



## **Boral Cement Berrima**

# **Kiln 6 Upgrade Annual Environmental Management Report**

**1 May 2011 to 30 April 2012**



### Summary of Compliance Status against each Condition of Consent for Kiln 6

Condition	Compliance
1.1	YES
1.2	YES
1.3A	YES
1.3B	NA
1.3C	YES
1.4A	YES
1.4B	YES
1.4C	YES
1.4Ca	YES
1.4D	YES
1.4E	YES
1.4F	YES
1.4G	YES
1.5	YES
1.6	YES
1.7	YES
1.8	YES
1.9	YES
1.10	YES
2.1	NA
2.2	NA
3.1	NA
3.2	YES
3.3	YES
3.4	YES
3.5	YES
3.6	YES
3.7	YES
3.8	YES
3.9	YES
3.10	YES
3.10A	YES
3.11	YES
3.12	NA
3.13	NA
3.14	YES
3.15	NA
3.16	YES
3.17	YES
3.17A	YES
3.17B	YES
3.17C	YES
3.18	YES
3.19	YES

Condition	Compliance
3.20	YES
3.21	YES
3.22	YES
3.23	YES
3.24	YES
3.25	YES
4.1	YES
4.1A	YES
4.1B	YES
4.1C	YES
4.2	YES
4.3	YES
4.4	YES
4.5	YES
4.6	NA
5.1	YES
5.2	YES
5.3	YES
5.4	YES
5.5	YES
6.1	NA
6.2	NA
6.3	YES
6.4 (Noise)	YES
6.4 (Air)	YES
6.4 (Emergency)	YES
6.4 (Safety)	YES
6.4 (Water)	YES
6.4 (Transport)	YES
6.5	YES
6.6	YES
6.7	YES
7.1	YES
7.2	YES
7.2A	YES
7.3	YES
7.3A	NA
7.4	YES
7.5	YES
7.6	NA



**General**

**1.1**

**Condition**  
*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.*

**Compliance with Condition** **Yes** **No**

During this reporting period Boral took ongoing actions to improve environmental management and compliance at the Berrima Works, including:

- Working to improve dust and noise management on site;
- Continuing community engagement; and
- Liaising with NSW Environmental Protection Authority (EPA) and Department of Planning and Infrastructure (DPI) to proactively identify and address upcoming issues, monitor compliance, and work cooperatively to ensure that EPA and DPI requirements are understood and delivered.

During the reporting period, there were no known non-compliances raised against Kiln 6.  
 The Tri-Annual Environmental Audit was conducted in November 2011 by Somerset Risk Management. The auditor noted in her report that *“Boral Cement continues to maintain environmental excellence, demonstrating their commitment to continually improve their EMS at the Berrima site.”* Examples of continual improvement have been provided in this audit report.

**Management Actions**  
 Boral Cement Berrima will continue to work towards further improving environmental management at the Berrima site as documented throughout the remainder of this AEMR.

**Scope of Development**

**1.2**

**Condition**  
*The Applicant shall carry out the development generally in accordance with:*

- a) *Development Application No. 401-11-2002-i, lodged with the Department of Planning on 22 November 2002;*
- b) *Berrima Kiln 6 Upgrade Project – Statement of Environmental Effects, dated November 2002 and prepared by Olsen Environmental Consulting;*
- c) *Noise Impact Assessment for Kiln 6 Upgrade Project, dated 4 November 2002 and prepared by Hatch Associates Pty Limited;*
- d) *Air Quality Review – New Berrima Plant, Number 6 Kiln Upgrade, dated 19 November 2002 and prepared by Holmes Air Sciences;*
- e) *additional information supplied to the Department by the Applicant regarding noise, air and water dated 22/01/03*
- f) *additional information supplied to the Department by the Applicant regarding the design of the second pre-heater tower dated 4 February 2003;*



- g) additional information supplied to the Department by the Applicant regarding air and noise dated 13 February 2003;
- h) additional information supplied to the EPA by the Applicant regarding discharge points from Lake Quality dated 4 March 2003 and forwarded to the Department by the Applicant on 31 March 2003;
- i) modification application MOD-2-1-2004-i and accompanying documents lodged on 5 January 2004, including:
  - i) the Statement of Environmental Effects, Berrima Kiln 6, Non-Standard Fuels and Materials prepared by Blue Circle Southern Cement; and
  - ii) Blue Circle Southern Cement Berrima Plant, Proposed Non-Standard Fuels Modifications, Additional Information, dated 3 June 2004;
- j) modification application MOD-109-9-2006-i, relating to the definition of HiCal50 as an alternative fuel and prohibition of hazardous wastes;
- k) modification application MOD-12-2-2007-l, to permit trial use of tyre chips;
- l) MOD 4 to vary the usage rate of coke fines;
- m) MOD 5 to permit coal deliveries by rail;
- n) MOD 7 for the trial and potential full-scale use of Granulated Blast Furnace Slag as an additive raw material in kiln 6 and accompanying documents:
  - i. the Environmental Assessment entitled 'Berrima Cement Works Planning Consent Modification 7 – Environmental Assessment – Use of Granulated Blast Furnace Slag in K6 at Berrima', dated 17 October 2011 and prepared by Boral Cement Limited; and
  - ii. the Response to Submissions report entitled 'Berrima Cement Works – Kiln 6 Development Consent Modification 7', dated 7 December 2011 and prepared by Boral Cement Limited.
- o) the conditions of this consent.

In the event of an inconsistency between a condition of this consent and the documents listed under a) to n) above, the conditions of consent shall prevail to the extent of the inconsistency.

**Compliance with Condition**

Yes	No
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As detailed within this AEMR, operation of Kiln 6 has been carried out generally in accordance with the requirements of this Condition. During the Tri-Annual Environmental Audit undertaken by Somerset Risk Management in November 2011. At the time of the Audit, **no non-compliances with the conditions of the Consent were recorded.** A copy of the audit report was submitted to DPI and EPA in December 2011.

**1.3A**

**Condition**

The upgraded Kiln 6 is to be utilised as the primary and principal kiln on the site, subject to shut-down and maintenance requirements.

**Compliance with Condition**

Yes	No
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Kiln 6 was the only kiln used on site during the reporting period.



**1.3B**

**Condition**

*Kiln 5 may be utilised as a secondary, backup kiln during shut-downs, maintenance periods of Clinker demand above the maximum capacity of the upgraded Kiln 6.*

**Compliance with Condition**

NA Yes No

Kiln 5 was demolished in July/August 2011. Boral has lodged a Modification Application to remove this condition from the Consent.

**1.3C**

**Condition**

*The production capacity of the upgraded Kiln 6 is to be limited to ensure that the maximum clinker production capacity of the combined upgraded Kiln 6 and Kiln 5 does not exceed 1.560 million tonnes per annum (rolling annual average).*

**Compliance with Condition**

Yes No

Total clinker production for the reporting period (May 2011 – April 2012) was 1,284,435 tonnes.

**Non Standard Fuels**

**1.4A**

**Condition**

*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.*

**Table 1 – Permitted Fuels for use in upgraded Kiln 6**

Fuel	Category	Tonnes per annum	Tonne per hour	Percent of total fuel (by mass)
Natural Gas, Fuel Oil, Diesel	Standard Fuel	No limits		
Coal	Standard Fuel	No Limit	No Limit	≥ 60.0
Coke Fines	Standard Fuel	No Limit	≤ 10.0	≤ 30.0
Hi Cal 50	Non-Standard Fuel	10,000	≤ 1.0	≤ 6.0
AKF1	Non-Standard Fuel	20,000	≤ 1.3	≤ 4.7
AKF5	Non-Standard Fuel	30,000	≤ 4.5	≤ 21.0

**Compliance with Condition**

Yes No

Total fuel used in the kiln during the reporting period was 211,745 tonnes, with the following composition: Coal – 221,087 tonnes (99.55% of total fuel), Coke Fines – 1,005 tonnes (0.45% of total fuel).

Additionally small amounts of diesel and fuel oil were used during kiln start-ups.

