiable tracking and chain of custody of SWDF from each supplier's facility to the Berrima Cement Plant.
- Ensure that there is a standardised analysis of SWDF undertaken at each supplier which corresponds to the analysis undertaken by Boral.

These procedures were separately audited by IEC on 16 June 2020 and found to be fully compliant. No further assessment of the QA/QC system was necessary as part of this current audit.

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### 3.10 Actual Vs Predicted Impacts

As listed in Section 3.1.2, there have been six separate environmental assessment undertaken since 2002 for various approvals and subsequent modifications. The most recent comprehensive assessments have been prepared in support of the use of non-standard fuels. The predictions made in the 2015 Environmental Assessment supporting MOD9 has been referred to in this section.

#### 3.10.1 Dust Monitoring Results vs Predicted

The results of ambient dust data have been reported in each AEMR covering the audit period. The results are also summarised in the annual EPL return. These are summarised in the following table.

**Table 3.2- Annual Ambient Air Quality Monitoring**

Parameter	EPA Limit	EA Prediction	2018 Average	2019 Average	2020 Average
DDG 1	4 g/m <sup>2</sup> /month	<4	1.0	1.0	1.2
DDG 2	4 g/m <sup>2</sup> /month	<4	0.9	1.0	1.7
DDG 3	4 g/m <sup>2</sup> /month	<4	3.7	3.9	2.9
DDG 5	4 g/m <sup>2</sup> /month	<4	2.0	1.9	2.0
DDG 7	4 g/m <sup>2</sup> /month	<4	0.7	0.8	0.9
DDG 8	4 g/m <sup>2</sup> /month	<4	1.1	0.9	1.7
DDG 9	4 g/m <sup>2</sup> /month	<4	2.0	2.1	2.5
PM <sub>10</sub>	30 µg/m <sup>3</sup> Annual	<30	14.7	15.6	21.7
TSP	90 µg/m <sup>3</sup> Annual	<90	57.7	54.0	49.8

The data shows general compliance with the EA predictions. Viewing the monitoring data in more detail shows that the PM<sub>10</sub> 24 hour goal of 50 µg/m<sup>3</sup> was exceeded on a number of times during the reporting period. The largest occurred in December 2019 with a result of 240 µg/m<sup>3</sup>, while minor exceedances occurred in December 2018 with a result of 57.3 µg/m<sup>3</sup>, April 2018 with a result of 62.4 µg/m<sup>3</sup>, and January 2018 with a result of 70.9 µg/m<sup>3</sup>.

Boral has recognised issues with the location of the HVAS unit which was relocated in February 2018 away from Council roadworks. The EA dust model provided predicted dust level contributions at the nearest residential receptors. The predictions at the highest prediction was a 10.1 µg/m<sup>3</sup> 24 hour increase above ambient. A review of the monitoring data would suggest that this increase has not occurred under normal operating conditions. The exceedances that have occurred have been the result of identified failures in control equipment or from regionally high dust events caused by bushfires. There is also no correlation between the noted site exceedances and elevated levels at receiver locations as demonstrated by the monitoring data. This indicates that the exceedances have been relatively minor and quickly corrected.

#### 3.10.2 Noise Monitoring Results vs Predicted

The assessment of noise compliance has been undertaken each year by an external noise consultant. For the 2018 reporting period, the noise assessments were undertaken by Hatch while the 2019 and 2020 reporting periods the assessment was undertaken by Recognition Research. Each assessment has used the assessment criteria and locations specified on the consents which were derived from the original approval. Each assessment confirmed that the site was meeting the criteria specified in the consent.

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### 3.11 Improvement Opportunities

Boral has progressively implemented a range of ongoing site improvements. These include:

- ❑ Additional pollution control systems including lockouts within the cement making process. These controls reduce the potential for adverse emissions from the kiln and cement mill.
- ❑ Improved monitoring programs which use external noise consultants and specialised advise on real time dust monitoring. The program involves the linking of the site weather station and real time dust monitoring equipment which will provide alerts to the control room.
- ❑ General site improvements such as landscaping and tree screens to reduce wind speed across the site. This work reduces the rate of fugitive dust emissions from the site.
- ❑ Additional rehabilitation of unused areas to reduce exposed surface area.
- ❑ Increasing the water cart size to enable more area to be wetted down between fills. The filling station has also been upgraded to enable fast filling of the water cart.
- ❑ Provision of temporary tarping of raw materials that are considered dust sources.
- ❑ Implementing the isotainer project which reducing long distance road transportation of product.

Each of these improvements will require ongoing verification and management to ensure that they are successfully reducing dust and noise emissions from the site.

### 3.12 Key Strengths

The Berrima Cement Plant has been operating for over 90 years. It has maintained its community presence and has well established communications with its local community. Based on the results of the Whole of Community meetings, it is evident that the operation's key strength is its relationship with the local community.

The village of New Berrima was originally built to house the cement plant workforce and despite the historic anomaly of having an isolated group of residents located close to a major industrial complex, Boral recognises that the impacts of its operation must meet stringent impact assessment criteria over a very short distance.



## 4. Audit Conclusions and Recommendations

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### 4.1 Audit Conclusions

This Independent Environmental Audit covers the three year period between 2018 to 2020 inclusive. During this period there has been a significant change made to the operation with the use of non-standard fuels. Boral has taken significant time and care in the preparation for the use of NSF as a long term replacement for coal. The trials have been successful and have resulted in some fine tuning of the use and management within the process.

This audit found five non-compliances with the Kiln 6 consent DA401-11-2002-i-MOD12. These relate to Condition 1.6 which is a general condition requiring the cement plant to meet all other statutory obligations. The non-compliances relate to monitoring and air emissions stipulated on the EPL which were all identified by Boral and listed in its annual licence returns. Three of the non-compliances occurred during the SWDF Proof of Performance Trials. These trials were used to fine tune the systems required to meet the additional licence requirements imposed as a result of the proposed use of waste derived alternative fuels. The trials essentially represented a commissioning phase and the exceedances noted were of very short duration which were quickly corrected.

Condition 3.25(d) has been noted as compliant even though the maximum calorific value of the NSF was not specified but rather a minimum was specified in Boral's QA/QC criteria. As the relevant criteria is a minimum calorific value and a maximum value is irrelevant, this was viewed as an error in the consent. This condition also relates to the trial which has been concluded so it is not considered necessary to amend the consent.

This audit also noted that the truck warning signage on Taylor Avenue, as required by Condition 2.17 of DA85-4-2005 had been removed, possibly during the recent roadworks and landscaping activities. The land adjacent to the road verge is owned and controlled by Wingecarribee Shire Council. As condition 2.17 does not require Boral to maintain the signage or otherwise require Boral to enter an agreement with Council for their ongoing maintenance, the previous assessment that the original signage satisfied this condition continues for this audit. This audit however recommends that Boral seek approval from Council to reinstate the signage.

As detailed in the tables in Appendix A, the cement works is complying with all other consent conditions.

### 4.2 Audit Recommendations

The following recommendations have resulted from this audit:

- Consideration should be given to either amalgamating the two current consents as they both have elements that overlap or updating the Cement Mill 7 consent to align with DA 401-11-2002-i-MOD12.

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- ❑ The noise assessment criteria contained in the Cement Mill 7 Consent DA 401-11-2002-I needs to be updated to align with the EPL and DA 401-11-2002-i-MOD12.
  - ❑ Bank erosion on the main batter slopes of the shale quarry should be corrected and the drainage system on the banks re-established.
  - ❑ Seek approval from Wingecarribee Shire Council to reinstate the truck warning signage on Taylor Road.

## Appendix A – Cement Mill 7 - Conditions of Consent Table

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
1	General					
1.1	<p><b>Scope of Development</b> The Applicant shall carry out the development generally in accordance with:</p> <p>a) <i>Development Application No. 85-4-2005-i lodged with the Department of Infrastructure, Planning and Natural Resources on 15 April 2005</i></p> <p>b) <i>Statement of Environmental Effects: Proposed Upgrade of Cement Grinding Capacity, Cement Mill 7 Project, dated April 2005 and prepared by Olsen Environmental Consulting Pty Ltd</i></p> <p>c) <i>Noise Impact Assessment: Boral BCSC Berrima, Cement Mill 7 Project dated 3 April 2005 and prepared by Connell Hatch</i></p> <p>d) <i>Air Impact Assessment: Air Quality Assessment for SEE, Cement Mill 7 Project, dated 6 April 2005 and prepared by Holmes Air Sciences</i></p> <p>e) <i>Traffic Report: Berrima Cement Works, Cement Mill 7 Project dated 11 April 2005 and prepared by Masson Wilson Twiney Pty Ltd</i></p> <p>f) <i>Correspondence with subject 'Cement Mill 7 – Implementation Dates' prepared by Mr Grant Williams, Blue Circle Southern Cement Ltd and dated 6 July 2005; and</i></p> <p>g) <i>the conditions of this consent.</i></p> <p>In the event of an inconsistency between a condition of this consent and the documents listed under a) to g) above, the condition of consent shall prevail to the extent of the inconsistency.</p>		<p>Since the last Compliance Audit in 2017, Boral Cement continues to demonstrate their commitment to continually improve their EMS at Berrima.</p> <p>It was noted that the previously installed truck warning signs on Taylor avenue as required by condition 2.17 had been removed.</p>	Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
1.2	The Applicant shall operate the cement works upgrade to meet the following requirements: a) CM7 is utilised in place of CM5; and	Doc 1- Section 3.4 Doc 2- Section 3.4 Doc 3- Section 3.4	CM5 was not operated during the reporting period. The total production from CM7 for the reporting period: <ul style="list-style-type: none"> <li>2017 – 2018 – 1,264,081 tonnes</li> <li>2018 – 2019 – 1,209,500 tonnes</li> <li>2019 – 2020 – 1,104,195 tonnes</li> </ul>	Compliant	Compliant	Compliant
	b) CM5 may be utilised as a secondary, back-up mill when CM7 is inoperative.			Compliant	Compliant	Compliant
1.3	<b>Provision of Documents</b> <i>Where practicable, the Applicant shall provide all documents and reports required to be submitted to the Director-General under this consent in an appropriate electronic format. Provision of documents and reports to other parties, as required under this consent, shall be in a format acceptable to those parties and shall aim to minimise resource consumption.</i>	Boral Webpage Email correspondence	All documentation had been provided to the Auditor electronically to minimise resource consumption.	Compliant	Compliant	Compliant
1.4	<b>Statutory Requirements</b> <i>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.</i>	Interview Doc 58	All required licenses, permits and approvals were being maintained on site at Boral Cement Berrima and were current The Environmental Protection License (EPL) No.1698; Revision Dec 2019, was in place for the site with reporting through to the EPA	Compliant	Compliant	Compliant
1.5	<b>Compliance</b> <i>The Applicant shall ensure that all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent. The Applicant shall be responsible for the environmental impacts resulting from the actions of all persons on the site including any visitors.</i>	Interview	Site Inductions for all workers (employees, contractors and sub-contractors) and compliance packages have been reviewed and rewritten due to a major company restructure Environmental Refresher Training for site employees and contractors appears ongoing Conditions of this Consent and other regulatory documents for the site are communicated at environmental refresher training Environmental issues and environmental compliance reviewed at daily Site Lean/Management Meetings, weekly/monthly Health & Safety Meetings, and Monthly Management Meetings Management conducts Lean/5S/HSE site inspections to identify any issues regarding resource efficiency, environment and safety concerns.	Compliant	Compliant	Compliant
1.6	Prior to the commencement of each of the events listed from a) to b) below, or within such period as otherwise agreed by the Director-General, the Applicant shall certify in writing, to		Compliance was demonstrated in the 2007 – 2008 AEMR There were no changes to the operation of CM7 that required additional evidence of compliance.	Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	the satisfaction of the Director-General, that it has complied with all conditions of this consent applicable prior to the commencement of that event. Where an event is to be undertaken in stages, the Applicant may, subject to the agreement of the Director-General, stage the submission of compliance certification consistent with the staging of activities relating to that event. The events referred to in this condition are as follows:					
	a) construction of the cement works upgrade			N/A	N/A	N/A
	b) operation of the cement works upgrade			N/A	N/A	N/A
1.7	<i>Notwithstanding Condition 1.6 of this consent, the Director-General may require an update on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the reasonable requirements of the Director-General and be submitted within such period as the Director-General may agree.</i>	Interview	It is understood the DP&E had not requested further updates at the time this audit was conducted.	Compliant	Compliant	Compliant
1.8	<i>The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the SEE and those documents listed under condition 1.1. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.</i>	Interview	At the time this audit was conducted, it was understood the DP&E had not requested any action be taken under this Condition.	Compliant	Compliant	Compliant
2	Environmental Performance					
2.1	<b>Noise Impacts</b> Construction activities associated with the cement works upgrade shall only be carried out:		This Condition refers to the original construction project rather than ongoing operations All construction work was completed prior to these 3 reporting periods.			
	a) between 7:00 am and 6:00 pm, Monday - Friday inclusive, during periods in which the			N/A	N/A	N/A

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>cement works is shut-down, and construction noise is audible at the boundary of the site</i>					
	<i>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</i>			N/A	N/A	N/A
	<i>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</i>			N/A	N/A	N/A
	<i>d) at any time during periods in which the cement works is in operation; and</i>			N/A	N/A	N/A
	<i>e) at any time if construction noise is inaudible at the boundary of the site.</i>			N/A	N/A	N/A
2.2	<i>Subject to compliance with the requirements of this Consent, the cement works upgrade may be operated 24 hours per day, 7 days per week.</i>	Documents 1-5	At the time of this audit, the Berrima site, including CM7, operates 24 hours per day, 7 days per week Existing management measures effectively contain noise levels below contribution criteria.	Compliant	Compliant	Compliant
2.3	<i>The Applicant shall design, construct, operate and maintain all new and upgraded components forming part of the cement works upgrade to ensure that for each receiver location listed in Table 1 below, the noise level at each receiver location does not exceed the maximum allowable noise contribution limit at the receiver location specified. Refer to Table 1 in the Conditions of Consent – Maximum Allowable Noise Contribution Limit (dB(A))</i>	Documents 5 and 6	Numerous noise reduction strategies have already been implemented through Plant Maintenance programs since the 2011 compliance audit. Site remains compliant with license conditions as per Recognition Research Reports from 2018 – 2020 Existing management measures effectively contain noise levels below contribution criteria. However, Boral will ensure inspection hatches are closed when not in use and apply cladding/noise absorbing material in certain areas.	Compliant	Compliant	Compliant
2.4	The maximum allowable noise contributions identified in condition 2.3 apply under all meteorological conditions, except:	Documents 5 and 6	The sound levels were mostly the same or less than results for previous years or within measurement variation error (+/- 2-3 dB) Existing management measures effectively contain noise levels below contribution criteria. However, Boral will ensure inspection hatches are closed when not in use and apply cladding/noise absorbing material in certain areas. Noise Monitoring Report submitted by Recognition Research Pty Ltd 30/11/2019			
	<i>a) during wind speeds greater than 3 ms-1 measured at 10 metres above ground level, or</i>			Compliant	Compliant	Compliant
	<i>b) during temperature inversion conditions of greater than 3°C/100m and wind speeds of greater than 2 ms-1 measured at 10 metres above ground.</i>			Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
2.5	For the purpose of assessment of noise contributions specified under condition 2.3, noise from the cement works upgrade shall be:	Document 6	Boral undertake an annual Noise Assessment Report using an external noise consultant. These reports satisfy these conditions; however it is recommended that the noise report specifies that it is being prepared to satisfy these conditions.	Compliant	Compliant	Compliant
	a) measured 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	Document 6		Compliant	Compliant	Compliant
	b) where applicable, subject to the modification factors provided in Section 4 of the New South Wales Industrial Noise Policy (EPA, 2000).	Document 6		Compliant	Compliant	Compliant
2.6	Notwithstanding condition 2.5 of this consent, should direct measurement of noise from the site be impractical, the Applicant may employ an alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the New South Wales Industrial Noise Policy (EPA, 2000)). Details of such an alternative noise assessment method accepted by the EPA shall be submitted to the Director-General prior to the implementation of the assessment method.	Document 6	The Audit assessment validated that no alternative noise assessment method has been required. The INP provides alternate methods for determining noise compliance, in which the site has used Method 2 for CM 7 “measuring the noise emissions from each of the premises at reference locations and then calculating the noise-emission levels back to the receiver”.  This method has been used in previous AEMRs for the site and results have been accepted by DP&E.	Compliant	Compliant	Compliant
2.7	<b>Air Quality</b> The Applicant shall design, construct, operate and maintain the cement works upgrade in a manner that minimises dust emissions from the site. The raw material storage bunker associated with the cement works upgrade shall be maintained in a condition that effectively eliminates wind generated dust emissions. Dust collection systems shall be provided to all potential sources of dust production associated with the cement works upgrade.	Documents 7 and 11	Test results from annual stack monitoring of CM7 continued compliance with the total solid particle license limit of 20 mg/m <sup>3</sup> . An EPA-approved Dust Management Plan has been implemented since September 2011 and updated in April 2020 Dust is controlled through the implementation of the Dust Management Plan. Sound control measures are in place and this is supported by monitoring data, therefore operations will continue.	Compliant	Compliant	Compliant
2.8	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	Document 8 Doc 50- Section 3 Site inspection	All transport contractors are made aware of this requirement during site inductions. Section 3 of the Berrima Works Driver Code of Conduct for Truck and Heavy Vehicles Operators defines all requirements for all drivers of heavy vehicles to ensure they cover their loads to prevent spillage	Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>manner that will prevent emissions of dust from the vehicle at all times.</i>		Truck Operators were observed complying with this condition, as trucks were sighted with covers on their load and were utilising the truck wash facilities prior to leaving the site.			
2.9	<i>All trafficable areas and vehicle manoeuvring areas associated with the cement works upgrade 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.</i>	Documents 7 and 8	Boral Cement continues to investigate opportunities to reduce Fugitive Dust management throughout the site. Paved roads are continually swept with a mechanical road sweeper. Unpaved roads are watered with recycled water. Boral Cement continues to investigate opportunities to reduce Fugitive Dust throughout the site. Issues are managed through immediate corrective action and reporting through the Incident Management Database SIMS.	Compliant	Compliant	Compliant
2.10	<i>The Applicant shall design, construct, operate and maintain the cement works upgrade to ensure that total solid particle emission from the exhaust stack on CM7 (EPA Identification Point 10) does not exceed 20 mg/m<sup>3</sup> (100% concentration limit). The concentration limit specified above is based on 101.3 kPa, 273 K, dry reference conditions and shall be determined in accordance with the monitoring requirements described under condition 3.1. To avoid any doubt, this condition does not authorise the discharge or emission of any other pollutants.</i>	Doc 1- Figure 12 Doc 2- Figure 12 Doc 3- Figure 12	Annual stack testing of CM7 for the last 3 reporting periods confirm compliance with CM7 emission limit. All test certificates sighted were NATA endorsed.	Compliant	Compliant	Compliant
2.11	<b>Water Quality Impacts</b> <i>Except as may be expressly provided by a Licence under the Protection of the Environment Operations Act 1997 in relation to the cement works upgrade, section 120 of that Act (pollution of waters) shall be complied with in, and in connection with, the carrying out of the cement works upgrade.</i>		All Construction work on the Berrima site had ceased prior to the last three reporting periods.	N/A	N/A	N/A
2.12	<b>Erosion and Sediment Control</b> <i>All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility.</i>		All Construction work on the Berrima site had ceased prior to the last three reporting periods.	N/A	N/A	N/A
2.13	<i>All erosion and sedimentation controls required as part of this consent shall be maintained for</i>		Since Construction has ceased prior to this reporting period and the ground had been stabilised and rehabilitated.	N/A	N/A	N/A



Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>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.</i>					
2.14	<b>Drainage and Stormwater</b> <i>The Applicant shall ensure that the cement works upgrade does not lead to an increase in the volume or flow rate of stormwater leaving the site over and above pre-development flow conditions.</i>		All works associated with the cement works upgrade were complete prior to this audit period.	N/A	N/A	N/A
2.15	<b>Traffic and Transport</b> <i>The Applicant shall establish a bus transport system generally consistent with that identified in section 6.6.7 of the SEE referred to in condition 1.2b to transport construction employees to and from the site during the construction period.</i>		This condition refers to construction rather than the ongoing operation and therefore does not apply to this reporting period. Compliance has been demonstrated in the previous AEMRs.	N/A	N/A	N/A
2.16	<i>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 onsite 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.</i>		All works associated with the cement works upgrade were complete prior to this audit period.	N/A	N/A	N/A
2.17	<i>The Applicant shall install an advance warning signage along Taylor Avenue to advise vehicles approaching the entrance to the site of turning truck traffic in the area. This signage is to be installed prior to the commencement of operations of the cement works upgrade. Details of the design and installation of this signage are to be provided to the satisfaction of the Director-General prior to the</i>	Site Inspection	Boral Cement Berrima have installed appropriate advance "Warning Signage" along Taylor Avenue. The signs were installed and signed off prior to operations commencing but appear to have been removed during recent roadworks. As condition 2.17 does not require Boral to maintain the signage or otherwise require Boral to enter an agreement with Council for their ongoing maintenance, the previous assessment that the original signage satisfied this condition continues for this audit. This audit however recommends that Boral seek approval from Council to reinstate the signage.	Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>commencement of operations at the cement works upgrade.</i>					
2.18	<b>Waste Management Impacts</b> <i>The Applicant shall not cause, permit or allow any waste generated outside CM7 to be received at CM7 for storage, treatment, processing, reprocessing or disposal, or any waste generated at CM7 to be disposed of at CM7, except as expressly permitted by a licence under the Protection of the Environment Operations Act (POEO) 1997. This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence under the POEO Act 1997.</i>	Doc 10	No waste generated outside CM7 has been received for storage, treatment, processing, reprocessing or disposal, nor has any waste generated at CM7 or been disposed of, at CM7.  The Waste Management Plan was updated in April 2020 (Version 6)	Compliant	Compliant	Compliant
2.19	<b>Visual Amenity</b> <i>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.</i>	Doc 3 Table 23	The cement works upgrade was complete prior to this audit period. There have been no complaints regarding external lighting during the last three reporting periods Management measures are sufficient to keep light spill from the site within acceptable limits – a minimum amount of lights must be on during night-time for safety. Cement Mill 7 is a one-story building which does not spill excess light.	Compliant	Compliant	Compliant
3	Environmental Monitoring and Auditing					
3.1	<b>Air Quality</b> <i>During operation of the cement works upgrade, the Applicant shall periodically determine the pollutant concentration for total solid particles (mg/m<sup>3</sup>) at the main exhaust stack for CM7 (EPA Identification Point 10) employing sampling method TM-15. This pollutant concentration shall be determined on an annual basis. The Sampling Method shall be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.</i>	Docs 1-3 Table 13, Figure 12 Doc 11 Table 7	The cement works upgrade was complete prior to the timing of this audit.  Stack emission monitoring for Kiln 6 for standard fuels was conducted by Ektimo in July, November 2019 and February, April 2020 in accordance with the sampling methods in EPL 1698. Reports demonstrated compliance with the emission limits for standard fuels for all monitoring parameters. Table 7 of the AQMP indicates that the sampling method TM-15 is used for solid particle testing.	N/A	N/A	N/A

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
3.2	<p><i>If the results of the monitoring required under condition 3.1 and EPL 1698 indicate that the operation of any component of the cement works upgrade, when operating under design loads and normal operating conditions, exceeds the limit imposed under condition 2.10 and EPL 1698, the Applicant shall provide details of remedial measures to be implemented to reduce air quality limits to the levels required.</i></p> <p><i>Details of the remedial measures and a timetable for implementation shall be submitted to the Director-General for Approval within such period as the Director-General may require, and be accompanied by evidence that the EPA is satisfied that the remedial measures are acceptable.</i></p>	Docs 1-3 Table 12	Annual stack testing of CM7 for the three reporting periods confirms compliance with Condition 2.10 and EPL 1698 No remedial measures were required.	Compliant	Compliant	Compliant
3.3	<p><b>Auditing</b> <i>Within one year of the commencement of operation of the cement works upgrade, and every three years thereafter or as otherwise required by the Director-General, 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 Director-General, prior to the commencement of the Audit. An Environmental Audit Report shall be submitted for comment to the Director-General, the DEC and Council, within three months of the completion of the Audit. The Audit shall:</i></p>		<p>The Compliance Audit of CM7 and K6 was completed in November 2020 by Robert Byrnes with approval given by DPE All requirements defined in sections a, b, c and d of this Condition were audited and found to meet all requirements. The recommendations made in the 2017 audit included:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure Incident Reports remain open until all key stakeholders have completed their corrective actions and ongoing monitoring is undertaken to verify that all corrective/preventative actions were effective to prevent further re-occurrences.</li> <li><input type="checkbox"/> Ensure Register is revised when changes occur and communicated to all Workforce and key Stakeholders. (The Auditor observed the Legal Register had not been updated with recent changes to the Environment)</li> <li><input type="checkbox"/> The following deficiencies require attention; <ul style="list-style-type: none"> <li>▪ Potential for worker's exposure to silica quartz in CM7 Building</li> <li>▪ L7 – Concrete mound/hump – potential for workers to trip</li> </ul> </li> </ul>	Compliant	Compliant	Compliant
	a) <i>be carried out in accordance with ISO 19011: Guidelines for Quality and/or Environmental Management Systems Auditing</i>	This document		Compliant	Compliant	Compliant
	b) <i>assess compliance with the requirements of this consent, and other licences and</i>	This document		Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status			
				2018	2019	2020	
	<i>approvals that apply to the cement works upgrade</i>		<ul style="list-style-type: none"> <li>▪ Clinker Gallery on top of A Frame – door left open allowing continual dust to escape, especially when SE or southerly wind impacts onto village.</li> <li>▪ S7U Silos – small amounts of dust leakage from Building.</li> <li>▪ High points are a problem –dust escaping from the cooling air vents.</li> <li>▪ Clinker Mole door left open instead of closed</li> <li>▪ Build-up of product on floors requires cleaning to prevent dust escaping.</li> <li><input type="checkbox"/> Ensure all Issues identified as Priority 1 and Priority 2 in Section 3 of the Essential Fire Safety Measure Assessment Report No 3863772, are actioned immediately to avoid Council &amp;/or Fire and Rescue NSW finding the signatory guilty of an offence under the Regulations by not taking action.</li> <li><input type="checkbox"/> Ensure all follow-up Actions raised during HSE Inspections are effectively actioned. Ensure each element of the ISO 14001:2004 Standard is to be audited by Senior HSE Auditors during 3 year planned intervals.</li> <li><input type="checkbox"/> Ensure Management Reviews are conducted in accordance with annual planned intervals to avoid non-conformances being raised.</li> </ul> <p>The above listed recommendations were actioned over the 2018 reporting period.</p>				
	c) <i>assess the cement works upgrade operations against the predictions made and conclusions drawn in the SEE and other documents listed under conditions 1.1 a) to 1.1 f), inclusive; and</i>	This document			Compliant	Compliant	Compliant
	d) <i>review the effectiveness of the environmental management of the cement works upgrade, including any environmental impact mitigation works.</i>	This document			Compliant	Compliant	Compliant
3.4	<i>The Director-General may, having considered any submission made by the Applicant, consent to the incorporation of the environmental auditing requirements listed under condition 3.3 into the Environmental Audit Report required under the conditions of consent for other development at the site.</i>	Interview	At the time of this Audit - no action was required in any of the three reporting periods.	Compliant	Compliant	Compliant	
4	<b>Community Information and Involvement</b>						
4.1	<i>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</i>		Where appropriate, documents are made available electronically via the Boral Cement website.	Compliant	Compliant	Compliant	

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>the site for inspection by visitors, and in an appropriate electronic format on the Applicant's internet site, should one exist.</i>		All non-confidential documentation in hard copy format, is made available for inspection at the Boral Cement Berrima site on request.			
4.2	<b>Complaints Procedure</b> <i>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):</i>	Site inspection Document 51	The site complaints procedure continues to be effectively managed. Contact details are sign-posted at each site entrance and include a contact telephone number, postal address and email address. Contact details are also provided on the Boral website.  The complaints register at the time of this audit was only updated to May 2019 online. The register was sighted and the updated version was to be uploaded.	Compliant	Compliant	Compliant
	<i>a) a telephone number on which complaints about operations on the site may be registered</i>			Compliant	Compliant	Compliant
	<i>b) a postal address to which written complaints may be sent; and</i>			Compliant	Compliant	Compliant
	<i>c) an email address to which electronic complaints may be transmitted,</i>			Compliant	Compliant	Compliant
4.3	<i>The Applicant shall record details of all complaints received through the means listed under condition 4.2 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:</i>	Docs 1-3 Appendix B	Complaints are addressed in AEMRs and are attached as Appendix 2 to the AMER documents. The site Complaint Register is up to date in all 3 AEMR documents reviewed. Noise and dust complaints are forwarded to EPA in the Annual Returns and the DP&E in the AEMRs. Boral Cement Berrima continues to investigate strategies to actively reduce its dust and noise impacts on the local community as per the Management Plans.  It was not clear if the time of complaint was recorded in every case	Compliant	Compliant	Compliant
	<i>a) the date and time, where relevant, of the complaint;</i>			Compliant	Compliant	Compliant
	<i>b) the means by which the complaint was made (telephone, mail or email);</i>			Compliant	Compliant	Compliant
	<i>c) any personal details of the complainant provided, or if no details were provided, a note to that effect;</i>			Compliant	Compliant	Compliant
	<i>d) the nature of the complaint;</i>			Compliant	Compliant	Compliant
	<i>e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and</i>			Compliant	Compliant	Compliant
	<i>f) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.</i>			Compliant	Compliant	Compliant
5	Environmental Management					
5.1	<b>Construction Environmental Management Plan</b>					

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>The Applicant shall prepare and implement a Construction Environmental Management Plan (CEMP) to outline environmental management practices and procedures to be followed during the construction of the cement works upgrade. The Plan shall include, but not necessarily be limited to:</i>					
	<i>a) a description of all activities to be undertaken on the site during construction, including an indication of stages of construction, where relevant</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>b) statutory and other obligations that the Applicant is required to fulfil during construction, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>c) specific consideration of measures to address any requirements of the Department and the DEC during construction</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>d) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>e) a description of the roles and responsibilities for all relevant employees involved in construction; and</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>f) the Management Plans listed under condition 5.2 of this consent.</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A
	<i>The CEMP shall be submitted for the approval of the Director-General prior to the commencement of construction of the cement works upgrade. Notwithstanding, where construction work is to be undertaken in stages, the Applicant may, subject to the agreement of the Director-General, stage the submission of the CEMP consistent with the staging of</i>		All construction activities were completed prior to this reporting period.	N/A	N/A	N/A

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>activities relating to that work. Construction of each stage shall not commence until written approval has been received from the Director-General. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the CEMP to the DEC as soon as practicable.</i>					
5.2	As part of the CEMP for the cement works upgrade, required under condition 5.1 of this consent, the Applicant shall prepare and implement the following Management Plans:		All construction activities were completed prior to the last three reporting periods. Boral Cement Berrima continues to monitor levels of noise emissions from its operations.			
	a) A <b>Noise Management Plan</b> to outline measures to minimise the impacts from the construction of the cement works upgrade on local noise levels. The Plan shall address the requirements of the DEC and shall include, but not necessarily be limited to:		Noise monitoring was last conducted by external contractors Recognition Research during September- November 2019. A Report was issued on 30 November 2019. The October 2020 assessment was undertaken but the final report has not been received.	N/A	N/A	N/A
	i. identification of all major sources of noise that may be emitted as a result of the construction of the cement works upgrade			N/A	N/A	N/A
	ii. specification of the noise criteria as it applies to the particular activity			N/A	N/A	N/A
	iii. procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the DEC			N/A	N/A	N/A
	iv. protocols for the minimisation of noise emissions			N/A	N/A	N/A
	v. description of procedures to be undertaken if any non-compliance is detected.			N/A	N/A	N/A
	b) A <b>Traffic Management Plan</b> to outline management of traffic conflicts associated with the construction of the cement works upgrade. The Plan shall include, but not necessarily be limited to:		All construction activities were completed prior to the last three reporting periods.			
	i. details of traffic routes used by construction vehicles			N/A	N/A	N/A

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	ii. <i>the number and type of vehicles to be used in the construction of the cement works upgrade, and their movements to, from and within the site per day</i>			N/A	N/A	N/A
	iii. <i>minimum requirements for vehicle maintenance to address noise and exhaust emissions</i>			N/A	N/A	N/A
	iv. <i>speed limits to be observed along routes to and from the sites and within the site; and</i>			N/A	N/A	N/A
	v. <i>behaviour requirements for vehicle drivers to and from the site and within the site.</i>			N/A	N/A	N/A
	c) <b>An Erosion and Sedimentation Management Plan</b> to detail measures to minimise erosion during construction of the cement works upgrade. The Plan shall address the requirements of the DEC and shall include, but not necessarily be limited to:		Since all construction activities were completed prior to the last three reporting periods, IEC recommends the DP&E removes this condition out of the Consent as it refers to the original project construction and not to ongoing operations.			
	i) <i>details of erosion, sediment and surface water pollution control measures and practices to be implemented during construction of the cement works upgrade; and</i>			N/A	N/A	N/A
	ii) <i>demonstration that erosion and sediment control measures have been prepared in accordance with the requirements for such plans outlined in Landcom's manual titled Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, March 2004.</i>			N/A	N/A	N/A
5.3	The Applicant shall prepare and implement an <b>Operation Environmental Management Plan (OEMP)</b> to detail an environmental management framework, practices and procedures to be followed during the		The original compliance submission and approval of the OEMP was detailed in the 2007/2008 AEMR The OEMP was recently updated in April 2020 (Version 6) to address the outcomes of the MOD9 POPT, MOD 11 Hi-Cal and MOD 12 Isotainer and site noise limits.			



Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	operation of the cement works upgrade. The plan shall include, but not necessarily be limited to:					
	a) <i>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, Licenses, approvals and consultations;</i>	Document 4 Sections 2.1, 2.2, 2.3		Compliant	Compliant	Compliant
	b) <i>a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;</i>	Document 4 Section 4		Compliant	Compliant	Compliant
	c) <i>overall environmental policies and principles to be applied to the operation of the cement works upgrade;</i>	Document 4 Section 3		Compliant	Compliant	Compliant
	d) <i>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;</i>	Documents 5, 7-11 Section 7		Compliant	Compliant	Compliant
	e) <i>management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent;</i>	Document 4 Section 3		Compliant	Compliant	Compliant
	f) <i>the Management Plans listed under condition 0 of this consent; and</i>	Document 4 Appendices		Compliant	Compliant	Compliant
	g) <i>the environmental monitoring requirements outlined under conditions 3.1 to 3.4 of this consent, inclusive.</i>	This document Document 11		Compliant	Compliant	Compliant
	The OEMP shall be submitted for the approval of the Director-General no later than one month prior to the commencement of operation of the cement works upgrade, or within such period otherwise agreed by the Director-General. Operation shall not commence until written approval has been received from the Director-General. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of		The OEMP was submitted prior to the cement works upgrade and before the time of this audit.	Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	the OEMP to the DEC and Council as soon as practicable.					
5.4	The Director-General may, having considered any submission made by the Applicant, consent to the incorporation of the requirements listed under condition 5.3 into the AEMR required under the conditions of consent for other development at the site		No submissions have been made by Boral Cement	N/A	N/A	N/A
5.5	As part of the OEMP for the cement works upgrade, required under condition 5.3 of this consent, the Applicant shall prepare and implement the following Management Plans:					
	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 DEC and shall include, but not necessarily be limited to:	Document 5	The Berrima Noise Management Plan (NMP); CMT-ENV-004 version 9 was last updated in April 2020 External noise monitoring undertaken by Recognition research, for the last 3 reporting periods, adequately demonstrates Boral has continued a noise monitoring program to identify the sources of site noise that contribute to off-site noise complaints and has implemented a number of improvement plans since the last audit, to address these concerns.			
	i) <i>identification of all major sources of noise that may be emitted as a result of the operation of the cement works upgrade;</i>	Section 6.1		Compliant	Compliant	Compliant
	ii) <i>specification of the noise criteria as it applies to the particular activity;</i>	Section 5.1		Compliant	Compliant	Compliant
	iii) <i>procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the DEC;</i>	Section 5.2		Compliant	Compliant	Compliant
	iv) <i>protocols for the minimisation of noise emissions;</i>	Sections 6.2 and 6.3		Compliant	Compliant	Compliant
	v) <i>description of procedures to be undertaken if any non-compliance is detected.</i>	Section 8.1		Compliant	Compliant	Compliant
	b) 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 DEC, and shall include, but not necessarily be limited to:	Document 11	Air Quality monitoring and reporting to the EPA continues to occur in each Licensing period. The Air Quality Management Plan (Version 6) 28/04/2020 includes the following requirements: i. identification of all major sources of particulate and gaseous air pollutants that may be emitted as result of the operation of the			

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>i. identification of all major sources of particulate 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;</i>	6.4(b)(i): 5.1 (Emission sources), Table 4	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.	Compliant	Compliant	Compliant
	<i>ii. monitoring of particulate emissions from the cement works upgrade, in accordance with any requirements of the DEC;</i>	6.4(b)(ii): 5.2 (Monitoring/discharge locations and Figure 2), 5.2 (Stack emission limits), 5.2 (Monitoring requirements)		Compliant	Compliant	Compliant
	<i>iii. procedures for the minimisation of particulate emissions from the cement works upgrade, and the reduction of these emissions over time, where appropriate;</i>	6.4(b)(iii): 5.2 (Air quality management controls)		Compliant	Compliant	Compliant
	<i>iv. protocols for regular maintenance of process equipment to minimise the potential for dust emissions;</i>	6.4(b)(iv): Work instructions not attached to AQMP		Compliant	Compliant	Compliant
	<i>v. description of procedures to be undertaken if any non-compliance is detected.</i>	6.4(b)(v): 5.2 (Air quality management controls), dust management plan		Compliant	Compliant	Compliant
	<i>c) 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.</i>	Document 9		A Water Supply Strategy was initially prepared in 2003 and is now incorporated into the Water Management Plan. Water Management Plan was last reviewed in April 2020 and is part of Berrima's EMP and the plan/s are required to be formally reviewed 3 yearly.	Compliant	Compliant
	<i>d) Transport Management Plan to outline management of traffic conflicts associated with the operation of the cement works upgrade. The Code shall include, but not necessarily be limited to:</i>	Document 8	The Traffic Management Plan was last updated in August 2017. Appendix 2 outlines the designated Front End Loader and Bulk Truck Traffic Routes. The Roles and Responsibilities Section 3 of the plan summarises the personnel code of conduct to outline conditions d)iii and d)iv			
	<i>i) details of any restriction to traffic routes;</i>	Appendix 2 of OEMP		Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	ii) <i>minimum requirements for vehicle maintenance to address noise and exhaust emissions;</i>	Boral Driver Guide on intranet site	The transport code of conduct is also supplied in Appendix 9 of the OEMP Light vehicles are to be serviced and maintained by the regular driver/responsible person in accordance with the Boral Driver Guide (available on the intranet: <a href="http://intranet.boral.com.au/Shared_Business_Services/docs/TFM-Boral-driver-guide.pdf">http://intranet.boral.com.au/Shared_Business_Services/docs/TFM-Boral-driver-guide.pdf</a> )	Compliant	Compliant	Compliant
	iii) <i>speed limits to be observed along routes to and from the sites and within the site; and</i>	Section 4.11		Compliant	Compliant	Compliant
	iv) <i>behaviour requirements for vehicle drivers to and from the site and within the site.</i>	Section 3		Compliant	Compliant	Compliant
5.6	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 5.3 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 Director-General, Council and the DEC 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.	Docs 4-11	Boral Cement had undertaken a full review of their site OEMP and the associated specific EMPs (Water, Air, Noise, Waste, Dust and Traffic, Emergency, PIRMP) in April 2020. The most recent OEMP and associated appendices are all available on the Boral webpage.	Compliant	Compliant	Compliant
6.0	<b>Environmental Reporting</b>					
6.1	<b>Incident Reporting</b> The Applicant shall notify the DEC and the Director-General of any incident with actual or potential significant off-site impacts on people or the biophysical environment as soon as practicable after the occurrence of the incident. The Applicant shall provide written details of the incident to the EPA and the Director-General within seven days of the date on which the incident occurred.	Interview	All Incidents are captured in an online Incident Report Register called SEquence At the time of this audit there had not been any environmental incidents associated with Cement Mill 7.	Compliant	Compliant	Compliant
6.2	The Applicant shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this consent, reported in accordance with condition	Interview	The Director General has not required Boral Cement to address any incidents relating to Cement Mill 7 during the three reporting periods nor at the time this audit was undertaken.	Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	6.1, within such period as the Director-General may agree.					
6.3	<p><b>Annual Performance Reporting</b> The Applicant shall, throughout the life of the cement works upgrade, prepare and submit for the approval of the Director-General, 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 5.3 of this consent), the conditions of this consent and other Licenses and approvals relating to the cement works upgrade. The AEMR shall include, but not necessarily be limited to:</p>		An AEMR is submitted by Boral on an annual basis to cover the period from 1 <sup>st</sup> May to 30 <sup>th</sup> April. The 2018, 2019 and 2020 AEMRs include the information required to satisfy condition 6.3.	Compliant	Compliant	Compliant
	a) <i>details of compliance with the conditions of this consent</i>	Doc 1- 3 Section 7		Compliant	Compliant	Compliant
	b) <i>a copy of the Complaints Register (refer to condition 4.3 of this consent) for the preceding twelve month period (exclusive of personal details), and details of how these complaints were addressed and resolved</i>	Doc 1- 3 Appendix B		Compliant	Compliant	Compliant
	c) <i>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 1.1</i>	Doc 1- 3 Section 5		Compliant	Compliant	Compliant
	d) <i>results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person</i>	Doc 1- 3 Section 5		Compliant	Compliant	Compliant
	e) <i>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</i>	Doc 1- Doc 2- Doc 3-		Compliant	Compliant	Compliant

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
	<i>the action taken to prevent recurrence of that type of incident</i>					
	f) <i>identification of trends in monitoring data over the life of the cement works upgrade to date</i>	Doc 1- 3 Section 5		Compliant	Compliant	Compliant
	g) <i>a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period; and</i>	Doc 1- Doc 2- Doc 3-		Compliant	Compliant	Compliant
	h) <i>environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results.</i>	Doc 1- 3 Section 8		Compliant	Compliant	Compliant
6.4	<b>Annual Performance Reporting</b> The Applicant shall submit a copy of the AEMR to the Director-General, the DEC and Council every year, with the first AEMR to be submitted within twelve months of commencement of operation of the cement works upgrade; and the second and subsequent AEMRs to be submitted concurrently with the DEC's Annual Return.	Correspondence sighted	All Boral's external reporting obligations have been met on time, including the annual report to EPA and the AEMRs to DP&E.	Compliant	Compliant	Compliant
6.5	The Director-General 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 DEC and/or Council. Any action required to be undertaken shall be completed within such period as the Director-General may agree.		No other requests have been submitted to Boral in relation to this Condition for Cement Mill 7 There were no actions identified by the DPE after submitting the AEMRs prepared for the development consents for Kiln 6 and Mill 7 for the 2018, 2019 and 2020 reporting periods.	Compliant	Compliant	Compliant
6.6	The Director-General may, having considered any submission made by the Applicant, consent to the incorporation of the requirements listed under condition 6.3 into the AEMR required under the conditions of consent for other development at the site.		To date, no submissions were made to the Director-General for consideration.	Compliant	Compliant	Compliant

## Appendix A2 –Kiln 6- Conditions of Consent

Condition	Requirement	Evidence Collected	Audit Findings/ Recommendations	Compliance Status		
				2018	2019	2020
1	General					
1.1	<p><b>Obligation to Minimise Harm to the Environment</b></p> <p><i>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.</i></p>		<p>Boral Cement continues to continually improve their EMS at the Berrima site.</p> <p>Boral Cement continues to maintain regular communications with the EPA and DPE to pre-empt and address potential issues, monitor compliance, and work cooperatively to ensure legislated requirements are understood and delivered in an efficient and timely manner.</p> <p>The non-compliances noted in this audit have not resulted in harm to the environment.</p>	Compliant	Compliant	Compliant
1.2	<p><b>Scope of Development</b></p> <p>The Applicant shall carry out the development generally in accordance with:</p>		<p>At the time of this audit, the operation of Kiln 6 had been carried out in accordance with the requirements of this Condition.</p>			
	a) <i>Development Application No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002;</i>			Compliant	Compliant	Compliant
	b) <i>Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects, dated November 2002 and prepared by Olsen Environmental Consulting;</i>			Compliant	Compliant	Compliant
	c) <i>Noise Impact Assessment for Kiln 6 Upgrade Project, dated 4 November 2002 and prepared by Hatch Associates Pty Limited;</i>			Compliant	Compliant	Compliant
	d) <i>Air Quality Review – New Berrima Plant, Number 6 Kiln Upgrade, dated 19 November 2002 and prepared by Holmes Air Sciences;</i>			Compliant	Compliant	Compliant
	e) <i>additional information supplied to the Department by the Applicant regarding noise, air and water dated 22 January 2003;</i>			Compliant	Compliant	Compliant
	f) <i>additional information supplied to the Department by the Applicant regarding</i>			Compliant	Compliant	Compliant

	<i>the design of the second pre-heater tower dated 4 February 2003;</i>						
	<i>g) additional information supplied to the Department by the Applicant regarding air and noise dated 13 February 2003;</i>				Compliant	Compliant	Compliant
	<i>h) additional information supplied to the EPA by the Applicant regarding discharge points from Lake Quality dated 4 March 2003 &amp; forwarded to the Dept .by the Applicant on 31 March 2003;</i>				Compliant	Compliant	Compliant
	<i>i) modification application MOD-2-1-2004-i and accompanying documents lodged on 5 January 2004, including:</i>				Compliant	Compliant	Compliant
	<i>i) the Statement of Environmental Effects, Berrima Kiln 6, Non-Standard Fuels and Materials prepared by Blue Circle Southern Cement; and</i>				Compliant	Compliant	Compliant
	<i>ii) Blue Circle Southern Cement Berrima Plant, Proposed Non-Standard Fuels Modifications, Additional Information, dated 3 June 2004;</i>				Compliant	Compliant	Compliant
	<i>j) modification application MOD-109-9-2006-i, relating to the definition of HiCal50 as an alternative fuel and prohibition of hazardous wastes;</i>				Compliant	Compliant	Compliant
	<i>k) modification application MOD-12-2-2007-I, to permit trial use of tyre chips;</i>				Compliant	Compliant	Compliant
	<i>l) MOD 4 to vary the usage rate of coke fines;</i>				Compliant	Compliant	Compliant
	<i>m) MOD 5 to permit coal deliveries by rail;</i>				Compliant	Compliant	Compliant
	<i>n) MOD 6 to permit coal stockpiling on the site, as detailed in Berrima Cement Works Modification 6: Environmental Assessment, Coal Stockpiling for Sale, prepared by EMGA Mitchell McLennan and dated 16 June 2014, and in</i>				Compliant	Compliant	Compliant



	<i>Response to Submissions: Berrima Colliery Continued Operations MP 10_0172, Berrima Cement Works DA No. 401-11-2002-i MOD 6, prepared by EMGA Mitchell McLennan and dated November 2014;</i>						
	<i>o) 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>				Compliant	Compliant	Compliant
	<i>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</i>				Compliant	Compliant	Compliant
	<i>ii. the Response to Submissions report entitled 'Berrima Cement Works – Kiln 6 Development Consent Modification 7', dated 7 December 2014 and prepared by Boral Cement Limited.</i>				Compliant	Compliant	Compliant
	<i>p) MOD 9 refer to the use of Solid Waste Derived Fuels as a non-standard fuel for Kiln 6 and accompanying documents:</i>				Compliant	Compliant	Compliant
	<i>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</i>	Documents 4, 14			Compliant	Compliant	Compliant
	<i>ii. the Response to Submissions report entitled 'Boral Berrima Cement Works Modification 9 –</i>	Document 36			Compliant	Compliant	Compliant

	<i>Use of Solid Waste Derived Fuels Response to Submissions' dated 22 January 2016 and prepared by SLR Consulting Australia Pty Ltd.</i>						
	<b>Condition Introduced April 2019</b> 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				Compliant	Compliant	Compliant
	<b>Condition Introduced October 2019</b> 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.				Compliant	Compliant	Compliant
	<b>Condition Introduced April 2020</b> 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.				Compliant	Compliant	Compliant
1.3	<b>Limits of Consent</b> The Applicant shall operate the cement works upgrade to meet the following requirements:	Documents 1-3	Kiln 6 was the only kiln used on site during the compliance audit. Clinker production remained below the approval limit: 2017/28 FY: 1,470,989t				

	a) the upgraded Kiln 6 is to be utilised as the primary and principal kiln on the site; and		2018/19 reporting period: 1,443,830t 2019/20 reporting period: 1,314,466t	Compliant	Compliant	Compliant
	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).			Compliant	Compliant	Compliant
1.3A	Deliveries of coal to the site may be made by road or rail transport	Doc 4 Table 1	IEC verified Coal had been delivered to cement works by road during 2018-2020.	Compliant	Compliant	Compliant
1.4A	<b>Use of Non-Standard Fuels</b> 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 permitted to be received at the site for use at the upgraded Kiln 6 development at the quantities, firing rates and proportions specified in Table 1 in conditions of consent.	Doc 46 Docs 1-3 Table 21	The fuel and NSF tonnes per annum for the 3 periods of interest have remained below the quantities outlined in Table 1 in the consent.  The majority of fuel consumed was coal. Small amounts of diesel are used during kiln start-ups. The site commenced the use of SWDF's in mid 2020.	Compliant	Compliant	Compliant
1.4B	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 the Fire and Rescue NSW 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 Secretary	Site Inspection  Docs 1-3 Table 21	Storage facilities and kiln feeding infrastructure for the AKF5 NSF have been approved. Stockpile size/height remains within the guidelines. No AKF 5 was received, stored or used at the site during the 3 year audit period.	Compliant	Compliant	Compliant
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	Docs 1-3 Table 21	Compliance of this condition was confirmed in the 2007-2008 AEMR. The site recommenced the use of HiCal50 in 2020.	Compliant	Compliant	Compliant

Secretary. In particular, the detailed design shall:					
a) <i>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;</i>	Site Inspection	Site inspection shows evidence of appropriate bunding of storage facilities on designs.	Compliant	Compliant	Compliant
b) <i>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 storm water management system, and demonstrate that these measures were developed in consultation with the Sydney Catchment Authority and Wingecarribee Shire Council; and</i>	Site Inspection	Site inspection showed evidence of adequate treatment of liquids prior to discharge Oil separator installed	Compliant	Compliant	Compliant
c) <i>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 the Fire and Rescue NSW</i>	OEMP	Appropriate Fire Safety Study prepared and presented in OEMP. Accordance with guidelines and Fire and Rescue NSW consultation	Compliant	Compliant	Compliant
A construction certificate must not be issued in relation to any necessary storage facilities and kiln feeding infrastructure until the 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	Tank bunding inspected	Detailed design parameters approved by Secretary and construction certificate issued Storage facilities and NFS infrastructure constructed in accordance with detailed design drawings.	Compliant	Compliant	Compliant

	been constructed in accordance with the detailed design parameters approved by the Secretary.					
1.4CA	Notwithstanding condition 1.4C 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:	Docs 1-3 Table 21	AKF5 has not been used on site since 2007 and does not fall under this three-year audit period.			
	a) <i>no more than 205 tonnes of 2" chipped tyres is to be received at the site for the trial;</i>			N/A	N/A	N/A
	b) <i>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;</i>			N/A	N/A	N/A
	c) <i>the trial shall be undertaken for the purpose of investigation design and operational aspects of the full scale use of AKF5</i>			N/A	N/A	N/A
	d) <i>the trial shall be undertaken in full compliance with the environmental performance standards stipulated in this consent and the requirements of the EPL for the site</i>			N/A	N/A	N/A
	e) <i>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;</i>			N/A	N/A	N/A
	f) <i>trial materials shall be stored in an area that is sealed, or otherwise treated to the satisfaction of the Secretary, and away from all potential ignition sources;</i>			N/A	N/A	N/A

	g) <i>the Applicant shall notify the 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;</i>			N/A	N/A	N/A
	h) <i>the Applicant shall notify the Secretary, the EPA and the Community Liaison Group prior to the commencement of the trial; and</i>			N/A	N/A	N/A
	<i>The Applicant shall report the status and outcomes of the trial to the 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.</i>			N/A	N/A	N/A
1.4D	<i>Only Standard Fuels and the Group 1 Non-Standard Fuel, Hi Cal 50, are permitted to be used at the development during start-up and shutdown.</i>	Site Interview Document 3 Table 21	Non-standard fuels are not used during start-up or shut down. Controls are in place to ensure lockout of NSF during start-up.	Compliant	Compliant	Compliant
1.4E	<i>Non-Standard Fuels are not permitted to be stored at the site for longer than 3 months, except with the written permission of the Secretary</i>	Email Correspondence from DPIE extending storage of Hi Cal for 3 years	Written approval was received from the Secretary on the 4/4/2019 to store 17 500t of HiCal 50 for three years. Storage was modified on 12/7/19 to enable processing on site.	Compliant	Compliant	Compliant
1.4F	<i>No Non-Standard Fuel is permitted to be received at, or used at the development, unless it complies with:</i>					
	a) <i>the handling, transporting, sampling, analysis and quality control requirements of this consent;</i>	Docs 15 and 17	Characterisation sample analysis and quality assurance control procedures were reviewed for suppliers including Brandown and ResourceCo.	Compliant	Compliant	Compliant
	b) <i>any requirements of a licence issued under the Protection of the Environment Operations Act 1997 for the site &amp;</i>	Site Inspection Doc 18	Deliveries of non-standard fuels were in compliance of the POEOA. Ektimo Annual Emission Testing reports and PoP 6-month reports were reviewed during this audit.	Compliant	Compliant	Compliant
	c) <i>the fuel specification for that specific fuel.</i>	Doc 19 and 20	Composite samples of NSF tested by supplier and by Boral. Any out of specification material is returned.	Compliant	Compliant	Compliant
1.4G	<i>Prior to the receipt of the first batch of a Group 1 Non-Standard Fuel from a particular supplier, the Applicant shall certify</i>		Hi Cal certificate not used since 2007	N/A	N/A	N/A