No Hi Cal 50, AKF1 or AKF5 were received or used during this reporting period.



### 1.4B

#### Condition

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 New South Wales Fire Brigades' (Fire Safety Division) Guidelines For Bulk Storage Of Rubber Tyres.

#### Compliance with Condition

Yes	No
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No AKF 5 was received, nor stored at the site during the reporting year.

### 1.4C

#### Condition

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 Director-General. In particular, the detailed design shall:

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

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

#### Compliance with Condition

Yes	No
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Compliance has previously been demonstrated in the 2007-2008 AEMR.

### 1.4Ca

#### Condition

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:

- a) no more than 205 tonnes of 2" chipped tyres is to be received at the site for the trial;



- b) *the trial shall be conducted over no more than six months from the date of first receipt of the trial materials, after which any remaining trial materials shall be removed from the site to a facility lawfully permitted to accept the materials;*
- c) *the trial shall be undertaken for the purpose of investigation design and operational aspects of the full scale use of AKF5*
- d) *the trial shall be undertaken in full compliance with the environmental performance standards stipulated in this consent and the requirements of the EPL for the site*
- e) *the Applicant shall consult with and meet the requirements of the DEC with respect to undertaking the trial, and shall not commence the trial without the prior written approval of the DEC;*
- f) *trial materials shall be stored in an area that is sealed, or otherwise treated to the satisfaction of the Director-General, and away from all potential ignition sources;*
- g) *the Applicant shall notify the NSW Fire Brigades prior to the receipt of trial materials on the site, and address any requirements of the Brigades with respect to the safe storage of the trial materials;*
- h) *the Applicant shall notify the Director-General, the DEC and the Community Liaison Group prior to the commencement of the trial; and*
- i) *the Applicant shall report the status and outcomes of the trial to the Director-General and the DEC on a monthly basis from the date that trial materials are first received on the site until conclusion of the trial.*

**Compliance with Condition**

Yes  No

Boral Cement Berrima at the present time no longer wishes to conduct the tyre trial and has disposed of the AKF5 load that was previously stored on site.

**1.4D**

**Condition**

*Only Standard Fuels are permitted to be used at the development during start-up and shut-down.*

**Compliance with Condition**

Yes  No

No Non-Standard Fuels were used during the reporting period.

**1.4E**

**Condition**

*Non-Standard Fuels are not permitted to be stored at the site for longer than 3 months, except with the written permission of the Director-General.*

**Compliance with Condition**

Yes  No

No AKF1 and no AKF5 are currently stored on site.

DoP approved (by letter dated 11 February 2009) the ongoing storage of the existing Hi Cal 50/60 stockpile.



**1.4F**

**Condition**

*No Non-Standard Fuel is permitted to be received at, or used at the development, unless it complies with:*

- a) *the handling, transporting, sampling, analysis and quality control requirements of this consent;*
- b) *any requirements of a licence issued under the Protection of the Environment Operations Act 1997 for the site &*
- c) *the fuel specification for that specific fuel.*

**Compliance with Condition**

**Yes**    **No**

No Non-Standard Fuels were received at the site during the reporting period.

**1.4G**

**Condition**

*Prior to the receipt of the first batch of a Non-Standard Fuel from a particular supplier, the Applicant shall certify in writing to the Director-General 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 Director-General, 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.*

**Compliance with Condition**

**Yes**    **No**

There were no Non Standard Fuels received during this reporting period.

**Provision of Documents**

**1.5**

**Condition**

*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.*

**Compliance with Condition**

**Yes**    **No**

Where practicable all documentation submitted to DPI has been provided electronically.





**Statutory Requirements**

**1.6**

**Condition**

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

**Compliance with Condition**

Yes	No
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All required licenses, permits and approvals are maintained on site at Boral Cement Berrima and kept up to date.

The last modification to the Development Consent was approved on 16 April 2012 to allow the processing of granulated blast furnace slag as a raw material additive in the Kiln 6, for a three days trial and consequential full-scale use, subject to trial report findings.

**Compliance**

**1.7**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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Boral Cement's site inductions for all employees, contractors and sub-contractors have been reviewed and rewritten to include larger proportions of environmental material in response to the management action raised from 2010-2011 AEMR.

Environmental compliance training for site employees, where the conditions of this Consent and other regulatory documents for the Site are communicated, is ongoing.

Environmental issues and environmental compliance are also reviewed at daily site (Lean Management) meetings, weekly Health & Safety meetings, and monthly management meetings.

Management conduct Gemba Walks / Talks on site with operators to discuss any issues with resource efficiency, environment and safety.

**1.8**

**Condition**

*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 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; and
- b) operation of the cement works upgrade.

**Compliance with Condition**

Yes	No
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Compliance with this Condition was demonstrated in the 2007-2008 AEMR. There were no changes to the operation of the Kiln 6 that would require additional evidence of compliance.

**1.9**

**Condition**

*Notwithstanding conditions 1.8 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.*

**Compliance with Condition**

Yes	No
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The DPI has not requested such an update during this reporting period.

**1.10**

**Condition**

*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 1.2. 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.*

**Compliance with Condition**

Yes	No
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Boral Cement Berrima is of the understanding that it is in compliance with the requirements of the Director General and the Conditions of Consent, SEE and documents listed in Condition 1.2.

Boral Cement Berrima is however aware that the operation of the site can impact on the local environment and details of emission excursions were reported to the EPA and DPI in a monthly reports and are compiled in this annual report.

Community complaints are reported as required to EPA and detailed annually to EPA and DPI.

**Management Actions**

Boral Cement Berrima will continue to foster proactive site environmental management and compliance with Condition 1.2.



**CONSTRUCTION AND OCCUPATION CERTIFICATION**

**2.1**

**Condition**

*In relation to the construction and occupation of the cement works upgrade, the Applicant shall provide to the Director-General and Council the following:*

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

**Compliance with Condition**

NA	Yes	No
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This condition does not apply to this reporting period. Compliance has been demonstrated in the previous AEMRs.

Boral Cement requests that this condition be removed from the consent as it refers to construction and occupation, not ongoing operation.

**2.2**

**Condition**

*Prior to the commencement of any construction work associated with the cement works upgrade, the Applicant shall erect at least one sign at the site and in a prominent position at the site boundary where the sign can be viewed from the nearest public place. The sign shall indicate:*

- the name, address and telephone number of the Principal Certifying Authority;*
  - the name of the person in charge of the construction site and telephone number at which that person may be contacted outside working hours; and*
  - a statement that unauthorised entry to the construction site is prohibited.*
- The sign(s) shall be maintained for the duration of construction works.*

**Compliance with Condition**

NA	Yes	No
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This condition does not apply to this reporting period. Compliance has been demonstrated in the previous AEMRs.

Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation.



**Environmental Performance**

**3.1**

**Condition**

*Construction activities associated with the cement works upgrade shall only be carried out:*

- a) *between 7:00 am and 6:00 pm, Monday to Friday inclusive, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;*
- b) *between 7:00 am and 1:00 pm on Saturdays, during periods in which the cement works is shut-down, and construction noise is audible at the boundary of the site;*
- c) *at no time on Sundays or public holidays, during periods when the cement works is shut-down, and construction noise is audible at the boundary of the site;*
- d) *at any time during periods in which the cement works is in operation; and*
- e) *at any time if construction noise is inaudible at the boundary of the site.*

**Compliance with Condition**

NA	Yes	No
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This condition does not apply to this reporting period. Compliance has been demonstrated in the previous AEMRs.

Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation.

**3.2**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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The cement works operates 24 hours per day, 7 days a week.

**3.3**

**Condition**

*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 2 below, the noise level at each receiver location does not exceed the maximum allowable noise contribution limit at the receiver location specified.*

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

<i>Receiver Location</i>	<i>Day<sup>a</sup></i> <i>L<sub>Aeq</sub>(15 minute)</i>	<i>Evening<sup>b</sup></i> <i>L<sub>Aeq</sub>(15 minute)</i>	<i>Night<sup>c</sup></i> <i>L<sub>Aeq</sub>(15 minute)</i>
4 Melbourne Street	37	37	37



Candowie Farm	37	37	37
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- a. Day is defined as the period from 7:00am to 6:00pm Monday to Saturday and 8:00am to 6:00pm on Sundays and public holidays.
- b. Evening is defined as the period from 6:00pm to 10:00pm.
- c. Night is defined as the period from 10:00pm to 7:00am Monday to Saturday and 10:00pm to 8:00am on Sundays and public holidays

**Compliance with Condition**

**Yes** **No**

Compliance with this Condition has previously been established by the Hatch Pty Ltd noise monitoring undertaken in 2007 and reconfirmed by the Hatch noise monitoring conducted in April 2009 and in August/September 2010.

The most recent round of noise monitoring was conducted by Hatch Pty Ltd during June/July 2011. The report (Environmental Noise Compliance Report 2011 for Kiln 6 Upgrade and Cement Mills No 7, dated 19/12/2011), concludes that *"It is the assessment of this study that the plant is in compliance with its licence conditions for noise"*.

Boral Cement Berrima received 19 Noise complaints during the reporting period, mostly during prevailing Southerly winds and overcast conditions. The noise monitoring carried out by Hatch in recent years showed that weather conditions contribute significantly to noise transmission across the site boundary. It is under these conditions that most of the noise complaints occurred. Records of the noise complaints show that the majority of the complaints are during periods of adverse weather conditions including temperature inversions and high winds (wind speeds above 3m/s). Such noise exceedances are excluded from the conditions of the Consent (see Section 3.4 below). Specific complaints resulting to plant operations were addressed and corrective and preventive actions taken.

It was noted in the Audit Report compiled by Somerset Risk Management in November 2011 that *"numerous noise reduction strategies have been implemented through the Plant Maintenance programs, since the 2008 compliance audit. Details of these improvements are recorded in Part 3 of this audit report; titled EMS Compliance Reporting."*

**3.4**

**Condition**

- <sup>1</sup>The maximum allowable noise contributions identified in condition 3.3 apply under all meteorological conditions, except:
- a) during wind speeds greater than 3ms<sup>-1</sup> measured at 10 metres above ground level; or
  - b) during temperature inversion conditions of greater than 3°C/ 100m and wind speeds of greater than 3ms<sup>-1</sup> measured at 10 metres above ground.

**Compliance with Condition**

**Yes** **No**

The Condition under all meteorological conditions and its exceptions is well understood by Boral Management.

<sup>1</sup> Incorporates an EPA General Term of Approval (L6.4)



**3.5**

**Condition**

*For the purpose of assessment of noise contributions specified under condition 3.3, noise from the cement works upgrade shall be:*

- a) measured at the most affected point on or within the receptor site boundary or at the most affected point within 30m of the dwelling (rural situations), where the dwelling is more than 30m from the property boundary; and*
- b) where applicable, subject to the modification factors provided in Section 4 of the New South Wales Industrial Noise Policy (EPA, 2000).*

**Compliance with Condition**

**Yes** **No**

Noise monitoring is being undertaken on behalf of Boral by Hatch Pty Ltd who are taking the measurements in compliance with this condition.

**3.6**

**Condition**

*Notwithstanding condition 3.5 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.*

**Compliance with Condition**

**Yes** **No**

No alternative noise assessment method has been required.

**Air Quality**

**3.7**

**Condition**

*The Applicant shall design, construct, operate and maintain the cement works upgrade in a manner that minimises dust emissions from the site.*

**Compliance with Condition**

**Yes** **No**

Boral Cement Berrima is aware that elevated fugitive dust emissions from the site can occur and has procedures in place to monitor such dust emissions.

In July 2011, a Dust Management Plan was submitted to EPA to meet the requirements of PRP 6 Control of Fugitive Dust, included in Berrima's Environmental Protection Licence. This Plan has been approved by EPA and has been implemented since September 2011.

A total of 21 complaints were received from the community in relation to the deposition of dust on vehicles and properties. All incidents were investigated and appropriate actions were taken. Further details are provided in Attachment No 7 - Complaints Summary.

Boral Cement Berrima has implemented a Dust Deposition Monitoring Program consisting of nine dust deposition



gauges located around the perimeter of the site, as detailed on the site plan provided as Attachment No 1. Each gauge is monitored on a monthly basis to assess compliance against the dust deposition guidelines detailed in the *Approved Methods and Guidance for Analysis for the Modelling and Assessment of Air Pollutants in NSW* (DEC, 2005). An EPA dust deposition guideline criterion of 4g/m<sup>2</sup>/month (expressed as a 12-month rolling average) has been adopted for the Site. The internal PKI until the end of 2012 is to meet this limit at a minimum of 7 out of 9 monitoring points, with the full compliance from 2013.

A graph of the rolling averages for dust deposition gauges is provided in Attachment No 2. The annualised average dust deposition data for the 8 out of 9 dust gauges have shown values below the EPA guidelines of 4g/m<sup>2</sup>/month. Dust gauge 7 showed slightly higher annualised average dust deposition data since Jan 2012. These result from one unusually high (300 % of average value) dust level reported in January 2012 when obvious signs of birds roosting on this gauge were recorded. Dust gauge 7 is located within the site, and it is recommended by Boral Management to relocate Dust gauge 7 to the southern boundary.

The clinker loading chute for trucks is fully operational and has proved efficient in reducing fugitive dust emissions.

The process of crushing and handling Cement Fibre Board has been modified through the installation of 5 water jets to reduce dust generation and impact within the quarry area.

**Management Actions**

Boral Cement Berrima is investigating methods to further minimise dust generation from clinker stockpile formation and out-loading including the use of mobile water atomisers/foggers to provide dust control downwind of the stockpiles.

Boral Cement Berrima will continue to respond rapidly to, thoroughly investigate, and rectify any dust complaints received from the local community. Affected residents will be provided with a voucher to have their vehicle cleaned.

Where the generation of dust is otherwise unavoidable Boral Cement Berrima will, where possible, avoid, minimise, relocate or cease activities that cause dust generation during periods of windy weather.

Boral Cement Berrima is currently implementing a Fugitive Dust Action Plan (PRP 8), including planning the rehabilitation of unsealed surface areas and a landscaping plan for control of windborne dust.

**3.8**

**Condition**

*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.*

**Compliance with Condition**

**Yes** **No**

All transport contractors are made aware of this requirement during site inductions.

Section 3 of the *Driver Code of Conduct – Truck and Heavy Vehicles Operators* (Boral Cement Berrima, September 2011) includes requirements for all drivers of heavy vehicles on site to ensure they cover their loads and prevent spillages.

**3.9**

**Condition**

*All trafficable areas and vehicle manoeuvring areas on the site shall be maintained in a condition that will minimise the generation or emission of wind blown or traffic generated dust from the site at all times.*



## Compliance with Condition

Yes No

During this reporting period Boral Cement Berrima has actively worked to reduce the generation of dust from vehicles and haul roads.

Boral Cement Berrima has implemented a Dust Management Plan as part of the Pollution Reduction Program (PRP 6) for Fugitive Dust, included in the site EPL.

Sealing of the main haul road from the Blue Shale Quarry commenced towards the end of the reporting period and was finalised in the first month of the next reporting period. Capital works budgets for further sealing of haulage roads, and the purchase of a new street sweeper and two wheel wash units have been submitted for approval in the reporting period.

Boral Cement Berrima instigated a program to spray a proprietary dust suppressant on unsealed roads used for material transport. Observations at site have shown this program to be effective in minimising dust emissions due to vehicle traffic on unsealed roads and it is intended to continue with the dust suppressant spraying program where necessary.

Boral Cement Berrima modified its activities such as loading, unloading and crushing of materials in open areas to minimise wind blown dust. Actions include the use of water sprays, stopping or postponing the activities under windy conditions, modifying the process to take place under cover where possible etc.

Boral Cement Berrima also operates a water cart and a road sweeper to minimise traffic generated and wind blown dust from trafficable areas and vehicle manoeuvring areas. Mechanical sweepers undergo regular maintenance programs, to ensure sweepers are working efficiently.