	<i>in writing to the Secretary that the supplier has implemented appropriate quality control and quality assurance procedures to ensure that the Applicant's responsibilities under this consent can be met. At the request of the 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.</i>					
1.4H	<i>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 Secretary that the supplier has met the pre-qualification requirements set out in the approved Quality Assurance and Control Procedure for Receipt and NSW Use of Solid Waste Derived Fuels (Appendix 1 of the consent) and that the Applicant's Responsibilities under this consent can be met. At the request of the 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</i>	Docs 21- 23	Letters of Boral audits of Resource Co and Brandown Pty Ltd confirms the pre-qualification requirements and responsibilities have been met for each supplier Capability compliance checklists presented for each supplier Supplier audits conducted	Compliant	Compliant	Compliant
1.4I	<i>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 8500C for a minimum of two seconds. Operational procedures must include interlocks in the process control system</i>	Operational procedures sighted during interview	Operational procedures for co-firing SWDF submitted prior to receipt of first batch as part of the POPT Plan process. Documentation was sighted during interview.	Compliant	Compliant	Compliant
1.4J	<b>Condition Introduced October 2019</b>	Site interview	Hi-Cal is blended within the coal blending plant when in use.	Compliant	Compliant	Compliant

	<i>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%.</i>		Prepare a one point lesson or SWMS on blending process to ensure blends do not exceed 4%.			
1.6	<b>Statutory Requirements</b> <i>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.</i>		All required licenses, permits and approvals continue being maintained. There have been no further modifications to the Development Consent since 7 April 2020. The Environmental Protection License (EPL) No.1698 version date 18-12-2019 was current at the time of this audit. This condition also requires Boral to comply with such licenses, permits and approvals. In this regard, a non-compliance with the EPL is a corresponding non-compliance with the consent	Compliant	Non Compliant	Non Compliant
1.11	<b>Staged Submission of Strategies, Plans or Programs</b> <i>With the written consent of the Secretary, the Applicant may submit any strategy, plan or program required by this consent on a progressive basis and/or combines any strategy, plan or program required by this consent.</i>		Boral Cement Berrima has submitted to and received approval for its Final Draft Version of the Construction Environmental Management Plan- Berrima Solid Waste Derived Fuels Project- Kiln 6 Upgrade MOD on the 18/9/2017.	Compliant	Compliant	Compliant
1.12	The Applicant must comply with all reasonable requirements of the Secretary arising from the Department's assessment of:		Boral Cement has complied with all reasonable requirements of the Secretary arising from the Department's assessment			
	<i>a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and</i>			Compliant	Compliant	Compliant
	<i>b) the implementation of any actions or measures contained in these documents</i>			Compliant	Compliant	Compliant
<b>2</b>	<b>Construction and Occupation Certification</b>					
2.1	In relation to the construction and occupation of the cement works upgrade, the Applicant shall provide to the Secretary and Council the following:		The construction of an extension to the SWDF Shed occurred during this audit period.			
	<i>a) written notification of the appointment of a Principal Certifying Authority;</i>			N/A	N/A	N/A



	b) copies of all Construction Certificates issued for the cement works upgrade;			N/A	N/A	N/A
	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;			N/A	N/A	N/A
	d) copies of all Occupation Certificates issued for the cement works upgrade; and			N/A	N/A	N/A
	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.			N/A	N/A	N/A
3	Environmental Performance					
3.1	<b>Construction Noise</b> Construction activities associated with the cement works upgrade shall only be carried out:		The construction of an extension to the SWDF Shed occurred during this audit period. Compliance has been demonstrated in the previous AEMR's.			
	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;			N/A	N/A	N/A
	b) between 7:00 am and 1:00 pm on Saturdays, during periods in which the cement works is shut-down, and			N/A	N/A	N/A

	<i>construction noise is audible at the boundary of the site;</i>					
	<i>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;</i>			N/A	N/A	N/A
	<i>d) at any time during periods in which the cement works is in operation; and</i>			N/A	N/A	N/A
	<i>e) at any time if construction noise is inaudible at the boundary of the site.</i>			N/A	N/A	N/A
3.1A	<i>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</i>		The construction of an extension to the SWDF Shed occurred during this audit period. Construction Environmental Management Plan of Berrima Solid Waste Derived Fuels Project has been finalized following comments by the DP&E, EPA and Council- authorized by Rod Wallace - Planning & Development Manager on 18/9/2017.	Compliant	Compliant	Compliant
3.1B	<i>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.</i>		The construction of an extension to the SWDF Shed occurred during this audit period.	Compliant	Compliant	Compliant
3.2	<b>Operational Noise</b> <i>Subject to compliance with the requirements of this consent, the cement works upgrade may be operated 24 hours per day, 7 days of the week.</i>	Docs 5 and 6	At the time of this audit, the Boral Cement works, including Kiln 6, continues to operate 24 hours a day, 7 days a week. The noise assessment demonstrated that Kiln 6 operated within the objectives required to achieve contribution criteria during the reporting period.	Compliant	Compliant	Compliant
3.3	<b>Condition amended in April 2020</b> <i>Noise generated at the site must not exceed the noise limits at the times and location specified in Table 2 of the Conditions of Consent</i>	Docs 5 and 6	At the time of this audit, the Boral Cement Plant was compliant with its licence conditions for noise. Numerous noise reduction strategies such as the replacement of kiln cooler fans with a quieter type are geared towards removing environmental noise issues and ensuring inspection hatches are closed when not in use and apply cladding/noise absorbing material in certain areas	Compliant	Compliant	Compliant

3.3A	<b>Condition amended in April 2020</b> <i>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.</i>		Noted	Compliant	Compliant	Compliant
3.4	<b>Condition amended in April 2020</b> <i>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.</i>		Reversing alarm on isotainer loading vehicles meet requirements	Compliant	Compliant	Compliant
3.5	<b>Condition amended in April 2020</b> <i>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</i>	Site Inspection Interview	Details of this condition was discussed during the site interview however no locomotives were located within the isotainer spur line at the time of the site inspection.	Compliant	Compliant	Compliant
3.6	<b>Condition amended in April 2020</b> <i>The Applicant must implement best practice technology with respect to the isotainer reach stacker to reduce <math>L_{Amax}</math> noise events.</i>	Doc 5 Attachment 1	This is a very quiet operation, staff are careful whilst stacking so that no banging occurs.	Compliant	Compliant	Compliant
3.7	<b>Air Quality- Dust Minimisation</b> <i>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.</i>	Docs 1-3, 7	Boral Cement continues to investigate opportunities to reduce Fugitive Dust management throughout the site. Deposited dust levels and HVAS data have remained below EPA Guidelines over the past three reporting periods. An EPA-approved Dust Management Plan has been implemented since September 2011 and updated in April 2020. A new real-time dust monitor will be commissioned in the 2020-21 period which data will be used in the new Dust TARPs. 78 dust related complaints were received in the 2019-20 reporting period.	Compliant	Compliant	Compliant
3.7A	<i>The Applicant shall apply all reasonable and feasible measures to minimise the generation of dust from coal stockpiles, including but not necessarily limited to:</i>	Docs 1-3, 7	The following Controls were operational and appeared to be effective in minimising fugitive dust from coal stockpiles; -compaction of stockpile batters (being pushed up with a loader),			

	a) <i>compaction of stockpile batters to minimise pick up of dust;</i>		-wetting down with a water cart in dry weather conditions and -stopping loading/unloading operations in high winds. The site's re-vegetation program included planting in the areas surrounding the stockpiles to create a windbreak and a dust screen.	Compliant	Compliant	Compliant
	b) <i>installation of water sprays or use of a water cart to keep stockpile surfaces wet, if dust is being generated; and</i>			Compliant	Compliant	Compliant
	c) <i>cessation of stockpile generation during periods of high wind, if dust generation cannot be controlled.</i>			Compliant	Compliant	Compliant
3.8	<i>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.</i>	Docs 1-3, 7 Site inspection	The NSW Chain of Responsibility Legislation clearly defines the requirements for all vehicles >10 tonnes - loads must be covered and restrained. All transport contractors are made aware of this requirement during site inductions. Section 3 of the Driver Code of Conduct for Truck and Heavy Vehicles Operators (latest revision 2017) states the requirements for all heavy vehicle drivers. Truck Operators were observed complying with the "Driver Code of Conduct". Trucks were sighted with covers on their load and were utilizing the truck wash facilities prior to leaving the site.	Compliant	Compliant	Compliant
3.9	<i>All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation or emission of windblown or traffic generated dust from the site at all times.</i>	Docs 1-3, 7	Some unsealed roads have been sealed in the previous years and some have been closed and recently re-vegetated. Paved roads are swept with a mechanical road sweeper which undergoes regular maintenance to ensure efficient work. Unpaved roads are watered with recycled water. The 2-wheel wash stations are continue to be used effectively. Activities are modified to take place undercover, or are postponed during high wind events.	Compliant	Compliant	Compliant
3.10	<b>Air Quality Discharges</b> <i>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.</i>	Doc 1 Table 12 Doc 2 Table 12, Section 7, Appendices 3 and 4 Doc 3 Table 12	Stack emission monitoring for Kiln 6 standard fuels was conducted by Ektimo in July August 2018, July and November 2019 and February and April 2020. Results showed compliance with the emission limits for standard fuels for all monitoring parameters. NSF Stack Testing was conducted in 2019 with one exceedance for solid particles.	Compliant	Compliant	Compliant
	<b>SOILS AND WATER QUALITY</b>					

3.11	<i>Construction Soil and Water Management 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</i>	Docs 1-3 Table 15 Site inspection	Water only overflows from Lake Quality to Stony Creek during relatively high and sustained rainfall or large storms. During the audit period there were five overflows from the Lake on the 27/2/18, 31/12/18, 8/4/19, 10/2/20 and 14/2/20. The results of all flows were within guidelines apart from a slightly elevated pH value which occurs due to alkaline nature of raw materials and products handled on site.	Compliant	Compliant	Compliant
3.12	<i>All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility</i>	Docs 1-3 Table 15 Doc 52	The CEMP was authorized on 18/9/17 was implemented throughout the construction of the SWDF facility. Aggregate was used to stabilise disturbed ground, and the wheel wash was used when required. No sediment tracking was observed from the construction activities.	Compliant	Compliant	Compliant
3.13	<i>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.</i>	Site inspection	Construction of the SWDF facility (adjacent to Kiln 6) occurred in the existing Kiln 6 catchment. Run off from the construction site flowed to the Kiln 6 settling ponds, which overflow to the detention basin (Lake Breed) which functions as water detention, filtration and biological treatment. Lake Breed overflows to Lake Quality which is a large storage and settling basin. Water only overflows from Lake Quality to Stony Creek during relatively high and sustained rainfall or large storms.	Compliant	Compliant	Compliant
3.14	<i>The Applicant shall ensure that all surface water discharges from the site comply with the:</i>	Docs 1-3 Table 15 Doc 9	There is no water volume or quality discharge limits in the EPL 1698. There were five overflows in the audit period (see condition 3.11).			
	<i>a) discharge limits (both volume and quality) set for the development in any EPL; or</i>	Doc 46	The water in Lake Quality is reused in site processes and the lake only overflows during heavy rainfall. The site has increased their harvesting, storage and use of rainwater.	Compliant	Compliant	Compliant
	<i>b) relevant provisions of the POEO Act.</i>	Doc 49	Improved water management procedures have minimised water discharged by drawing-down Lake Quality and Lake Breed and storing water elsewhere, thus providing greater volume for capture during rainfall events (minimising overflow losses)  The capacity for storing harvested water on site while maintaining full operations is currently approximately 150 ML. Current operations require up to 0.8 ML of water use per day. The latest revision of Water Management Plan V5 was undertaken in April 2020.	Compliant	Compliant	Compliant

3.15	<b>Traffic and Transport Impacts</b> <i>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.</i>		Construction had ceased prior to this audit period and bus systems were no longer required	N/A	N/A	N/A
3.16	<i>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.</i>		Construction activities were completed prior to the last 3 reporting periods and this Compliance audit.	N/A	N/A	N/A
3.16A	<i>The Applicant shall pay a road maintenance levy to Council of 4 cents/tonne/km for the transport of SWDF.</i>	Document 1 Table 17 Email correspondence to Wingecarribee Council	The following levy is to be paid for the following tonnages of SWDF: 2018/19- 2,1869t at \$3,499.04 2019/20- 2,8997t at \$4,639.52 Council has been contacted to arrange payment, Boral is awaiting a response.	Compliant	Compliant	Compliant
3.17	<b>Waste Management Impact</b> <i>Except as otherwise permitted by this consent and a licence issued under the Protection of the Environment Operations Act the Applicant shall not cause, 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</i>	Docs 1-3 Table 19 Doc 10	The Waste Management Plan & OEMP were revised in April 2020. All vehicles entering and exiting the site are monitored via cameras, to avoid illegal on site tipping. Except for raw materials and SWDF non-standard fuels and HiCal 50 approved in EPL 1698 no waste generated outside the Works was received at the site during the reporting period.	Compliant	Compliant	Compliant
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	Doc 10	As described above and prohibited by Condition L4.1 of the EPL, no waste generated outside the Works was received at the site during the reporting period.			

	under the Protection of the Environment Operations Act 1997, and does not include:		The site has not historically received waste from offsite as truck loads are inspected at the gate in accordance with Condition L4.1 of the EPL and the Waste Management Plan. The OEMP was updated in April 2018 to include new requirements from MOD 9 to incorporate measures for management of NSF prior to their use at the site (approval letter received from DPE on 21/05/2018).			
	a) any Non-Standard Fuels approved for use at the upgraded Kiln 6 under this consent;			Compliant	Compliant	Compliant
	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); and			Compliant	Compliant	Compliant
	c) any material normally recycled or reused within the cement works.			Compliant	Compliant	Compliant
	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.			Compliant	Compliant	Compliant
3.17AB	<b>Alternative Raw Material Trial - Granulated Blast Furnace Slag (GBFS)</b> Prior to the receipt of GBFS on-site, the Applicant must obtain a specific waste Resource Recovery Exemption (RRE) for GBFS from the EPA.	Docs 1-3 Table 19	The site-specific RRE for full-scale Blast Furnace Slag use was issued by EPA on 19 September 2012. The DPI issued a letter approving the full-scale Blast Furnace Slag use in September 2012. The use of GBFS since 2012 has not resulted in an increase in stack emissions verified via responses to air quality.	Compliant	Compliant	Compliant
3.17AC	<b>GBFS Trial Requirements</b> 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:	Docs 1-3 Table 19	Compliance of this condition was detailed in the 2013 AEMR. Trials and stack testing was conducted in May 2012 and have not resulted in increased stack emissions since this date. Current management measures for the use of GBFS are achieving desired outcomes.			
	(a) undertake the trial over a continuous 3 day period, unless otherwise agreed in writing by the Secretary;			Compliant	Compliant	Compliant
	(b) conduct stack testing of all relevant air emissions and trace elements, to the satisfaction of the EPA; and			Compliant	Compliant	Compliant
	Use quality controlled GBFS only.					
3.17AD	<b>GBFS Trial Verification Report</b>	Docs 1-3 Table 19				

	<p>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 Secretary and the EPA. The Verification Report shall include:</p> <p>(a) <i>stack emissions monitoring data measured for the duration of the trial;</i></p> <p>(b) <i>copies of all analytical test reports for all substances sampled and tested;</i></p> <p>(c) <i>comparison of monitoring results from the trial with the relevant EPA standards and requirements, as determined by the EPA.</i></p>		<p>Compliance with this condition was detailed in the 2013 AEMR.</p> <p>The verification report was provided on 13/07/2013 which reported that there were no stack contributions from the GBFS, coal use decreased and CO2/CO emissions decreased.</p>			
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
				Compliant	Compliant	Compliant
3.17AE	<p>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 Secretary in consultation with the EPA.</p>	Docs 1-3 Table 19	<p>The site has been using less GBFS than the approved rate of 150,000 tonnes p.a since ongoing use was approved in 2012.</p>	Compliant	Compliant	Compliant
3.17B	<p>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:</p> <p>a) <i>AKF1.</i></p>	Docs 1-3 Table 19	<p>During the audit period, no AKF1 or other Group A wastes were stored on site. The OEMP was updated in April 2018 to incorporate management measures for NSF.</p>			
				Compliant	Compliant	Compliant
3.17C	<p><i>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 a accordance with the EPA's Waste Classification Guidelines.</i></p>	Site inspection Doc 46	<p>There has been no waste generated from the SWDF during the audit period.</p>	Compliant	Compliant	Compliant