Boral Cement Berrima continues to investigate opportunities to reduce Fugitive Dust throughout the site.

## Discharge Limits

### 3.10

#### Condition

*The Applicant shall design, construct, operate and maintain the cement works upgrade to ensure that for each discharge point listed in Table 3 (Standard Fuels Only) and Table 4 (Non-Standard Fuels) below, the concentration of each pollutant listed for that discharge point does not exceed the maximum allowable discharge concentration limit for that pollutant at the discharge point specified. All concentration limits specified in the table are based on 101.3 kPa, 273 K, dry reference conditions (unless otherwise agreed with the EPA) and shall be determined in accordance with the monitoring requirements described under condition 4.1.*

**Table 3 – Maximum Allowable Discharge Concentration Limits (Air) When Kiln 6 is using only Standard Fuels**

<i>EPA Identification Point</i>	<i>Pollutant</i>	<i>Units of Measure</i>	<i>Concentration Limit</i>
<i>2 – Main Exhaust Stack on Kiln No. 6<sup>a</sup></i>	<i>Cadmium</i>	<i>mgm<sup>-3</sup></i>	<i>0.1</i>
	<i>Mercury</i>	<i>mgm<sup>-3</sup></i>	<i>0.1</i>
	<i>Hazardous substances</i>	<i>mgm<sup>-3</sup></i>	<i>1.0</i>
	<i>Nitrogen oxides</i>	<i>mgm<sup>-3</sup></i>	<i>1000</i>
	<i>Solid particles</i>	<i>mgm<sup>-3</sup></i>	<i>95</i>
	<i>Opacity</i>	<i>% Opacity</i>	<i>20</i>
<i>8 – New Baghouse Outlet</i>	<i>Solid particles</i>	<i>mgm<sup>-3</sup></i>	<i>50</i>

a. *the location of this point is the same as that described in Environment Protection Licence No. 1698*





**Table 4 – Maximum Allowable Discharge Concentration Limits (Air) When Kiln 6 is using Non-Standard Fuels**

<i>EPA Identification Point</i>	<i>Pollutant</i>	<i>Units of Measure</i>	<i>Concentration Limit</i>
2 – Main Exhaust Stack on Kiln No. 6 <sup>a</sup>	<i>Cadmium and Thallium</i>	<i>mg/m<sup>3</sup></i>	<i>0.05</i>
	<i>Chlorine</i>	<i>mg/m<sup>3</sup></i>	<i>200</i>
	<i>Dioxins &amp; Furans</i>	<i>ng/m<sup>3</sup></i>	<i>0.1</i>
	<i>Hazardous substances<sup>b</sup></i>	<i>mg/m<sup>3</sup></i>	<i>0.5</i>
	<i>Hydrogen chloride</i>	<i>mg/m<sup>3</sup></i>	<i>10</i>
	<i>Hydrogen fluoride</i>	<i>mg/m<sup>3</sup></i>	<i>1</i>
	<i>Mercury</i>	<i>mg/m<sup>3</sup></i>	<i>0.05</i>
	<i>Nitrogen Oxides</i>	<i>mg/m<sup>3</sup></i>	<i>800</i>
	<i>Opacity</i>	<i>%Opacity</i>	<i>20</i>
	<i>Solid Particles</i>	<i>mg/m<sup>3</sup></i>	<i>30</i>
	<i>Sulphur Dioxide</i>	<i>mg/m<sup>3</sup></i>	<i>50</i>
	<i>Sulphuric acid mist and/or sulphur trioxide</i>	<i>mg/m<sup>3</sup></i>	<i>100</i>
	<i>Volatile Organic Compounds<sup>c</sup></i>	<i>ppm<sup>c</sup></i>	<i>20<sup>c</sup></i>

- a. The location of this point is the same as that described in Environment Protection Licence No. 1698.
- b. Aggregate of Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni, Se, Sn and V.
- c. Or Total Organic Carbon or other equivalent(s) as agreed to by EPA.

**Compliance with Condition – Stack Testing**

**Yes**   **No**

Stack emission monitoring when burning standard fuels was conducted by ECS Stack Pty Ltd in accordance with the sampling methods specified under the Environment Protection Licence 1698 and demonstrated compliance with the emission limits for standard fuels for all monitoring points. The summary of stack monitoring data for Kiln 6 since 2003 is presented in Attachment 3.

A copy of the report is provided as Attachment No 4.

No Non-Standard Fuels were used during this reporting period and so no Non-Standard Fuels stack testing was required.

**Stack Emission Monitoring Results - Standard Fuels**

<i>EPA Identification Point</i>	<i>Pollutant</i>	<i>Units of Measure</i>	<i>Concentration Limit</i>	<i>Stack Test</i>
2 – Main Exhaust Stack Kiln No 6	Cadmium	mgm <sup>-3</sup>	0.1	0.0019
	Mercury	mgm <sup>-3</sup>	0.1	0.011
	Hazardous substances	mgm <sup>-3</sup>	1.0	0.075
	Nitrogen oxides	mgm <sup>-3</sup>	1000	643
	Solid particles	mgm <sup>-3</sup>	95	53.2
	Opacity <sup>a</sup>	% Opacity	20	Continuous

<sup>a</sup> Opacity was not tested during the stack test campaign as it is monitored on a continuous basis using the Continuous Emission Monitoring System. Excursions from Opacity Limit are provided in Attachment No 5.

Monitoring Point No 8: Post-commissioning emission testing of Point 8 - New Baghouse Outlet – has previously been established (2004, 2007). No further testing was required. This monitoring point was recently removed from the site Licence as it does not discharge to the atmosphere but to the main stack (Monitoring Point 2). A Modification Application has been lodged with DPI to formally harmonise Kiln 6 Consent with the current Environmental Licence requirements.



**Compliance with Condition – Continuous Emissions Monitoring**

**Yes** **No**

When burning standard fuels the only parameter that was required to be monitored continuously was Opacity. On 30 March 2012 the site received a new EPA licence; since then the Opacity was replaced with continuous monitoring of Solid Particles. A Modification Application has been lodged with DPI to formally harmonise Kiln 6 Consent with the current Environmental Protection Licence requirements.

The 20% opacity limit was exceeded (in the period from 1 May 2011 to 30 March 2012) 173 times during the reporting period when burning standard fuels, recorded mostly during kiln start-ups, stops and process upsets. The total period of exceedance was 3 days 12 hours and 34 minutes. A summary of Opacity excursions is provided in Attachment No 5.

Opacity excursions were not considered a non-conformance by Somerset Risk Management during the 3-yearly audit conducted in the reporting period, therefore it was not marked as non-conformance in this report. Opacity excursions primarily resulted from trips of the Electrostatic Precipitator (ESP), kiln startups and stops, and other process disturbances, as detailed in Attachment No 5. As per Consent (Section 4.2), elevated continuous monitoring readings do not count towards the licence emission limits in upset conditions as reliability and accuracy of measurement can only be achieved under steady-state process conditions.

ESP trips occur when the concentrations of carbon monoxide (CO) and oxygen in the kiln exhaust gas approach levels at which explosions could be triggered by the high voltages used in the ESP. Explosion in ESP is a serious H&S and environmental risk. ESP trips are therefore an essential safety and environmental protection measure.

When an ESP trip occurs, Raw Mill 6 is automatically shut off to minimise dust emissions, and plant operators make other adjustments necessary to bring the system under control. The ESP is reactivated automatically when CO concentrations return to safe levels.

There were no non-compliances with the licence limit for Solid Particles in the reporting period (starting from 1 April 2012).

The kiln operated for a total of 6,834 hours during this reporting period.

**3.10A**

**Condition**

For the purposes of compliance with condition 3.10, for each pollutant specified in Table 4 in condition 3.10, the reference conditions and averaging period of a pollutant discharged must be reported according to the reference conditions and averaging period specified for that pollutant in Table 5, or as otherwise agreed to by EPA.

**Table 5 – Reporting Reference Conditions and Averaging Periods**

<i>EPA Identification Point</i>	<i>Pollutant</i>	<i>Units of Measure</i>	<i>Concentration Limit</i>
2 – Main Exhaust Stack on Kiln No. 6	Opacity	Gas stream temperature above dew point, path length corrected to stack exit diameter	6 minute block, calculated from at least 36 data points evenly spaced over each 6 minute period.
	Solid particles	Dry, 273K, 101.3 kPA, 10%O <sub>2</sub>	As per test method (for campaign monitoring)
	Solid particles	Dry, 273K, 101.3 kPA, 10%O <sub>2</sub>	24-hour average per method agreed to by EPA (for continuous monitoring)
	Nitrogen Oxides	Dry, 273K, 101.3 kPA, 10%O <sub>2</sub>	1-hour average per method agreed to by EPA (for continuous monitoring)
	Dioxins and Furans	Dry, 273K, 101.3 kPA, 10%O <sub>2</sub> , I-TEQ	As per test method



	<i>All other air pollutants</i>	<i>Dry, 273K, 101.3 kPA, 10%O<sub>2</sub></i>	<i>As per test method</i>
	<i>All other air pollutants</i>	<i>As agreed to by EPA (for continuous monitoring)</i>	<i>As agreed to by EPA (for continuous monitoring)</i>

<p><b>Compliance with Condition</b></p> <p>Table 5 refers to emissions from the kiln while using non standard fuels. Since no non standard fuels were used the Reference Conditions and Averaging periods specified under Table 5 do not apply to the current reporting period.</p> <p>However we wish to state that all monitoring and reporting of pollutants in the current reporting period during the use of standard fuels were in accordance with the relevant test methods, averaging periods and reference conditions specified in the Protection of Environment Operations (Clean Air ) Regulation 2002 and the Berrima EPL 1698.</p>	<table border="1"> <tr> <td style="background-color: #4CAF50; color: white;">Yes</td> <td style="background-color: #ccc;">No</td> </tr> </table>	Yes	No
Yes	No		

**Water Quality**

**3.11**

**Condition**

*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.*

<p><b>Compliance with Condition</b></p> <p>Lake Quality receives stormwater drainage from the site and that water is used back in the process and in site maintenance. Water in Lake Quality is monitored monthly. The lake overflows offsite only in intensive rain periods. Each overflow event is monitored for a range of water quality parameters, a per Consent requirements. The frequency of sample collection was changed in the reporting period (both in the Licence and in the Consent) from "every day" to "every overflow event".</p> <p>During the current reporting period 4 overflow events occurred, from mid July 2011 to mid April 2012 on dates of 22 July 2011, 18 to 22 August 2011, 29 February to 29 March 2012, and 19 to 22 April 2012 due to heavy rain.</p> <p>The results of the monitoring are provided in the response to Condition 4.3, and are graphed against all overflow event results, from 2005 to 2012 in Attachment No 6.</p>	<table border="1"> <tr> <td style="background-color: #4CAF50; color: white;">Yes</td> <td style="background-color: #ccc;">No</td> </tr> </table>	Yes	No
Yes	No		



**Erosion and Sediment Control**

**3.12**

**Condition**  
*All construction vehicles exiting the site, having had access to unpaved areas, shall depart via a wheel-wash facility.*

**Compliance with Condition**  NA  Yes  No  
 Not applicable to this reporting period.  
 Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation. Compliance has been demonstrated in the previous AEMRs.

**3.13**

**Condition**  
*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.*

**Compliance with Condition**  NA  Yes  No  
 Not applicable to this reporting period.  
 Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation. Compliance has been demonstrated in the previous AEMRs.

**Drainage and Stormwater**

**3.14**

**Condition**  
*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.*

**Compliance with Condition**  Yes  No  
 Compliance with this Condition was established in the 2007-2008 AEMR.  
 Boral Cement Berrima is actively harvesting rainwater from within site catchment for operational purposes, further reducing stormwater leaving the site.



**Traffic and Transport**

**3.15**

**Condition**

*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.*

**Compliance with Condition**

NA	Yes	No
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Not applicable to this reporting period.

Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation. Compliance has been demonstrated in the previous AEMRs.

**3.16**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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Construction activities were completed prior to the commencement of this reporting period and therefore are not applicable.

Sufficient parking is provided on site for all employees and contractors during operation of the upgrade. In addition, there is sufficient distance between the weighbridge and the site entrance on Taylor Avenue to prevent heavy vehicles queuing on Taylor Avenue.

**Waste Management**

**3.17**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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Boral Cement did not receive any waste material generated outside of the site unless authorised by the consent and EPL.

The automatic gate system is operational at the main site entry to reduce the potential for illegal disposal of material on site from external unauthorised parties.



**3.17A**

**Condition**

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

- a) any Non-Standard Fuels approved for use at the upgraded Kiln 6 under this consent;
- b) any material normally brought to the site for the purpose of cement clinker production (as detailed in the documents listed under condition 1.2 of this consent); and
- c) any material normally recycled or reused within the cement works.
- 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.

**Compliance with Condition**

**Yes** **No**

Noted.

**3.17AB**

**Condition**

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

**Compliance with Condition**

**Yes** **No**

The RRE for GBFS trial was obtained from EPA on 30 December 2011. The trial was conducted in the first month of the next reporting period.

**3.17AC**

**Condition**

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 alternative raw material in Kiln 6. The Applicant shall:

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

**Compliance with Condition**

**Yes** **No**

The trial was conducted on 14-16 May 2012.

Stack testing of all relevant air emissions and trace elements was conducted on 15 May. Quality controlled GBFS only was used for the trial.

The emission report was pending at the time of submission of this AEMR.



**3.17AD**

**Condition**

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

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

**Compliance with Condition**

Yes	No
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The Verification Report is currently in preparation. A 1 month extension was applied for and obtained from DPI due to the extended reporting time required by stack testing consultants.

**3.17AE**

**Condition**

*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 the maximum usage rate that is determined in writing by the Director-General in consultation with the EPA.*

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

**Compliance with Condition**

Yes	No
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Full scale usage of GBFS as a raw material additive in Kiln 6 has not yet commenced during the reporting period.

**3.17B**

**Condition**

*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:*

- d) AKF1.*

**Compliance with Condition**

Yes	No
-----	----

No AKF1 or other Group A wastes were stored on site during this reporting period.



**3.17C**

**Condition**

*Except as provided by the condition of a licence under the Protection of the Environment Operations Act 1997, the Applicant must assess, classify and dispose of all wastes generated as a result of the use of Non-Standard Fuels in accordance with the EPA's Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes.*

**Compliance with Condition**

Yes	No
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There were no Non standard Fuels used during the 2011/12 reporting period or waste generated.

**Visual Amenity**

**3.18**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
-----	----

The lighting of the site does not impact greatly on the visual amenity of the surrounding properties and roadways. Additional light shrouding has previously been installed to further minimise light spill, other lights have been redirected, and automatic timing devices have been retrofitted to minimise the number of lights on at any one time. However, for health and safety reasons a minimum number of lights is required to be on continuously on the tower during periods of darkness.

No complaints about light spill have been received during this reporting period. A comment on disturbing lights was included in one of numerous public submissions to DPI in relation to "Coal for Sale" Modification Application 6 of the Consent. This neighbour, who never approached Boral in the matters presented in his submission, was contacted, and the light issue was investigated. Hedging on the neighbour's boundary will be included the currently prepared Landscaping Plan to minimise the light penetration.

**3.19**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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Compliance with this condition has previously been confirmed.





**Non-Standard Fuels**

**3.20**

**Condition**

*For each Non-Standard Fuel approved for use at the development the Applicant shall provide a fuel specification, to be approved by the Director-General and the EPA prior to the use of that Non-Standard Fuel at the development under this consent. The Non-Standard Fuel specification shall include, but not be limited to, the minimum calorific value and the maximum quantity of all relevant pollutants, particularly the listed pollutants.*

**Compliance with Condition**

**Yes** **No**

The proposed fuel specifications for AFK1, Hi Cal 50 and AFK5 were provided to both DPI and DECC for review and approval. DPI delegated authority for approving the specifications to DECC. DECC approved all three fuel specifications on 17/08/2006.