3.18	<b>Visual Amenity</b> <i>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.</i>	Night site inspection	Provision of lighting at the Berrima Cement Works complies with AS 4282(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.  No community complaints regarding light spill have been received during the reporting periods. Management measures are sufficient to keep light spill from the site within acceptable limits.	Compliant	Compliant	Compliant
3.19	<i>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 1.2f)). This includes using the building materials identified and minimising the height of the pre-heater tower.</i>	Docs 1-3 Table 23	Compliance has previously been confirmed for this condition. A tree screen shields the tower from sensitive receivers and will become more effective as vegetation thickens.	Compliant	Compliant	Compliant
3.19A	<i>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.</i>	Site inspection	Site inspection confirms that RDF bales were not present on site, and all material is delivered to an enclosed shed.	Compliant	Compliant	Compliant
3.20	<b>Non-Standard Fuels Specifications</b> <i>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</i>	Doc 24	Only Group 2 non-standard fuels were used during the audit period. Analysis was undertaken in accordance with QA/QC specification. The specifications provided were met.	Compliant	Compliant	Compliant

	<i>Secretary and the EPA prior to the use of that Non-Standard Fuel at the development under this consent. The Group 1 or Group 2 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.</i>					
3.21	<i>Based on the Non-Standard Fuel specification specified in condition 3.20 the following fuel specification criteria are required to be met:</i>					
	<i>a) for Hi CAL 50 a mercury specification no greater than 1 mg/kg and a cadmium specification no greater than 10 mg/kg;</i>	Site interview	Fuel was used as a blend with other standard fuels (coal)	Compliant	Compliant	Compliant
	<i>b) for AKF1 a mercury specification no greater than 2 mg/kg and a cadmium specification no greater than 5 mg/kg; .</i>		Material was not used during this audit period	Not Triggered	Not Triggered	Not Triggered
	<i>c) organohalogen compounds, expressed as chlorine, in any Non-Standard Fuel not to exceed 1% by weight; and</i>		Material was not used during this audit period	Not Triggered	Not Triggered	Not Triggered
	<i>d) the waste materials to be used as Non-Standard Fuels must not be diluted or blended to meet any of the fuel specification requirements</i>		Material was not used during this audit period	Not Triggered	Not Triggered	Not Triggered
3.22	Prior to the use of 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 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:	Interview Docs 25-27	Tracking Program completed and provided both monthly and quarterly. Moving to 6 monthly	Compliant	Compliant	Compliant

	a) <i>batch analyses of Group 1 or Group 2 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;</i>	Docs 21, 29, 30, 41	Routine compliance analysis of non-standard fuels outlined in the Tracking Program. QCQA of suppliers provided. Internal analysis undertaken as well	Compliant	Compliant	Compliant
	b) <i>a mass inventory of each listed pollutant entering the process in raw materials, conventional fuels and Group 1 or Group 2 Non-Standard Fuels, with particular attention to, but not limited to chlorine, mercury, cadmium and chromium;</i>	Doc 1 Table 6 Doc 53	Process inputs and outputs monitored on a routine basis as outlined in the Tracking Program. Inventory viewed on site and data provided in EPL return and Annual Review	Compliant	Compliant	Compliant
	c) <i>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</i>	Docs 29 and 41	Calculations of emission factors and variance reported quarterly for the first year and biannually thereafter	Compliant	Compliant	Compliant
	d) <i>any adjustments that may be necessary to Group 1 or Group 2 Non-Standard Fuel specifications arising from the Tracking Program analysis.</i>	Doc 29	No adjustments made during audit period	Compliant	Compliant	Compliant
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 Secretary. The Report shall be submitted to the Secretary:		Quarterly tracking reports submitted to the DPIE for July 19, Nov 19, Feb 20 and April 2020 stack tests			
	a) <i>every three months in the first year of operation using Non-Standard Fuels under this consent, (to be synchronised with stack monitoring); and</i>	Interview Docs 21, 25-30, 41		Compliant	Compliant	Compliant
	b) <i>thereafter every six months, or as otherwise agreed to by the Secretary</i>			Compliant	Compliant	Compliant

3.24	<b>Process Parameters</b> The Applicant shall cease to burn Non-Standard Fuels in Kiln 6 if:		A data review on site showed that Kiln 6 has not dropped below required temperatures Lockout system within control room stops the use of NSF if temperatures fall to 850°C			
	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	Data review Interview		Compliant	Compliant	Compliant
	b) the temperature is below 300°C at the outlet of the preheater strings.	Data review Interview		Compliant	Compliant	Compliant
3.24A	<b>Condition amended in October 2019</b> 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.	Interview	This condition forms part of MOD11 and has yet to be triggered by the use of HiCal50	Not-triggered	Not-triggered	Compliant
3.24B	<b>Condition amended in October 2019</b> 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.	Interview	Hi Cal 50 was not used in 2018/19	Not-triggered	Not-triggered	Compliant
3.25	<b>PoP Trial Plan</b> 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 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:	Docs 27 and 28	Plans for RDF and WW submitted and comments from EPA and DPIE noted in report revision logs.			
	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;	Docs 27 and 28	Results for calculation of residence time (6.61s for RDF and WW)	Compliant	Compliant	Compliant

	<i>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;</i>	Docs 31 and 32	Criteria has been established, as provided in the CEMS QA Plan	Compliant	Compliant	Compliant
	<i>c) assess the performance of any monitors on the abatement system and establish a maintenance and calibration program for each monitor;</i>	Docs 27, 28, 31	Maintenance and calibration program is ongoing, as detailed in the CEMS QA Plan Calibration and Relative Accurate Test Audits (RATA) completed on all air emission monitoring equipment prior to the PoPT commencing	Compliant	Compliant	N/A
	<i>d) establish criteria for the control of all alternative fuel input including the maximum flow and maximum calorific value;</i>	Document review	NSF specifications and QA/QC criteria have been established but do not include maximum calorific value as only minimum calorific value is relevant. As the trial is now completed it is not considered necessary to amend the consent	Compliant	Compliant	Compliant
	<i>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;</i>	Docs 27, 28, 31	The CEMS QA Plan covers requirements for equipment checks, calibrations and preventative maintenance to ensure valid results from monitoring instruments	Compliant	Compliant	Compliant
	<i>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</i>	Docs 27, 28	Performance tests detailed in WW and RDF PoPT plans and in Appendices 4 and 5	Compliant	Compliant	Compliant
	<i>g) address all relevant requirements of the EPL for the project.</i>	Docs 27, 28	EPL requirements addressed in section 4 of the POPT Plans for Refuse Derived Fuel and Wood Waste	Compliant	Compliant	Compliant
3.26	<b>Conduct of Trials</b> The PoP trials shall:		6-month PoP trials conducted from August 2018 to January 2019			
	<i>a) be carried out in accordance with a detailed PoP plan(s) approved by the Secretary;</i>	Docs 46- 49	Trials conducted as per secretary approval Consistent with environmental and safety standards and in accordance with the regulatory requirements	Compliant	Compliant	N/A
	<i>b) be undertaken by a suitably qualified and experienced person(s);</i>	Staff interview Doc 13	Trials conducted by qualified staff	Compliant	Compliant	N/A
	<i>c) test performance of all major process components including emission control systems using no SWDF, and representative fuels containing SWDF</i>	Doc 35 Appendices 5 and 6	All major components tested for performance during trials Stack Test for PoP with SWDF in Ektimo Kiln Emission Testing Report Appendix 5	Compliant	Compliant	N/A

	<i>designed to cover the range of materials and compositions of SWDF;</i>		Stack tests using coal only from 2016 -2018 in Boral Cement Consolidated PoP Trial Six Month Report Appendix 6			
	<i>d) identify changes to the Kiln 6 emission control system that may be necessary to achieve compliance with the consent and the EPL; and</i>	Doc 18 Section 7.1	No significant increases to emissions required to be monitored as per EPL with results within approved limit	Compliant	Compliant	N/A
	<i>e) demonstrate compliance with the relevant requirements of the EPL, development consent and relevant environmental and safety criteria</i>	Doc 18 Section 9	Three elevated results above the EPL limits. Two during stack emission tests and one via CEMS monitoring  A requirement to periodically monitor HCl at Kiln 6 was put in place following the high levels, although this was satisfied and the requirement removed 12/10/2020	Non-Compliant	Non-Compliant	N/A
3.27	<b>PoP Trial Report</b> The Applicant is to report on each PoP trial to the Secretary and EPA. The reports shall be submitted at:					
	<i>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</i>	Doc 26, 37	Monthly PoP trials have been provided for October, November, December 2018 and January 2019. Six monthly PoP covers one of the monthly reports	Compliant	Compliant	N/A
	<i>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>			Compliant	Compliant	N/A
	<i>i. the total quantity of SWDF used during the previous six months;</i>	Doc 18 Section 6	Total of 5925t WW and 7991t of RDF has been consumed	Compliant	Compliant	N/A
	<i>ii. the dates and times when the trial commenced and will conclude;</i>	Doc 18	Trial ran from 24 August 2018 – 28 April 2019	Compliant	Compliant	N/A
	<i>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;</i>	Docs 18, 33, 34	Stack emissions results provided in the PoP Trial Six Month Report and in associated appendices	Compliant	Compliant	N/A
	<i>iv. all monitoring data collected for the project during the previous six months;</i>	Docs 26, 37	All monitoring data is provided in monthly reports as well as the 6 monthly PoP trial report	Compliant	Compliant	N/A
	<i>v. identification of any non-compliance with the conditions of this consent and the EPL;</i>	Doc 18 Section 9	Three elevated results above the EPL limits. Two during stack emission tests and one via CEMS monitoring: Electrostatic Precipitator Trip and Elevated HCl	Compliant	Compliant	N/A

	<i>vi. details of additional measures to be implemented to address any non-compliance; and</i>	Doc 18 Section 10	Measures enforced to address each non-compliance were detailed in Section 10	Compliant	Compliant	N/A
	<i>vii. an assessment of the suitability of the SWDF for ongoing use.</i>	Doc 18 Section 11	An SWDF suitability assessment is provided in Section 11	Compliant	Compliant	N/A
	<i>Copies of the POP Trial Reports shall be made available to the public upon request.</i>	Stack emission tests published under POELA data and reviewed	PEOLA data contained on Boral Cement's web page	Compliant	Compliant	N/A
3.28	<i>Use of SWDF is not permitted (outside of the approved PoP trials) until such time as the 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.</i>	Noted	SWDF was used only within the allocated trial period until notice of approval for further use	Compliant	Compliant	Compliant
<b>4</b>	<b>Environmental Monitoring and Auditing</b>					
4.1A	<b>Continuous Emissions Monitoring</b> <i>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.</i>	Site Interview Doc 38, 44	Equipment for continuous emissions monitoring was installed prior to receipt and use of NSF.	Compliant	Compliant	Compliant
4.1B	<b>Ambient Air Quality Monitoring Program</b> 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 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		Ambient Air Quality Monitoring Program was developed and implemented prior to the commencement of the PoPt. Monitoring stations were capable of obtaining ambient air quality data via monitoring <i>TSP, PM10 and PM2.5</i> at appropriate frequencies. Associated meteorological data was also sampled as part of the program.	Compliant	Compliant	Compliant

	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;	Doc 11 Section 5.2 (Monitoring/ discharge locations and Figure 2)		Compliant	Compliant	Compliant
	b) monitoring of TSP, PM10 and PM2.5 and other listed pollutants;	Doc 11 Section 5.2 (Monitoring Schedule)		Compliant	Compliant	Compliant
	c) sampling at a continuous or other appropriately justified frequency (to be agreed with the EPA);	Doc 11 Section 5.2 (Monitoring Schedule)		Compliant	Compliant	Compliant
	d) sampling over an appropriate period (to be agreed with the EPA); and	Doc 11 Section 5.2 (Monitoring Schedule)		Compliant	Compliant	Compliant
	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.	Doc 11 Section 5.2 (Monitoring Schedule)		Compliant	Compliant	Compliant
	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.			Compliant	Compliant	Compliant
4.1C	<b>Process Monitoring</b> From the time of commencement of the use of Non-Standard Fuels the Applicant shall continuously monitor the following process parameters:	Doc 44	Monitoring of process data was integrated with the continuous stack emission monitoring and commenced prior to the PoPt trials in August 2018. All parameters required to be monitored by the EPL were within compliance and recorded in the Non-Standard Fuels First Year Monitoring and Modelling Assessment Report.			
	a) gas temperature (or some agreed equivalent indication of the temperature):			Compliant	Compliant	Compliant



	i) <i>in or near the firing zone at the main-firing end of the kiln where Non-Standard Fuels are being fired;</i>			Compliant	Compliant	Compliant
	ii) <i>in the kiln at the feed end;</i>			Compliant	Compliant	Compliant
	iii) <i>in the combustion zone or zones where Non-Standard Fuels are being fired in or adjacent to the pre-calciner/de-nox system;</i>			Compliant	Compliant	Compliant
	iv) <i>at the outlet of the suspension pre-heater strings; and</i>			Compliant	Compliant	Compliant
	v) <i>at the inlet to the electrostatic precipitator and the fabric filter.</i>			Compliant	Compliant	Compliant
	b) <i>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; and</i>			Compliant	Compliant	Compliant
	c) <i>rates of feed for Non-Standard Fuels AKF1 and AKF5 and the derived rate of feed for Hi CAL 50 in the coal feed.</i>			Compliant	Compliant	Compliant
	d) <i>rate of feed for SWDF; and</i>			Compliant	Compliant	Compliant
	e) <i>nitrogen oxides, hydrogen chloride, sulphur dioxide, carbon monoxide, solid particles (total and volatile organic compounds.</i>			Compliant	Compliant	Compliant
4.2	<i>If 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 under condition 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.</i>	Doc 44	All monitoring results are within compliance, thus at the time of this Audit remedial measures were not required.	Compliant	Compliant	Compliant
4.5	<b>Auditing</b>					

<p><i>Within three years of the commencement of operation of the cement works upgrade, and every three years thereafter or as otherwise required by the 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 Secretary, prior to the commencement of the Audit. An Environmental Audit Report shall be submitted for comment to the Secretary, the EPA and Council, within one month of the completion of the Audit. The Audit shall:</i></p>		<p>A Compliance Audit of Cement Mill 7 and Kiln 6, was completed in November 2017, by Senior Lead Environmental Auditor Ms Olga Lihou (Exemplar Global Certification 15061), with approval given by the DP&amp;E. All requirements defined in sections a, b, c and d of this Condition, were compliant.</p>			
<p><i>a) be carried out in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing and ISO 14011 - Procedures for Environmental Auditing;</i></p>			Compliant	Compliant	Compliant
<p><i>b) assess compliance with the requirements of this consent, and other licences and approvals that apply to the cement works upgrade;</i></p>			Compliant	Compliant	Compliant
<p><i>c) assess the cement works upgrade operations against the predictions made and conclusions drawn in the SEE and other documents listed under conditions 1.2 a) to 1.2 h), inclusive; and</i></p>			Compliant	Compliant	Compliant
<p><i>d) review the effectiveness of the environmental management of the cement works upgrade, including any environmental impact mitigation works.</i></p>			Compliant	Compliant	Compliant
<p><i>The 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.</i></p>			Compliant	Compliant	Compliant

	<i>Any such works shall be completed within such time as the Secretary may agree.</i>					
4.6	<p><b>NSF Auditing</b>  Within 12 months of the receipt of the first load of 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 Secretary. The Audits are to be carried out by a duly qualified and independent person or team to be approved by the Secretary, and submitted directly to the 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:</p>	Doc 43	<p>The Independent Environmental Audit of Non-Standard Fuels was in November 2019 to assess the compliance of relevant conditions included in this consent. The audit encompassed a review of:</p> <ul style="list-style-type: none"> <li>-management and operating procedures,</li> <li>-QAQC measures of the suppliers and of Boral,</li> <li>-a review of the process parameters and requirements outlined in condition 3.24 and</li> <li>-recommendations on the above conditions</li> </ul> <p>This audit reassessed compliance with Condition 4.6 for the period ending November 2020.</p>	Compliant	Compliant	Compliant
	a) <i>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;</i>	Doc 43 Appendix A		N/A	Compliant	N/A
	b) <i>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;</i>	Doc 43 Sections 7 and 8		N/A	Compliant	N/A
	c) <i>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</i>	Doc 43 Section 8		N/A	Compliant	N/A

	<i>ensure that Non-Standard Fuels comply with the relevant fuel specification;</i>						
	<i>d) 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 information generated by the Applicant and received from the Non-Standard Fuel suppliers;</i>	Doc 43 Section 8			N/A	Compliant	N/A
	<i>e) suggestion of any recommendations with respect to any of the matters listed above; and</i>	Doc 43 Section 9			N/A	Compliant	N/A
	<i>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.</i>	Doc 43 Sections 7 and 8			N/A	Compliant	N/A
4.6A	<i>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 Secretary.</i>	Doc 43	The audit reports were submitted within the required timeframe		N/A	Compliant	N/A
5	<b>Community Information and Involvement</b>						
5.1	<i>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.</i>		At the time of this Audit, documents were accessible electronically via the Boral Cement website and upon Request. Non-confidential documentation in hard copy format was also readily available for inspection.		Compliant	Compliant	Compliant
5.2	<b>Complaints Procedure</b> Prior to the commencement of construction for the cement works upgrade, the Applicant		The site complaints procedure appeared effective in capturing issues and providing evidence on the type to address the deficiencies.		Compliant	Compliant	Compliant

	shall ensure that the following are available for community complaints for the life of the cement works upgrade (including construction and operation):		Contact details were signposted at each site entrance and included a contact phone number, postal address, email address & Boral internet site.			
	a) a telephone number on which complaints about operations on the site may be registered;		These details were also made available at each community meeting and were included in the meeting minutes	Compliant	Compliant	Compliant
	b) a postal address to which written complaints may be sent; and			Compliant	Compliant	Compliant
	c) an email address to which electronic complaints may be transmitted, should the Applicant have email service			Compliant	Compliant	Compliant
	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.	Site inspection Borals' webpage		Compliant	Compliant	Compliant
5.3	The Applicant shall record details of all complaints received through the means listed under condition 5.2 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:		The site Complaint Register appears well maintained. Reports provided details of complaint date and time; the means by which the complaint was made; incident details; action taken; and the complainants name and address. Noise and dust complaints are forwarded to EPA in the Annual Returns and the DPE in the Annual Environmental Management Reports. BCB continues to investigate strategies to actively reduce its dust and noise impacts on the local community.			
	a) the date and time, where relevant, of the complaint;			Compliant	Compliant	Compliant
	b) the means by which the complaint was made (telephone, mail or email);			Compliant	Compliant	Compliant
	c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;			Compliant	Compliant	Compliant
	d) the nature of the complaint;			Compliant	Compliant	Compliant
	e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and			Compliant	Compliant	Compliant

	f) <i>if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.</i>			Compliant	Compliant	Compliant
5.4	<b>Community Liaison Group</b> 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:	Site interview OEMP Appendix 3 Letter to reformed community meeting	Notes of meetings and/or copies of presentations for the CLC meetings were evaluated and found to meet all the requirements of this Condition. Verification of the Boral Berrima Cement Solid Waste Derived Fuels Implementation Project Stakeholder Engagement & Consultation Plan.			
	a. Be comprised of the following, whose appointment has been approved by the Secretary:			Compliant	Compliant	Compliant
	i) 1 or 2 representatives from the Applicant, including the person responsible for environmental management at the development;			Compliant	Compliant	Compliant
	ii) 1 representative from Council; and			Compliant	Compliant	Compliant
	iii) 3 or 4 representatives from the local community.			Compliant	Compliant	Compliant
	b. Be chaired by a representative agreed to by the Group and approved by the Secretary;			Compliant	Compliant	Compliant
	c. Meet a minimum of once in every 6-month period; and			Compliant	Compliant	Compliant
	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.			Compliant	Compliant	Compliant
5.5	The Applicant shall at its own expense:		During all 3 reporting periods, the CLC operated in accordance with Condition 5.5.			
	a) <i>Ensure that 1 or 2 of its representatives attend the Group's meetings;</i>			Compliant	Compliant	Compliant

	b) <i>Provide the Group with regular information on the environmental management and performance of the development;</i>		Reviews from Community Meeting records validated compliance with meeting this Condition. Verification of the Boral Berrima Cement Solid Waste Derived Fuels Implementation Project Stakeholder Engagement & Consultation Plan.	Compliant	Compliant	Compliant
	c) <i>provide access to independent scientific/technical support to assist member in understanding and interpreting information provided, if requested;</i>			Compliant	Compliant	Compliant
	d) <i>provide meeting facilities for the Group, where necessary;</i>			Compliant	Compliant	Compliant
	e) <i>arrange site inspections for the Group, if requested;</i>			Compliant	Compliant	Compliant
	f) <i>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;</i>			Compliant	Compliant	Compliant
	g) <i>respond to any advice or recommendations the Group may have in relation to the environmental management or performance of the development; and</i>			Compliant	Compliant	Compliant
	h) <i>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 Secretary upon request.</i>			Compliant	Compliant	Compliant
6	Environmental Management					
6.1	<b>Construction Environmental Management Plan (CEMP)</b> The Applicant shall update the Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. The updated CEMP shall:	Doc 52	Final revision of the Construction Environment Plan (CEMP) for Berrima Solid Waste Derived Fuels Project Kiln 6 Upgrade MOD 9 (DA401-11-2002 satisfied all sub-conditions in 6.1	Compliant	Compliant	Compliant
	a) <i>be approved by the Secretary prior to the commencement of construction;</i>	Doc 52		Compliant	Compliant	Compliant

	<i>b) identify the statutory approvals that apply to the development;</i>	Doc 52		Compliant	Compliant	Compliant
	<i>c) outline all environmental management practices and procedures to be followed during construction works associated with the development;</i>	Doc 52		Compliant	Compliant	Compliant
	<i>d) describe all activities to be undertaken on the site during construction of the development, including a clear indication of construction stages;</i>	Doc 52		Compliant	Compliant	Compliant
	<i>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</i>	Doc 52		Compliant	Compliant	Compliant
	<i>f) describe the roles and responsibilities for all relevant employees involved in construction works associated with the development; and</i>	Doc 52		Compliant	Compliant	Compliant
	<i>g) include the management plans required under condition 6.1A and 6.2 of this consent</i>	Doc 52		Compliant	Compliant	Compliant
6.1A	As part of the CEMP required under condition 6.1 of this consent, the Applicant shall include the following:	Doc 52	CEMP for Berrima SWDF Project Kiln 6 Upgrade MOD 9 (DA401-11-2002 authorized by Rod Wallace- P&D Manager of PD&E includes:			
	<i>a) Construction Traffic Management Plan;</i>	Doc 52	Construction Traffic Management Plan (7.1.4)	Compliant	Compliant	Compliant
	<i>b) Erosion and Sediment Plan;</i>	Doc 52	Erosion and Sediment Plan (7.2.5)	Compliant	Compliant	Compliant
	<i>c) Construction Noise Management Plan;</i>	Doc 52	Construction Noise Management Plan (7.2.3)	Compliant	Compliant	Compliant
	<i>d) Construction and Demolition Waste Management Plan;</i>	Doc 52	Construction and Demolition Waste Management Plan (7.2.1)	Compliant	Compliant	Compliant
	<i>e) a protocol to manage groundwater and contaminated soil;</i>	Doc 52	protocol to manage groundwater and contaminated soil (7.2.2)	Compliant	Compliant	Compliant
	<i>f) a Community Consultation and Engagement Plan, including complaints management.</i>	Doc 52	Community Consultation and Engagement Plan, including complaints management (6.4.1)	Compliant	Compliant	Compliant
6.1B	<i>The Applicant shall carry out the construction of the development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from</i>	Doc 52	The construction of the development remained in accordance with the CEMP.	Compliant	Compliant	Compliant



	<i>time to time), unless otherwise agreed by the Secretary.</i>					
6.2	As 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:	Doc 52	The studies listed below were prepared and implemented as part of the CEMP			
	<i>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.</i>	Doc 52		Compliant	Compliant	Compliant
	<i>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.</i>	Doc 52		Compliant	Compliant	Compliant
	<i>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.</i>	Doc 52		Compliant	Compliant	Compliant
	<i>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</i>	Doc 52		Compliant	Compliant	Compliant

	shall include, but not necessarily be limited to:						
	<i>I) details of erosion, sediment and surface water pollution control measures and practices to be implemented during construction of the cement works upgrade; and</i>	Doc 52			Compliant	Compliant	Compliant
	<i>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.</i>	Doc 52			Compliant	Compliant	Compliant
6.3	<b>Operation Environmental Management Plan (OEMP)</b> The Applicant shall prepare and implement an 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:	Doc 4	At the time of this audit, the Operation Environmental Management Plan OEMP, had been reviewed and updated in April 2020 Version 6, to more accurately reflect the extent of current operations and environmental management needs associated with these operations.				
	<i>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;</i>	Doc 4 Sections 2.1, 2.2 and 2.3			Compliant	Compliant	Compliant
	<i>b) a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;</i>	Doc 4 Section 4			Compliant	Compliant	Compliant

	c) <i>overall environmental policies and principles to be applied to the operation of the cement works upgrade;</i>	Doc 4 Section 3		Compliant	Compliant	Compliant
	d) <i>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;</i>	Docs 5-11 Section 7		Compliant	Compliant	Compliant
	e) <i>management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; and</i>	Doc 4 Section 3		Compliant	Compliant	Compliant
	f) <i>the Management Plans listed under condition 6.4 of this consent;</i>	Doc 4 Appendices		Compliant	Compliant	Compliant
	<i>The OEMP shall be submitted for the approval of the 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 Secretary. Operation shall not commence until written approval has been received from the Secretary. Upon receipt of the Secretary's approval, the Applicant shall supply a copy of the OEMP to the EPA and Council as soon as practicable.</i>			Compliant	Compliant	Compliant
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:	Doc 4	OEMP Updated April 2020			
	a. <i>details of how the development will comply with the requirements of the EPL and development consent throughout operation;</i>	Doc 4 Appendix 4	Management practises outlined to ensure EPL compliance	Compliant	Compliant	Compliant
	b. <i>an update of the Community Consultation and Engagement Plan required by Condition 6.1A that outlines how the community will be kept</i>	Doc 4 Appendix 3	Updated Community Consultation and Engagement Plan provided	Compliant	Compliant	Compliant

	<i>informed about the results of the PoP trials and the ongoing use of SWDF;</i>					
	<i>c. the environmental monitoring requirements outlined in the EPL and under conditions 4.1A, 4.1B and 4.1C of this consent; and</i>	Doc 4 Appendices 4 and 11 AQMP Section 5.2	EPL monitoring requirements outlined in the updated AQMP and WMP	Compliant	Compliant	Compliant
	<i>d. an updated Air Quality Management Plan, as required by condition 6.4A of this consent.</i>	Doc 4 Appendix 4 (AQMP)	Updated Air Quality Management Plan provided	Compliant	Compliant	Compliant
	<i>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.</i>	Interview Doc 4 Section 1.2.1 & Appendix 4	An update to the OEMP has been recommended as part of this audit however as there were no changes to the EPL required, this condition has not been triggered	Not Triggered	Not Triggered	Not Triggered
6.3B	<b>Condition Amended April 2020</b> 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:	Doc 5	The updated OEMP included the isotainer reach stacker Code of Practice and noise monitoring and management requirements.			
	<i>a) a Code of Practice for operators of the isotainer reach stacker to reduce L<sub>Amax</sub> noise events</i>	Doc 4 Appendix 6 Attachment 1		Compliant	Compliant	Compliant
	<i>b) the noise monitoring and management requirements specified in conditions 3.3 to 3.6 of this consent.</i>	Doc 4 Appendix 6 Attachment 1		Compliant	Compliant	Compliant
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:	Doc 5	The Berrima Noise Management Plan (NMP was recently updated in April 2020 to include EPL Variation (Whole of site noise limit) and MOD 11 and 12 (Use of Isotainers and Whole of Site Noise Limit)			
	<i>a) a <b>Noise Management Plan</b> 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>	Doc 5 Appendix 6	The assessment of noise compliance has been undertaken each year by an external noise consultant. For the 2018 reporting period, the noise assessments were undertaken by Hatch while the 2019 and 2020 reporting periods the assessment was undertaken by Recognition Research. Each	Compliant	Compliant	Compliant

	i. <i>identification of all major sources of noise that may be emitted as a result of the operation of the cement works upgrade;</i>	Doc 5 Section 6.1	assessment has used the assessment criteria and locations specified on the consents which were derived from the original approval. Each assessment confirmed that the site was meeting the criteria specified in the consent.	Compliant	Compliant	Compliant
	ii. <i>specification of the noise criteria as it applies to the particular activity;</i>	Doc 5 Table 3		Compliant	Compliant	Compliant
	iii. <i>procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the EPA;</i>	Doc 5 Section 5.2-Monitoring		Compliant	Compliant	Compliant
	v. <i>protocols for the minimisation of noise emissions;</i>	Doc 5 Section 6.2 / 6.3		Compliant	Compliant	Compliant
	v. <i>measures to consider and manage the cumulative impact of operating both kilns simultaneously; and description of procedures to be undertaken if any non-compliance is detected.</i>	Doc 5 Section 6.2 / 6.3 Engineering controls/ Buffer zones and screening		Compliant	Compliant	Compliant
	vi. <i>description of procedures to be undertaken if any non-compliance is detected.</i>	Doc 5 Section 8.1-Noise Complaints		Compliant	Compliant	Compliant
6.4	b) an <b>Air Quality Management Plan</b> 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:	Doc 4 Appendix 4	The Air Quality Management Plan CMT-ENV-003; Version 4, was reviewed and amended in April 2020. Annual Stack Testing Results for the 3 Reporting periods were validated for each Annual Returns.			
i. <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;</i>	Doc 11 Section 5.1 (Emission sources), Table 4	Compliant		Compliant	Compliant	
ii. <i>monitoring of particulate and gaseous emissions from the cement works</i>	Doc 11 Section 5.2-Monitoring/	Compliant		Compliant	Compliant	

	<i>upgrade, in accordance with any requirements of the EPA;</i>	Discharge locations (Fig 2), Stack Emission Limits, Monitoring requirements				
	<i>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;</i>	Doc 11 Section 5.2- Air Quality Management Controls		Compliant	Compliant	Compliant
	<i>iv. protocols for regular maintenance of process equipment to minimise the potential for dust emissions;</i>	Doc 11		Compliant	Compliant	Compliant
	<i>v. measures to consider and manage the cumulative impact of operating both kilns simultaneously; and</i>	Doc 11 Section 5.2- Air Quality Management Controls (Dust Management Plan)		Compliant	Compliant	Compliant
	<i>vi. description of procedures to be undertaken if any non-compliance is detected.</i>	Doc 11 Section 7- Incident reporting, PIRMP, Emergency Plan (Section 6.2)		Compliant	Compliant	Compliant
6.4	<i>c) an <b>Emergency Plan</b> 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.</i>	Doc 4 Appendix 7	All requirements defined in this Condition, were assessed and found to meet all requirements of this Condition. The PIRMP undergoes regular review and updating. The current version is dated April 2020.	Compliant	Compliant	Compliant
6.4	<i>d) a <b>Safety Management System</b>, 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,</i>	Intranet	The Boral OHS Management System was the most current Safety System in use at the time of the audit.	Compliant	Compliant	Compliant

	<i>responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be 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.</i>					
6.4	e) a <b>Water Supply Strategy</b> 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.	Doc 4 Appendix 11	Boral continues to manage and increase the harvesting, storage and use of rainwater falling on the site. Improved water management procedures to minimise water discharged from the site by drawing-down Lake Quality and Lake Breed and storing their water elsewhere on site, thereby providing greater volume for capture during rainfall events (minimising overflow losses); and investigations into improving ways water can be moved around the site for improved storage options. The capacity for storing harvested water on site while maintaining full operations is currently approximately 150 ML. Current operations require up to 0.8 ML of water use per day. The last revision of the Water Management Plan CMT-ENV-005 V5 was undertaken in April 2020 as part of Boral's 3 yearly Management Plan reviews.	Compliant	Compliant	Compliant
6.4	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:	Doc 4 Appendix 9	Driver codes outline the driving behaviour expected of all Workers (employees and contractors). Driver Code of Conduct is included in induction training. Refresher training is provided and regular audits are conducted. Drivers are continually evaluated for compliance against these codes during workplace observations. In case truck drivers associated with Boral Cement Berrima are found to be in breach of their Code of Conduct, incident reports would be prepared.			
	a) details of any restriction to traffic routes;		The Driver Code of Conduct for Passenger Vehicles and Utility Operators and Driver Code of Conduct for Truck and Heavy	Compliant	Compliant	Compliant

	b) minimum requirements for vehicle maintenance to address noise and exhaust emissions;		Vehicle Operators were last updated in April 2020 and are part of Berrima's Environmental Management Plans. Sufficient car parking continues to accommodate employee and visitor vehicles on site without the need to park on surrounding public roads. Operations at Kiln 6 complied with the traffic and transport consent conditions during the reporting periods.	Compliant	Compliant	Compliant
	c) speed limits to be observed along routes to and from the sites and within the site; and			Compliant	Compliant	Compliant
	d) behaviour requirements for vehicle drivers to and from the site and within the site.			Compliant	Compliant	Compliant
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:	Doc 4 Appendix 4	The Air Quality Management Plan was updated in April 2020 to include all the sub-conditions in 6.4A relating to the increased monitoring requirements for the use of NSF.			
	a) <i>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;</i>	Doc 11 attachment 3 POPT Additional measures		Compliant	Compliant	Compliant
	b) <i>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;</i>	Assumptions in MOD 9 EA validated by the independent audit dated 31/10/19		Compliant	Compliant	Compliant
	c) <i>provide details of any complaints received relating to air quality generated by the development, and action taken to respond to those complaints;</i>	Doc 11 Section 7- Pollution Complaints OEMP Section 5.3		Compliant	Compliant	Compliant
	d) <i>include ambient monitoring of emissions from the development, including PM2.5 and PM10;</i>	Doc 11 Section 5.2 Monitoring/Discharge Locations (Fig 2)		Compliant	Compliant	Compliant
	e) <i>include stack emissions monitoring at Kiln 6, including for each pollutant</i>	Doc 11 Section 5.2 Stack Emissions		Compliant	Compliant	Compliant