There were no Non Standard Fuels used during this reporting period.

**3.21**

**Condition**

*Based on the Non-Standard Fuel specification specified in condition 3.20 the following fuel specification criteria are required to be met:*

- a) for Hi CAL 50 a mercury specification no greater than 1 mg/kg and a cadmium specification no greater than 10 mg/kg;*
- b) for AKF1 a mercury specification no greater than 2 mg/kg and a cadmium specification no greater than 5 mg/kg;*
- c) organohalogen compounds, expressed as chlorine, in any Non-Standard Fuel not to exceed 1% by weight; and*
- 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.*

**Compliance with Condition**

**Yes** **No**

No Non-Standard Fuels were received or used at Boral Cement Berrima during this reporting period and consequently this condition is not applicable.



**3.22**

**Condition**

*Prior to the use of Non-Standard Fuels at the development in accordance with this consent, the Applicant shall implement a Tracking Program that meets the requirements of the Director-General. The Tracking Program shall include, but not be limited to, the identification and recording of the following information in accordance with the time periods specified in condition 3.23:*

- a) batch analyses of Non-Standard Fuels received at the development as provided by the suppliers, and the results of any check analyses carried out by the Applicant as part of the quality control management procedures required under condition 6.7 of this consent;*
- b) a mass inventory of each listed pollutant entering the process in raw materials, conventional fuels and Non-Standard Fuels, with particular attention to, but not limited to chlorine, mercury, cadmium and chromium;*
- c) emission factors for each listed pollutant calculated from inputs, outputs, and measured air emissions, variance in the emissions factors from period to period and an assessment with regards to the reasons for any such variance; and*
- d) any adjustments that may be necessary to Non-Standard Fuel specifications arising from the Tracking Program analysis.*

**Compliance with Condition**

Yes	No
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The Non-Standard Fuels pollutant tracking procedure (*SP10-01-10 Non-Standard Fuels Pollutant Tracking Procedure*) was issued on 1 March 2003 and a copy was provided to DPI by email on 2 March 2003. The procedure addresses all requirements of Condition 3.22. The procedure has not been recently reviewed as the Site has not re-commenced the Non-Standard Fuels programme.

Non-Standard Fuels were not received or used at the site during the reporting period.

**3.23**

**Condition**

*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 Director-General. The Report shall be submitted to the Director-General:*

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

**Compliance with Condition**

Yes	No
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There were no Non Standard Fuels used during this reporting period.



**3.24**

**Condition**

To ensure the emissions of air pollutants are minimised, the Applicant shall NOT use Non-Standard Fuels unless:

- a) the feed rates for Non-Standard Fuels are maintained at a steady controlled rate to provide for combustion in a proper and efficient manner; and
- b) a temperature of above 850°C is maintained in the zone where Non-Standard Fuels are fired at the main-firing end of Kiln 6; and
- c) a temperature of above 800°C is maintained in the zone where Non-Standard Fuels are fired at or in the vicinity of the pre-calciner/ de-nox system for Kiln 6; and
- d) a temperature of above 300°C is maintained at the outlet of pre-heater strings for Kiln 6; and
- e) a temperature of below 200°C is maintained at the inlet to the electrostatic precipitator and fabric filter for Kiln 6; &
- f) the continuous measurements required by this consent, show that all maximum allowable discharge concentration limits values prescribed in Table 4 of condition 3.10 are complied with. The Applicant shall cease to use Non-Standard Fuels immediately in Kiln 6 if any maximum allowable discharge concentration limit is exceeded.

**Compliance with Condition**

Yes	No
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Non-Standard Fuels were not used during this reporting period.

**3.25**

**Condition**

Without prejudice to condition 3.24e), Kiln 6 shall under no circumstances continue to use Non-Standard Fuels for a period of more than four hours uninterrupted where emission limits are exceeded; and the cumulative duration of operation under such conditions over one year shall be less than 60 hours.

**Note:** This condition refers to abnormal operating conditions associated with technically unavoidable stoppages, disturbances, trips, or failures of the kiln or its pollution control or pollutant measurement equipment, during which the concentrations in the discharges of regulated substances into the air may briefly exceed the prescribed emission limit values.

**Compliance with Condition**

Yes	No
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Non-Standard Fuels were not used during this reporting period.



**Environmental Monitoring and Auditing**

**Air Quality**

**4.1**

**Condition**

During operation of the upgraded Kiln 6, the Applicant shall determine the pollutant concentrations and emission parameters specified in Table 6 (Standard Fuels Only) and Table 7 (Non-Standard Fuels) below, at the discharge points indicated and employing the sampling and analysis method specified. All pollutant concentrations and emission parameters for each discharge point shall be determined concurrently and at the frequency indicated in the table, unless otherwise agreed with the EPA.

**Table 6 – Discharge Point and Parameter Monitoring (Air) when Kiln 6 is using only Standard Fuels.**

Discharge Point	Pollutant/Parameter	Units of Measure	Frequency	Sampling Method <sup>b</sup>
Point 1 <sup>a</sup> – Main exhaust stack on Kiln No. 5;  and  Point 2 <sup>a</sup> – Main Exhaust Stack on Kiln No. 6	Cadmium	mgm <sup>-3</sup>	Annual	TM-12, 13, 14
	Mercury	mgm <sup>-3</sup>	Annual	TM-12, 13, 14
	Hazardous substances	mgm <sup>-3</sup>	Annual	TM-12, 13, 14
	Nitrogen oxides	mgm <sup>-3</sup>	Annual	TM-11
	Velocity	ms <sup>-1</sup>	Annual	TM-2
	Volumetric flow rate	m <sup>3</sup> s <sup>-1</sup>	Annual	TM-2
	Temperature	°C	Annual	TM-2
	Moisture content in stack gases	%	Annual	TM-22
	Dry gas density	kgm <sup>-3</sup>	Annual	TM-23
	Molecular weight of stack gases	g.gmole <sup>-1</sup>	Annual	TM-23
	Carbon dioxide in stack gases	%	Annual	TM-24
	Oxygen in stack gases	%	Annual	TM-25
Point 8 – New Baghouse Outlet	Solid particles	mgm <sup>-3</sup>	Post commissioning	TM-15
	Velocity	ms <sup>-1</sup>	Post commissioning	TM-2
	Volumetric flow rate	m <sup>3</sup> s <sup>-1</sup>	Post commissioning	TM-2
	Temperature	°C	Post commissioning	TM-2
	Moisture content in stack gases	%	Post commissioning	TM-22
	dry gas density	kgm <sup>-3</sup>	Post commissioning	TM-23
	Molecular weight of stack gases	g.gmole <sup>-1</sup>	Post commissioning	TM-23
	carbon dioxide in stack gases	%	Post commissioning	TM-24
oxygen in stack gases	%	Post commissioning	TM-25	

a. the location of this point is the same as that described in EPL No. 1698.

b. the Sampling Method shall be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales

**Table 7 – Discharge Point and Parameter Monitoring (Air) when Kiln 6 is using Non-Standard Fuels.**

Discharge Point	Pollutant/Parameter	Units of Measure	Frequency	Sampling Method <sup>b</sup>
Point 2 <sup>a</sup> – Main Exhaust Stack on Kiln No. 6	Antimony (Sb)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
	Arsenic (As)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
	Beryllium (Be)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
	Cadmium (Cd)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
	Chlorine	mg/m <sup>3</sup>	Special Frequency 1	TM - 7, 8



Carbon dioxide	%	Special Frequency 1 and Continuous	CEM-3
Carbon monoxide	%	Special Frequency 1 and Continuous	CEM-4
Chromium (Cr)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Cobalt (Co)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Copper (Cu)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Dioxins & Furans	ng/m <sup>3</sup>	Special Frequency 1	TM - 18
Dry gas density	kg/m <sup>3</sup>	Special Frequency 1	TM-23
Hazardous substances <sup>c</sup>	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Hexavalent chromium (Cr 6+)	mg/m <sup>3</sup>	Special Frequency 1	OM - 4
Hydrogen chloride	mg/m <sup>3</sup>	Special Frequency 1	TM - 7, 8
Hydrogen fluoride	mg/m <sup>3</sup>	Special Frequency 1	TM - 9
Lead (Pb)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Manganese (Mn)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Mercury	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Mercury (Hg)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Moisture content	%	Special Frequency 1 and Continuous	As agreed to by EPA
Molecular weight of stack gases	g/g-mole	Special Frequency 1	As agreed to by EPA
Nickel (Ni)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Nitrogen Oxides (as NO <sub>2</sub> )	mg/m <sup>3</sup>	Special Frequency 1 and Continuous	CEM-2
Opacity	%Opacity	Special Frequency 1 and Continuous	CEM-1
Oxygen (O <sub>2</sub> )	%	Special Frequency 1 and Continuous	CEM-3
Selenium (Se)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Solid Particles	mg/m <sup>3</sup>	Special Frequency 1 and Continuous	As agreed to by EPA
Sulphur Dioxide	mg/m <sup>3</sup>	Special Frequency 1 and Continuous	CEM-2
Sulphuric acid mist and/or sulphur trioxide	mg/m <sup>3</sup>	Special Frequency 1	TM - 3
Temperature	°C	Special Frequency 1 and Continuous	As agreed to by EPA
Thallium	mg/m <sup>3</sup>	Special Frequency 1	As agreed to by EPA
Tin (Sn)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Vanadium (V)	mg/m <sup>3</sup>	Special Frequency 1	TM - 12, 13 & 14
Velocity	m/s	Special Frequency 1 and Continuous	As agreed to by EPA
VOC <sup>d</sup>	ppm <sup>d</sup>	Special Frequency 1 and Continuous <sup>d</sup>	As agreed to by EPA
Volumetric flowrate	m <sup>3</sup> /s	Special Frequency 1 and Continuous	As agreed to by EPA

a. the location of this point is the same as that described in EPL No. 1698.

b. Special Frequency 1 is defined as a round of air emission monitoring (for each of the parameters nominated for a discharge point) conducted:

- every 3 months for a minimum of 12 months, and

- if no parameter exceeds its relevant limit (if any) for 4 consecutive 3-monthly tests over 12 months, thereafter bi-annually for a minimum of 12 months, and

- if no parameter exceeds its relevant limit (if any) for 2 consecutive bi-annual tests over 12 months, thereafter as agreed to by EPA.

c. aggregate of Sb, As, Be, Cd, Cr, Co, Pb, Mn, Hg, Ni, Se, Sn and V.

d. or Total Organic Carbon or other equivalent(s) as agreed to by EPA.



<b>Compliance with Condition</b>	<b>Yes</b>	<b>No</b>
<p>Stack emission monitoring, when Kiln 6 was using only standard fuels, was conducted by ECS Stack Pty Ltd in May/June 2011 for the parameters specified in Table 6 in accordance with the sampling methods and frequencies specified in Table 7.</p> <p>No Non-Standard Fuels were used during this reporting period and therefore Non-Standard Fuels stack testing as detailed under Table 7 was not required.</p> <p>Post-commissioning emission testing of Point 8 - New Baghouse Outlet – has previously been established (2004, 2007). No further testing was required.</p> <p>Kiln 5 has been demolished during this reporting period and consequently was not subject to a stack test. A Modification Application 8 has been lodged with DPI to remove redundant sampling points and harmonise the Consent with the current EPL.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**4.1A**

**Condition**

*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.*

<b>Compliance with Condition</b>	<b>Yes</b>	<b>No</b>
<p>Compliance with this Condition has previously been demonstrated. No Non-Standard Fuels were used during this reporting period.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**4.1B**

**Condition**

*Prior to the commencement of the use of Non-Standard Fuels in accordance with this consent, the Applicant shall establish an Ambient Air Quality Monitoring Program in consultation with, and to meet the requirements of, the Director-General, the EPA, and the NSW Department of Health. The monitoring program shall be consistent with the EPA's Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales and shall be designed to generate sufficient information to meet the requirements of this consent with regards to the First-Year Monitoring and Modelling Assessment Report. The ambient monitoring program shall include:*

- a) *an ambient air quality monitoring station which shall:*
  - i) *be placed at a location near New Berrima, but away from its immediate influence in terms of air pollution;*
  - ii) *monitor TSP, PM<sub>10</sub> and listed pollutants with sampling to be undertaken over an appropriate period (to be agreed with the EPA) every six days; and*
  - iii) *continue to sample for at least one year from the commencement of the use of Non-Standard Fuels, its continuation thereafter to be reviewed after analysis of First-Year Monitoring and Modelling Assessment Report.*
- b) *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 Australian Standard AS2923 – 1987.*



<b>Compliance with Condition</b>	<b>Yes</b>	<b>No</b>
All requirements of this condition have been met. Non Standard Fuels were not used during this reporting period.		

**4.1C**

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

<b>Compliance with Condition</b>	<b>Yes</b>	<b>No</b>
No Non-Standard Fuels were used during this reporting period therefore this condition does not apply.		

**4.2**

<b>Condition</b>
<i>If the results of the monitoring required under condition 0 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 0 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>
<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>

<b>Compliance with Condition</b>	<b>Yes</b>	<b>No</b>
As stated in Section 3.10, Kiln 6 experienced numerous Opacity excursions during the reporting period, typically when under upset conditions (i.e. not under the design load and normal operation). As opacity is more correctly applied to smoke monitoring, not dust as in the cement works, the opacity limit was removed from the site's EPL, and replaced with continuous measurement of Solid Particles on 30 March 2011.		



## Water Quality Monitoring

### 4.3

#### Condition

During operation of the cement works upgrade, the Applicant shall determine the pollutant concentrations and discharge parameters specified in Table 8 below, at the discharge point indicated and employing the sampling and analysis method specified. All pollutant concentrations and discharge parameters for the discharge point shall be determined concurrently at the frequency indicated in the table.

**Table 8 - Discharge Point Pollutant and Parameter Monitoring (Water)**

Discharge Point	Pollutant / Parameter	Units of Measure	Frequency	Sampling Method <sup>a</sup>
Point 1 – Overflow point as shown on the document identified in condition 1.2h)	Biological Oxygen Demand (BOD)	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Oil and Grease	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Total suspended solids	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	pH		Each overflow event	Grab Sample
	Chemical Oxygen Demand (COD)	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Total Phosphorus	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Metals (Aluminium, Barium, Calcium, Copper, Lead, Magnesium, Manganese, Nickel, Potassium, Sodium, Total Iron, Zinc)	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Boron	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Chloride	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Cyanide	mgL <sup>-1</sup>	Each overflow event	Grab Sample
	Fluoride	mgL <sup>-1</sup>	Each overflow event	Grab Sample
Sulphate	mgL <sup>-1</sup>	Each overflow event	Grab Sample	

a. the Sampling Method shall be undertaken in accordance with the Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales.

#### Compliance with Condition

Yes	No
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During the current reporting period 4 overflow events occurred, from mid July 2011 to mid April 2012 on dates of 22 July 2011, 18 to 22 August 2011, 29 February to 29 March 2012, and 19 to 22 April 2012 due to heavy rain.

The results of the monitoring are graphed against all overflow event results, from 2005 to 2012, in Attachment No 6.

The frequency of sample collection was changed in the reporting period (both in the Licence and in the Consent) from "every day" to "every overflow event".

### 4.3A

#### Condition

The Applicant shall ensure that all surface water discharges from the site comply with the

- a) discharge limits (both volume and quality) set for the development in any EPL; or
- b) relevant provisions of the POEO Act.





**Compliance with Condition**

Yes	No
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The site has no water discharge limits (volume or quality) set by the EPL, but the water discharges are monitored according to the EPL; the monitored parameters are within the relevant provisions of the POEO Act.