	<i>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;</i>	Limits, Monitoring requirements				
	<i>f) include an ambient air monitoring program; and</i>	Doc 11 Section 5.2 Monitoring/Discharge Locations (Fig 2)		Compliant	Compliant	Compliant
	<i>g) include details of all proposed emission control measures.</i>	Doc 11 Section 5.2- Air quality management controls, dust management plan		Compliant	Compliant	Compliant
6.5	<i>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 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.</i>	Doc 4 Section 7.3	At the time of this audit, Boral Cement had undertaken a full review of their site OEMP and the associated specific EMPs (Water, Air, Noise, Waste, Dust and Traffic Management Plans). Newly revised Plans were issued in April 2018, within the expected 3 year cycle. Boral Cement undertook a full review of their Environmental Management Plans for Berrima Cement Works in the context of the Alternate Fuels Project. Boral Cement engaged a consultant to create these Plans on their behalf. The OEMP, forms part of Berrima's Environmental Management Plans	Compliant	Compliant	Compliant
6.6	<i>Prior to the use of any Group 1 or Group 2 Non-Standard Fuels under this consent, the Applicant shall update the OEMP 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</i>	Doc 4	The Operation Environmental Management Plan was updated in April 2018 as required under conditions of this consent to reflect any modifications required at the development in light of the use of Non-Standard Fuels	Compliant	Compliant	Compliant

	<i>considers that the OEMP 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 OEMP. Updating of the Plan shall include, but not necessarily be limited to providing additional detailed measures to the AQMP to minimise the emissions of air pollutants (including toxic pollutants and dioxins) to ensure compliance with the EPL.</i>					
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 Secretary and shall, at the request of the 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:	N/A	No Group 1 NSF used during period of this audit	N/A	N/A	N/A
	<i>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;</i>	Doc 21- Pg 9 Doc 42	Supplier audits assessed sampling and laboratory processes with information provided in the listed documents. Boral undertake its own laboratory testing as well to verify physical and chemical properties	Compliant	Compliant	Compliant
	<i>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</i>	Doc 21 and 41	Boral undertake separate monthly testing of NSF received from both suppliers	Compliant	Compliant	Compliant

	<i>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.</i>	Site interview Docs 39 and 40	Measures have been applied to ensure appropriate management and storage of records	Compliant	Compliant	Compliant
6.8	<i>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 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.</i>	Docs 21, 28, 31, 32, 42	The Quality Assurance and Control Procedure for Receipt and Use of Solid Waste Derived Fuels has been implemented since the receipt of Non-Standard Fuels on site.	Compliant	Compliant	Compliant
7	<b>Environmental Reporting</b>					
7.1	<b>Incident reporting</b> <i>The Applicant shall notify the 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.</i>	Doc 12	All Incidents continue to be captured in an online Incident Report Register called "SiteSafe". If an Incident has occurred, then a summary of incidents will be sent to the EPA, within the required timeframes for reporting. If an Incident has occurred, a Monthly summary of incidents would be forwarded to the DPE, the EPA as well as the Department of Health. If and when air quality levels exceed the required limits, Boral Cement have implemented protocols to ensure the Department of Health, EPA and CoPE are informed as soon as practicable PIRMP and Immediate Notification SOP were reviewed as per annual schedule	Compliant	Compliant	Compliant

7.2	<i>Within seven days of the date of this incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident</i>	Doc 12 Email correspondence sighted	The Department of Planning and EPL were emailed on the 3/07/2020	Compliant	Compliant	Compliant
7.2A	<i>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.</i>	Interview Doc 12	At the time of this audit, Conditions and procedures for reporting Non-Standard Fuel incidents were agreed with NSW Health and implemented in December 2006 prior to the commencement of the NSF program and remain unchanged. Correspondence with Sydney South West Public Health Unit now replaced by Public Health Unit (Sydney South West) Camperdown Office	Compliant	Compliant	Compliant
7.3	The Applicant shall, throughout the life of the cement works upgrade, prepare and submit for the approval of the 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 6.3 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:	Docs 1-3	The AEMR's for the last 3 reporting periods had included documented evidence to validate requirements 7.3 a-h were being met Boral Cement demonstrated their commitment to implement the environmental management targets and strategies detailed above, via their Lean Strategy Deployment Matrix.			
	a) <i>details of compliance with the conditions of this consent;</i>	Docs 1-3 Sections 2 and 7		Compliant	Compliant	Compliant
	b) <i>a copy of the Complaints Register (refer to condition 5.3 of this consent) for the preceding twelve month period (exclusive of personal details), and details of how these complaints were addressed and resolved;</i>	Docs 1-3 Appendix 2		Compliant	Compliant	Compliant
	c) <i>a comparison of the environmental impacts and performance of the cement works upgrade against the environmental impacts and</i>	Docs 1-3 Section 5		Compliant	Compliant	Compliant

	<i>performance predicted in the SEE and the additional information listed under condition 1.2;</i>						
	d) <i>results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person;</i>	Docs 1-3 Section 5			Compliant	Compliant	Compliant
	e) <i>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;.</i>	Docs 1-3			Compliant	Compliant	Compliant
	f) <i>identification of trends in monitoring data over the life of the cement works upgrade to date;</i>	Docs 1-3			Compliant	Compliant	Compliant
	g) <i>a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period;</i>	Docs 1-3			Compliant	Compliant	Compliant
	h) <i>Environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results</i>	Docs 1-3			Compliant	Compliant	Compliant
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:	Doc 3	The First Year Monitoring and Modelling Assessment Report was submitted in November 2019. The 2020 AEMR was the only report submitted following this date, and this report has included documented evidence to validate requirements 7.3A a-d were being met				
	a) <i>the nature, quantity and quality of Non-Standard Fuels used at the development;</i>	Doc 3			Not Triggered	Not Triggered	Compliant

	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;	Doc 3		Not Triggered	Not Triggered	Compliant
	c) a review of the results of the Non-Standard Fuels Tracking Program and the Non-Standard Fuels Quality Control Management procedures; and	Doc 3		Not Triggered	Not Triggered	Compliant
	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.	Doc 3		Not Triggered	Not Triggered	Compliant
7.4	The Applicant shall submit a copy of the AEMR to the Secretary, the EPA and Council every year, with	Correspondence sighted	Boral Cement Ltd have submitted 3 annual AEMR's to the Director General, with a copy to the EPA and Wingecarribee Council, for the following reporting periods; 1/05/17 – 30/04/18, 1/05/18 – 30/04/19, 1/05/19 – 30/04/20. All Boral's external reporting obligations have been met on time or approved extended time, including the Annual Return to EPA and the AEMR to DPE.			
	a) the first AEMR to be submitted within twelve months of commencement of operation of the cement works upgrade; and			Compliant	Compliant	Compliant
	b) the second and subsequent AEMRs to be submitted concurrently with the EPA's Annual Return.			Compliant	Compliant	Compliant
7.5	The 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 Secretary may agree.	Interview	At the time of this audit, there were no other requests submitted to Boral in relation to this Condition for Kiln 6.	Compliant	Compliant	Compliant
7.6	One year after the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall prepare a	Doc 44	The First-Year Monitoring and Modelling Assessment Report was submitted in November 2019 and as within the timeframe for submission. The report included details of the use of the	Not Triggered	Compliant	Compliant

	First-Year Monitoring and Modelling Assessment Report. The Report shall be submitted to the 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:		NSF, all monitoring results, an assessment of the Tracking Program, quality control procedures and detailed the modifications required to the development. The report satisfied sub-conditions a-e in Condition 7.6.			
	a) <i>detail the nature, quantity and quality of Non-Standard Fuels used at the development;</i>	Doc 44		Not Triggered	Compliant	Compliant
	b) <i>assess the results of the Continuous Emissions Monitoring, the Ambient Air Quality Monitoring Program and the Process Monitoring requirements under conditions 4.1, 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;</i>	Doc 44		Not Triggered	Compliant	Compliant
	c) <i>assess the results of the Non-Standard Fuels Tracking Program including detailed description and assessment of any trends identified through the Program;</i>	Doc 44		Not Triggered	Compliant	Compliant
	d) <i>assess the adequacy of the Non-Standard Fuels Quality Control Management Procedures required under condition 6.7; and</i>	Doc 44		Not Triggered	Compliant	Compliant
	e) <i>based on this assessment, review the necessity for continuing or modifying any of the emissions monitoring, reporting or pollutant tracking requirements of this consent.</i>	Doc 44		Not Triggered	Compliant	Compliant

## Appendix A3 - Statement of Environmental Effects (SEE): Cement Mill 7 & Kiln 6

Compliance	Status
1. Air emissions: regarding changes to the emissions of air pollutants, particularly particulates.	Compliant
2. Noise impacts: including that from the proposed mill and that generated by heavy vehicle movements.	Compliant
3. Transport impacts and traffic generation: especially a description of increases in heavy vehicle and rail movements, and any modification to truck routes.	Compliant
4. Potential hazards and risks associated with the Project.	Compliant
5. Water cycle management: including water supply and disposal, and storm water management.	Compliant
6. Waste management issues.	Compliant
7. Soil and groundwater impacts: in particular consideration of the potential for the subject land to be contaminated.	Compliant
8. Visual impacts with respect to potential impacts on private residences and publicly accessible places.	Compliant
9. Socio-economic impacts on the locality and region.	Compliant
10. The SEE must describe the proposed development and its environmental impacts in the context of the existing development.	Compliant
11. The SEE must indicate how the environmental performance of the proposal would be monitored and managed during construction and operation.	Compliant
12. The applicant must consult with the Wingecarribee Shire Council, the EPA (DEC) and any other relevant local, State and Commonwealth government authorities, service providers and community groups, and take into account any comments these agencies may have in the preparation of the SEE.	Compliant
13. If the proposal contains any actions that may have significant impact on matters of National Environmental Significance, then it may require additional approvals under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.	Compliant
14. The SEE must assess the proposal against the provisions of any relevant environmental planning instruments, particularly the following statutory instruments: State Environmental Planning Policy No.33 Hazardous and Offensive Development. State Environmental Planning Policy No. 55 Remediation of Land. Wingecarribee Local Environmental Plan 1989.	Compliant
15. The SEE must assess the proposal against provisions of any development control plans or draft development control plans that have been prepared by Wingecarribee Shire Council.	Compliant
16. The SEE must outline the strategic planning objectives applicable to the proposed development. As part of this consideration, the SEE should provide an indication of the process at the existing development and how the proposed development forms part of any strategic direction.	Compliant
17. Details of any new or modified utilities required by the proposal must be outlined, including the results of any consultations with relevant utility providers in relation to the provision of these utilities.	Compliant
18. The SEE must discuss the proposed development in the context of the existing development, detailing clearly where environmental impacts are substantially the same as the impacts from the existing development, and where there are increased or new impacts due to the proposed development.	Compliant
19. Impacts of construction activities on air quality, particularly dust emissions, should be detailed with appropriate mitigation measures identified.	Compliant
20. A full air quality impact assessment must be included in the SEE, including dispersion modelling where appropriate, to meet the requirements of the EPA (detailed in Approved Methods and Guidance for the modelling and Assessment of Air Pollutants in New South Wales).	Compliant
21. The SEE must include a full assessment of the impact of greenhouse gases emitted from the proposed development, and include measures to minimise the quantity of these gases associated with the development.	Compliant
22. Measures such as building design and ventilation systems should be detailed in the context of minimisation of fugitive emissions from the proposed development.	Compliant
23. 24. Details of air pollution control equipment must be provided, including how the equipment operates, how it will be managed and maintained and expected pollution control efficiencies of the proposed equipment.	Compliant



24. An outline of air quality monitoring for the proposed development, including pollutants and parameters that should be monitored, monitoring locations, methods and frequencies.	Compliant
25. The SEE must clearly evaluate traffic noise impacts associated with the proposed development, with reference to existing traffic noise levels and the likely increase in those noise levels as a result of construction and operation traffic. Assessment of traffic noise must make specific reference to the guidance provided in Environmental Criteria for Road Traffic Noise (EPA 1999).	Compliant
26. An assessment of the noise impacts from the proposed development must be undertaken in accordance with the EPA's Industrial Noise Policy with details of noise emissions from equipment and noise attenuation devices.	Compliant
27. Consideration of cumulative noise impacts of the proposed development combined with those associated with the existing development must be provided in the SEE	Compliant
28. A traffic study must be included as part of the SEE, including details of expected traffic movements to and from the proposed development site, with specific consideration regarding cumulative impacts of the total development with reference to: Traffic generation (road and rail) during construction and operation of the development, especially compared to the existing traffic movements, site access points, hours of traffic movement and proposed traffic routes (particularly measures to avoid residential areas and sensitive land uses where relevant). The types of road transport to be employed, with comment on the use of B-Doubles and rail movements. Proposed routes for any dangerous goods transport (a Route Evaluation Study may be required as detailed in the Department's publications Applying SEPP 33 and draft Route Selection. The capability of proposed routes (including road and intersection capacity) to handle predicted traffic movements associated with the proposal. Any road upgrades that may be required should be noted with a summary of consultations with RTA and Council (where relevant) in relation to those upgrades.	Compliant
29. Comment must be made in relation to shift times for the proposed development with a consideration of cumulative employee traffic impacts that may generate significant employee vehicle movements.	Compliant
30. Consideration of sensitive road users (school buses, cyclists etc.) should be provided, where relevant. Where routes are to be shared between these sensitive users and traffic associated with the proposal, details of measures to minimise road use conflicts must be included in the SEE.	Compliant
31. A preliminary risk screening must be completed in accordance with Applying SEPP 33 with a clear indication of class, quantity and location of all dangerous goods to be located on the proposed development site, with special emphasis to determine how the proposed development will modify the risk landscape at the site.	Compliant
32. Should preliminary screening indicate that the proposed development is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared for inclusion in the SEE as required under SEPP 33. The PHA should be prepared in accordance with the Department's publications Hazardous Industry Planning Advisory Paper No 6 Guidelines for Hazard Analysis (DUAP 1997) and Multi-Level Risk Assessment (DUAP 1997).	Compliant
33. Risk impacts associated with the transport of dangerous goods and hazardous materials should be documented with reference to the Department's draft Route Selection guidelines.	Compliant
34. The SEE must describe the existing use of water at the Cement Works and any requirement for the use of water at the proposed development. This should include details of the supply of that water, and any access rights of licenses that are held by the Applicant and that may be required.	Compliant
35. The SEE must describe any modifications required to the stormwater management systems with a demonstration that those modifications can accommodate likely storm events (justification should be provided for the design capacity of those systems).	Compliant
36. The SEE must describe the modifications to the site's water cycle and its management, including water supply, measures to re-use water within the process and any proposal to apply water to land or discharge water to natural waterways. The SEE must clearly demonstrate a design process aimed at minimising water discharges from the site.	Compliant
37. Should additional release of water from the site be required, the SEE must provide a clear assessment of the potential volumes and qualities of these waters, including full details of any on-site treatment required before discharge.	Compliant
38. Construction waste must be considered, including quantities, qualities and treatment/disposal.	Compliant
39. The increase in annual rates of production of all waste streams from the proposed development must be provided. Proposed methods of treatment and/or disposal of these waste streams must be clearly indicated.	Compliant

40. Wastes not to be reused or recycled must be classified in accordance with the EPA's Environmental Guidelines Assessment Classification & Management of Liquid/Non-Liquid Wastes.	Compliant
41. Details of waste management at the proposed development should clearly reflect the waste hierarchy of "waste avoidance – resource recovery – waste disposal".	Compliant
42. The SEE must identify the potential for the proposed site to be contaminated as a result of past industrial activities, in accordance with State Environmental Planning Policy No 55 – Remediation of Land. Should contamination be detected above relevant thresholds, then the SEE must describe how that contamination would be managed and remediated.	Compliant
43. The SEE must clearly demonstrate the visual impact of all components of the proposal, from sensitive receiver locations, particularly existing and future private residences and transport routes including any proposed management measures to be adopted to limit visual effect.	Compliant
44. The SEE must describe social and economic impacts from the proposed development, including direct local impacts and regional impacts. Identification of relevant community groups and details of measures employed to ensure these groups were consulted during the preparation of the SEE.	Compliant
45. Identification of relevant community groups and details of measures employed to ensure these groups were consulted during the preparation of the SEE.	Compliant
46. The SEE must detail the results of consultations with Wingecarribee Shire Council to establish the impacts of the proposed development on public infrastructure and services.	Compliant
47. The Applicant shall consult with the community that is likely to be affected by the proposal. A report on who was consulted must be submitted with the DA, describing: How the affected community was identified. Consultation methods utilised. Key issues raised by the community How these issues have been addressed during the preparation of the SEE.	Compliant
48. The SEE must include the framework for a Construction Environmental Management Plan (CEMP) to be implemented on the site during site preparation and construction works. The CEMP must provide environmental policies and management measures to be applied during preparation and construction. The CEMP must focus on soil erosion and sedimentation, construction noise, construction traffic and construction waste management where relevant.	Compliant
49. The SEE must include the framework for an Operational Environmental Management Plan (OEMP) to be implemented on the site during operation. The OEMP must provide environmental policies and management measures to be applied during operation. The OEMP must focus on air quality, noise emissions, waste management and on-going monitoring programs in these areas where relevant.	Compliant
50. As part of the preparation of the SEE you must provide, in a single, clear comprehensive list or table, all commitments made in relation to environmental impact mitigation, management and monitoring. The clear statement must include: What measures will be implemented/applied. The scope of these measures. The timing of implementation/application of these measures.	Compliant
51. As part of the preparation of the SEE, the Applicant must provide, in a single, clear and comprehensive list or table, the location within the SEE (page Number/s) where each of the Director General's requirements is discussed and addressed.	Compliant
52. Should the Applicant decide not to address any of these requirements within the SEE, then a comprehensive discussion must be provided to justify not addressing that requirement.	Compliant
53. The Applicant shall nominate a contact person (and telephone number) who will be made available to answer public enquiries about the proposal.	Compliant
54. The Applicant shall provide a disk containing an electronic copy of the Executive Summary to the SEE in an appropriate format as well as providing electronic copies of the SEE on CD in an appropriate format.	Compliant

## Appendix A4 – Environmental Protection License 1698 Cement Mill 7 & Kiln 6 Summary

Cement Mill 7 & Kiln 6 EPL 1698 Compliance Summary		2018	2019	2020
<b>1 License Details</b>		Compliant	Compliant	Compliant
<b>2 Discharges to air and water and applications to land</b>		Compliant	Compliant	Compliant
<b>3 Limit Conditions</b>				
L1	Pollution of waters	Compliant	Compliant	Compliant
L2	Load limits	Compliant	Compliant	Compliant
L3	Concentration limits	Non-Compliant	Compliant	Compliant
L4	Volume and Mass Limits	Compliant	Compliant	Compliant
L5	Waste	Compliant	Compliant	Compliant
L6	Noise Limits	Compliant	Compliant	Compliant
<b>4 Operating Conditions</b>				
O1	Activities must be carried out in a competent manner	Compliant	Compliant	Compliant
O2	Maintenance of plant and equipment	Compliant	Non - Compliant	Compliant
O3	Dust	Compliant	Compliant	Compliant
O4	Waste Management	Compliant	Compliant	Compliant
O5	Other Operating Conditions – O5.1 reinstatement of non-standard fuel use.	Compliant	Compliant	Compliant
<b>5 Monitoring and Recording Conditions</b>				
M1	Monitoring and recording conditions	Compliant	Compliant	Compliant
M2	Requirement to monitor concentration of pollutants discharged	Compliant	Non - Compliant	Compliant
M3	Testing methods - concentration limits	Compliant	Compliant	Compliant
M4	Testing methods - load limits	Compliant	Compliant	Compliant
M5	Recording of pollution complaints	Compliant	Compliant	Compliant
M6	Telephone complaints line	Compliant	Compliant	Compliant
M7	Other monitoring & recording Conditions	Compliant	Compliant	Compliant
<b>6 Reporting Conditions</b>				
R1	Annual return documents	Compliant	Compliant	Compliant
R2	Notification of environmental harm	Compliant	Compliant	Compliant
R3	Written report	Compliant	Compliant	Compliant
<b>7 General Conditions</b>				
G1	Copy of licence kept at the premises or plant	Compliant	Compliant	Compliant
G1	Other general conditions	Compliant	Compliant	Compliant
<b>8 Pollution Studies and Reduction Programs</b>				

PRP 4	Analysis of CEMS Data	Compliant	Compliant	Compliant
PRP 5	NOx Reduction Investigation	Compliant	Compliant	Compliant
PRP 7	Project Specific Noise Limits	Compliant	Compliant	Compliant
PRP 9	Landscape & Rehabilitation Works; Stages 1, 2 and Stage 3	Compliant	Compliant	Compliant
<b>9 Special Conditions</b>				
E1	Resource Recovery Investigation – BOS Secondary Fines in Kiln No 6	Compliant	Compliant	Compliant
E2	Ambient Quality Monitoring Program	Compliant	Compliant	Compliant
E3	Coal Washery Reject Air Emissions Assessment Reporting (RRE 28/6/2012)	Compliant	Compliant	Compliant

# Appendix B – Site Inspection Photographs



Photo1- Kiln 6



Photo 2- Truck dumping coal into hopper

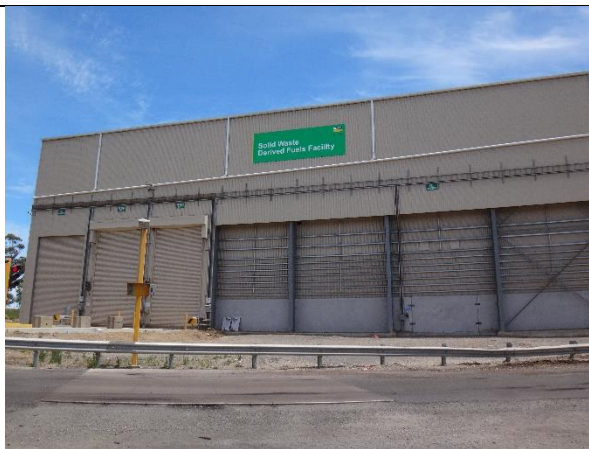


Photo 3- NSF Storage Facility



Photo 4- Water cart used for dust suppression



Photo 5- Isotainers



Photo 6- Isotainers



Photo 7- Real Time Dust Monitor



Photo 8- Kiln 6





Photo 9- Wheel Wash



Photo 10- Wheel Wash



Photo 11- Completed Rehabilitation



Photo 12- Completed Rehabilitation



Photo 13- Completed Rehabilitation



Photo 14- Lake Breed



Photo 15- Cement Fibreboard used as a raw material



Photo 16- Yellow and Blue Shale Undercover Storage



Photo 17- Hi-Cal50 Stockpile



Photo 18- Blue Shale Quarry



Photo 19 – Isotainers leaving site



Phot 20 – Cement Plant at night viewed 3 km to the east



## Appendix C – Documentation Sighted and Reviewed

The following documents have been used in the preparation of this audit.

ID #	Title	Date	Summary
1.	AEMR 2017-18	29/06/18	Actions required from previous AEMR, environmental performance, independent audit, incidents and non-compliances, activities to complete in next year
2.	AEMR 2018-19	29/06/19	Actions required from previous AEMR, environmental performance, independent audit, incidents and non-compliances, activities to complete in next year
3.	AEMR 2019-20	24/06/20	Actions required from previous AEMR, environmental performance, independent audit, incidents and non-compliances, activities to complete in next year
4.	Operations Environmental Management Plan	Apr-20	Regulatory Requirements Strategic Framework for Environmental Management Roles and Responsibilities Communication and Reporting Incident and Non-Conformance Response Monitoring, Auditing and Review
5.	Noise Management Plan	Apr-20	Noise Limits and Monitoring Managing Specific Noise Sources Implementation and Training Requirements Reporting and Record Keeping Reach Stacker Operator Code of Practice
6.	Noise Monitoring Report	30/11/19	Contribution Sound Level Objectives and Method of Measurement and Assessment Measured Sound Levels in 2019 Compared to Previous Measurements Residential Receiver Sound Levels - Review for 2019
7.	Dust Management Plan	28/04/20	Current Dust Monitoring Dust Management Measures Landscaping and Revegetation Programme Communication, Reporting and Training
8.	Traffic Management Plan	28/04/20	Traffic and Transport Impacts and Mitigation Strategies Roles and Responsibilities Health Safety and Environment Considerations Front End Loader and Bulk Truck Traffic Routes
9.	Water Management Plan	Apr-20	Environment Management Structures Site Licences/ Approvals Description of Operations Site Water Usage Process Water Sources Stormwater Management Monitoring Implementation and Training Reporting/ Record Keeping
10.	Waste Management Plan	Apr-20	Process Implementation and Training Record Keeping Legal References Site Waste Register
11.	Air Quality Management Plan	28/04/20	Manufacturing Operations – Potential Emission Sources Emission Limits & Emission Monitoring Baseline Data Emission Estimations Used in Mod 9 Application Site Air Emission Register



ID #	Title	Date	Summary
			NSW Department of Planning and Environment POP Ongoing Use Letter Berrima Dust TARP
12.	Pollution Incident Response Management Plan	20/4/2020	Required under the Protection of the Environment Operations Regulation 2009
13.	SWDF Stakeholder Engagement Plan		IAP2 Spectrum Primary Stakeholders Channels, Timeframes and Key Messages Stakeholder enquiries/ complaints Monitoring, Adjusting and Measuring Success Anticipated Cost Implications of this Plan
14.	HiCal50 Modification Application		
15.	Characterisation Sample Analysis as ResourceCo	16/06/18	RDF Waste Characterisation Results- Table
16.	Quality Assurance _ Control Plan	15/05/19	Veolia: Quality Assurance and Control Plan For the Horsley Park Waste Wood Derived Fuel Facility
17.	Characterisation sample analysis as per QAQC specification	1/06/18	Table: Wood Waste Characterisation Result
18.	Consolidated PoP Trial Six Month Report	28/02/19	Proof of Performance Trial Consolidated Six Month Report for Solid Waste Derived Fuels
19.	Appendix 3 – WW quality results including Dec' 18	28/02/19	<i>HRL Technology Group</i> Analysis of Fuels: Result Sheet – 27/09/18, 25/10/18, 22/11/18, 7/01/19, 25/01/19 ALS Certificate of Analysis- 27/09/18, 1/11/18, 22/11/2018, 31/12/18, 23/01/19
20.	Appendix 4 – RDF quality results including Dec' 18	28/02/19	<i>HRL Technology Group</i> Analysis of Fuel Sample: Result Sheet- 12/10/18, 15/10/18, 22/11/18, 7/01/19, 25/01/19 ALS Certificate of Analysis- 27/09/18, 22/10/18, 22/11/18, 31/12/18, 23/01/19
21.	ResourceCo RRF Quality Control and Assurance		Quality Control and Assurance: ResourceCo Resource Recovery Facility, Wetherill Park
22.	PRO - Management of Wood Waste Materials	13/05/19	Veolia Quality Assurance and Control Plan: Work Instructions and Procedures: Waste Wood Derived Fuel Material Quality Assurance Procedure
23.	DPE Letter Re Wood Waste Supplier Audit – Brandown	6/07/18	Boral Berrima Cement Works-Wood Waste Supplier Audit of Brandown Pty Ltd
24.	Appendix C - Supply Agreement Part C & F		Veolia QACP Appendix Items- Part C: Specification of Waste Wood Derived Fuel; Part F: Quality Assurance Activities
25.	PoPT RDF Monthly Reports	Oct 18- Jan 19	RDF Proof of Performance Trial Monthly Reports for Oct 18, Nov 18, Dec 18, Jan 19 (Separate Reports)
26.	PoPT Wood Monthly Reports	Oct 18- Jan 19	Wood Waste Proof of Performance Trial Monthly Reports for Oct 18, Nov 18, Dec 18, Jan 19 (Separate Reports)
27.	PoP Trial plan Refuse Derived Waste	5/08/19	Proof of Performance Trial Plan for Refuse Derived Waste
28.	PoPT Plan - Wood Waste	17/05/18	Proof of Performance Trial Plan for Wood Waste
29.	SP10.01.01_NSF Pollutant Tracking	6/07/18	Pollutant Tracking Program
30.	Brandown Inspection Report	5/08/19	Boral Letter to EPA: Proposal for Supplementary Light And Heavy Fuel Use At Berrima Cement Works EPL 1698
31.	Appendix 4 – CEMS QA Plan	6/04/18	Continuous Emissions Monitoring System Quality Assurance Plan No.6 Kiln Stack Final Rev 2.
32.	Appendix 5 – PCME QA Plan	18/10/17	<i>Ektimo</i> CEMS Quality Assurance Plan for PCME
33.	Stack Test for PoP with SWDF	28/02/19	<i>Ektimo</i> Kiln Emission Testing Report – Trials 1-9 and Preliminary Report

ID #	Title	Date	Summary
34.	Stack Test 2016-2018 using only coal	28/02/19	Ektimo Annual Emission Testing NPI Reports: 4/10/16, 8/9/17, 19/2/19 Ektimo Annual Emission Testing Compliance Report 4/10/16, 8/9/17, 19/2/19
35.	Ektimo Kiln Emission Testing Report	28/02/19	Stack Test for PoP with SWDF - Trials 1-9 and Preliminary Report
36.	MOD9 Response to Submissions report		
37.	CEMS Monthly Monitoring Data	Aug 18- Jan 19	Monitoring Data for the months Aug 18, Sep 18, Oct 18, Nov 18, Dec 18, Jan 19 (Separate documents)
38.	CEMS Quality Assurance Plan	18/10/17	Ektimo CEMS Quality Assurance Plan for PCME
39.	Veolia OEMP	10/12/18	OEMP for Horsley Park Resource Recovery Facility Boundary Plan, Traffic Flow Plan, NSW Resource Recovery Screening & Recording of Waste Procedure, VES Control of Non-Conforming Waste Procedure, Complains Chart, Emergency Response Plan, PIRMP
40.	Data recording templates: Veolia WMP		Data recording templates from Veolia Waste Management Plan: Quality Assurance Control Plan
41.	Monthly NSF test sheets Brandown and ResourceCo	Oct-19	Monthly Analysis of NSF delivered from Brandown / ResourceCo. Analysis in accordance with QA/QC specification
42.	Appendix 2 Supplier Capability Assessment	6/07/18	Quality Assurance Quality Control Procedure
43.	Alternative Fuels Audit Report 2019	Nov 19	Audit Methodology, Findings, Conclusions/ Recommendations, Compliance Table, Reviewed Documents, Audit Certification
44.	First-Year Monitoring and Modelling Assessment Report		Use of NSF, Monitoring (CEMS, Process, Ambient), QC management Procedures (Brandown/ ResourceCo), Tracking Program, Modifications for future use of NSF
45.	Correspondence from DPIE extending storage of Hi Cal for 3 years	12/06/19	Letter
46.	EPL 1698	18/12/19	
47.	DA for the Upgrade of Kiln 6 (DA No. 401-11-2002-		
48.	DA for modifications 1 to 9 to DA No. 401-11-2002-i (specifically the MOD 9		
49.	POEO Act 1997		
50.	Driver Code of Conduct for Truck and Heavy Vehicles Operators	eed to get	
51.	Complaints Register	May-19	Table includes Month, Person Type, Risk, Rank, Division, Site, Category, and Element
52.	Construction Environmental Management Plan		
53.	2019-20 Annual Return		
54.	Quarterly NSF tracking report July 2019	31/7/19	Stack Testing Result, Raw Material Inputs, Kiln Fuel Inputs, Total Fuel Inputs and Associated Emission Factors, Alternate Fuel Inputs and Total Inputs Raw Material and Fuel, Variance in Emission Factors between reporting periods
55.	Quarterly NSF tracking report Nov 2019	14/11/19	Stack Testing Result, Raw Material Inputs, Kiln Fuel Inputs, Total Fuel Inputs and Associated Emission Factors
56.	Quarterly NSF tracking report Feb 2020	19/02/20	Stack Testing Result, Raw Material Inputs, Kiln Fuel Inputs, Total Fuel Inputs and Associated Emission Factors

<b>ID #</b>	<b>Title</b>	<b>Date</b>	<b>Summary</b>
57.	Quarterly NSF tracking report July 2020	8-9April	Stack Testing Result, Raw Material Inputs, Kiln Fuel Inputs, Total Fuel Inputs and Associated Emission Factors, Alternate Fuel Inputs and Total Inputs Raw Material and Fuel, Variance in Emission Factors between reporting periods
58.	Water License		
59.	Approval of Final POP Trial Report	23/4/19	Letter
60.	HCl Continuous Emissions Monitoring	12/10/20	Approval to return to six monthly periodic and continuous HCl monitoring

## Appendix D – Consultation

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**robert.byrnes@iec.com.au**

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**From:** robert.byrnes@iec.com.au  
**Sent:** Friday, 30 October 2020 11:26 AM  
**To:** Matthew.Fuller@epa.nsw.gov.au  
**Subject:** Berrima Cement Plant three yearly Environmental Audit  
**Attachments:** DPIE Approval of Rob Byrnes Appointment of Experts\_23092020\_075730.pdf;  
Consolidated Consent - DA 401-11-2002-i MOD 12 (1).pdf

Dear Matthew

I have been engaged to prepare the Independent Audit of the Boral Berrima Cement Plant as required by Condition 4.5 of Schedule 2 of development consent DA401-11-2002-I MOD12. This audit is different to the previous audit of the Non-Standard Fuels usage which was completed in late 2019. As required by the Department of Planning Industry and Environment I am require to consult with key government agencies of which the EPA are included.

I would appreciate your advice on any issues of concern to the EPA or other matters which you would like included or addressed as part of the audit. I have attached a copy of the Consolidated Consent and DPIE notification for you information but if you require any further information or clarification please do not hesitate to contact me.

Regards  
Rob Byrnes

International Environmental Consultants  
"Longmead"  
700 Wombeyan Caves Road  
High Range NSW 2575  
Phone: 02 48785502  
Mobile: 0417437120

**From:** robert.byrnes@iec.com.au  
**Sent:** Friday, 30 October 2020 4:26 PM  
**To:** Barry Arthur (barry.arthur@wsc.nsw.gov.au)  
**Subject:** Berrima Cement Plant three yearly Environmental Audit  
**Attachments:** DPIE Approval of Rob Byrnes Appointment of Experts\_23092020\_075730.pdf;  
Consolidated Consent - DA 401-11-2002-i MOD 12 (1).pdf

Dear Barry

I have been engaged to prepare the Independent Audit of the Boral Berrima Cement Plant as required by Condition 4.5 of Schedule 2 of development consent DA401-11-2002-I MOD12. This audit is different to the previous audit of the Non-Standard Fuels usage which was completed in late 2019. As required by the Department of Planning Industry and Environment I am require to consult with key government agencies of which the EPA are included.

I would appreciate your advice on any issues of concern to Council in relation to the operation of the Berrima Cement Plant or other matters which you would like included or addressed as part of the audit. I have attached a copy of the Consolidated Consent and DPIE notification for your information but if you require any further information or clarification please do not hesitate to contact me.

Regards  
Rob Byrnes

International Environmental Consultants  
"Longmead"  
700 Wombeyan Caves Road  
High Range NSW 2575  
Phone: 02 48785502  
Mobile: 0417437120

## Appendix E – Audit Certification

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Development Name: Berrima Cement Works  
Development Consent: DA 401-11-2002-l and DA DA85-4-2005i  
Development Description: Berrima Cement Plant  
Development Address: Berrima Cement Plant, Taylor Ave, New Berrima NSW 2577  
Operator: Boral Limited  
Operator Address: 39 Delhi Road, North Ryde NSW 2113  
Title of Audit: Triennial Independent Environmental Audit

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

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

### Note.

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

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

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Robert Byrnes  
Director

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[robert.byrnes@iec.com.au](mailto:robert.byrnes@iec.com.au)

3<sup>rd</sup> February 2021