**4.4**

**Condition**

*The Applicant may seek the approval of the Director-General to alter the frequency of and/or requirement to monitor any pollutant concentration or parameter required under condition 4.3 of this consent. Any request for approval shall only be made provided:*

- a) *concentration/ parameter determination has been undertaken for a period of no less than 12 months (measured from the commencement of operation of the cement works upgrade);*
- b) *there has been no exceedance of any limit placed on the subject concentration/ parameter by any statutory guidelines within that 12-month period;*
- c) *there has been no reasonable complaint received from the public in relation to the subject concentration/ parameter within the preceding 12-month period (refer to condition 5.3 of this consent); and*
- d) *the request is accompanied by written agreement of the EPA with the proposed alteration to the frequency and/ or requirement to monitor of pollutant concentration or parameter determination.*

*Note: Condition 4.4 recognises that on-going monitoring may demonstrate that the concentration of pollutants and/ or parameters discharged from the site consistently meets relevant statutory guidelines, and the need for rigorous and frequent monitoring may be relaxed.*

**Compliance with Condition**

Yes	No
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Boral Cement sought to alter the requirements of condition 4.3 during this reporting period to harmonise the sampling frequency with the changes in the EPL introduced in May 2011. The Consent was amended as per Modification Application 7.



**Auditing**

**4.5**

**Condition**

*Within three years 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 EPA and Council, within one month of the completion of the Audit. The Audit shall:*

- a) be carried out in accordance with ISO 14010 - Guidelines and General Principles for Environmental Auditing and ISO 14011 - Procedures for Environmental Auditing;*
- b) assess compliance with the requirements of this consent, and other licences and approvals that apply to the cement works upgrade;*
- 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*
- d) review the effectiveness of the environmental management of the cement works upgrade, including any environmental impact mitigation works.*

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

**Compliance with Condition**

Yes	No
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A 3-yearly audit was conducted by an independent auditor (Somerset Risk Management) on 14-16 November 2011. The report has been submitted to DPI in December 2011.

**4.6**

**Condition**

*Within 12 months of the receipt of the first load of 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 Director-General. The Audits are to be carried out by a duly qualified and independent person or team to be approved by the Director-General, and submitted directly to the Director-General, 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:*

- a) 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;*
- b) 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;*



- c) *assessment of quality control and quality assurance measures implemented by the Non-Standard Fuel suppliers, especially with regards to the sampling and analysis undertaken to ensure that Non-Standard Fuels comply with the relevant fuel specification;*
- 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; and*
- e) *suggestion of any recommendations with respect to any of the matters listed above.*

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

**Compliance with Condition**

NA	Yes	No
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On 31 January 2008 DPI suspended this condition in light of the suspension of the Non-Standard Fuels program in August 2007, part way through the first year of the program. Non-Standard Fuels were not used since, including this reporting period.

Boral Cement Berrima has no fixed timetable in relation to recommencing the Non Standard Fuels program. Once it is reactivated, a revised reporting deadline will be agreed with DPI.

**Community Information and Involvement**

**5.1**

**Condition**

*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.*

**Compliance with Condition**

Yes	No
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Documentation required under this consent is available for inspection at the site upon request.

Where appropriate information is made available in a suitable electronic format on the Boral Cement Berrima's website, [http://www.boral.com.au/article/berrima\\_cement\\_mainpage.asp](http://www.boral.com.au/article/berrima_cement_mainpage.asp).

**5.2**

**Condition**

*Prior to the commencement of construction for the cement works upgrade, the Applicant shall ensure that the following are available for community complaints for the life of the cement works upgrade (including construction and operation):*

- a) *a telephone number on which complaints about operations on the site may be registered;*
- b) *a postal address to which written complaints may be sent; and*
- c) *an email address to which electronic complaints may be transmitted, should the Applicant have email service*

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



**Compliance with Condition**

Yes	No
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The site complaints procedure is well established. Contact details for Boral Cement Berrima are included on all site entrance signage, and include a telephone number, postal address and email address.

**5.3**

**Condition**

*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:*

- a) *the date and time, where relevant, of the complaint;*
- b) *the means by which the complaint was made (telephone, mail or email);*
- c) *any personal details of the complainant that were provided, or if no details were provided, a note to that effect;*
- d) *the nature of the complaint;*
- e) *any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and*
- f) *if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.*

*The Complaints Register shall be made available for inspection by the EPA or the Director-General upon request.*

**Compliance with Condition**

Yes	No
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BCSC has an established complaint procedure. A summary of all complaints (by type) received during this reporting period is provided below:

- Dust complaints – 21
- Noise complaints – 19
- Light spill complaints – 0
- Other complaints – 2

A copy of the complaints register including the details required under Condition 5.3 is provided as Attachment No 7.

**5.4**

**Condition**

*Prior to the use of Non-Standard Fuels at the development the Applicant shall establish a Community Liaison Group that has access to all environmental management plans and monitoring data, environmental reporting and tracking and audit reports required by this consent. The Group shall:*

- a) *Be comprised of the following, whose appointment has been approved by the Director-General:*
  - i) *1 or 2 representatives from the Applicant, including the person responsible for environmental management at the development;*
  - ii) *1 representative from Council; and*
  - iii) *3 or 4 representatives from the local community.*
- b) *Be chaired by a representative agreed to by the Group and approved by the Director-General;*



- c) *Meet a minimum of once in every 6 month period; and*
- d) *Review and provide advice on the environmental performance of the development, including providing comment where necessary on any environmental management plans, monitoring results, audit reports, or complaints.*

**Compliance with Condition**

**Yes** **No**

The CLC was established in April 2004 and has been operating in accordance with Condition 5.4 during the current reporting period. Since 2010, including the current reporting period, the CLC was converted to public meetings, including invitations to the CLC members, as the CLC format proved unsuccessful in communicating meeting contents and outcomes to the broader community.

Although Boral Cement Berrima has not operated the Non Standard Fuels Program during this reporting period it is committed to continuing its liaison with the community and the CLC process.

Four community meetings were held during this reporting period, on 30 May 2011, 15 Sept 2011, 7 December 2011, and 14 March 2012.

Notes of meetings and copies of presentations made at the community meetings are sent to all meeting participants and are displayed in the community section of the Berrima website, [http://www.boral.com.au/article/berrima\\_cement\\_our\\_community.asp](http://www.boral.com.au/article/berrima_cement_our_community.asp).

**5.5**

**Condition**

*The Applicant shall at its own expense:*

- a) *Ensure that 1 or 2 of its representatives attend the Group's meetings;*
- b) *Provide the Group with regular information on the environmental management and performance of the development;*
- c) *provide access to independent scientific/technical support to assist member in understanding and interpreting information provided, if requested;*
- d) *provide meeting facilities for the Group, where necessary;*
- e) *arrange site inspections for the Group, if requested;*
- f) *take minutes of the Group's meetings and make these minutes available to the public for inspection within 14 days of the Group meeting, or as agreed to by the Group;*
- g) *respond to any advice or recommendations the Group may have in relation to the environmental management or performance of the development; and*
- h) *maintain a record and a copy of the minutes of each Group meeting, and any responses to the Group's recommendations, to be provided to the Director-General upon request.*

**Compliance with Condition**

**Yes** **No**

Community meetings were organised in accordance with Condition 5.5 during this reporting period.



**Environmental Management**

**CEMP**

**6.1**

**Condition**

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:

- a) a description of all activities to be undertaken on the site during construction, including an indication of stages of construction, where relevant;
- 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;
- c) specific consideration of measures to address any requirements of the Department and the EPA during construction;
- 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;
- e) a description of the roles and responsibilities for all relevant employees involved in construction; and
- f) the Management Plans listed under condition 6.2 of this consent.

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 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 EPA as soon as practicable.

**Compliance with Condition**

NA	Yes	No
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Not applicable to this reporting period.

Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation. Compliance has been demonstrated in the previous AEMRs.

**6.2**

**Condition**

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:

- 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 NSW Fire Brigades Commissioner prior to inclusion in CEMP.
- b) a **Hazard and Operability Study** of the cement works upgrade chaired by an independent, qualified person or



*team approved by the Director-General. The Study shall be carried out in accordance with the Department's publication Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines.*

- c) a **Construction Safety Study** for the cement works upgrade, prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines.*
- d) an **Erosion and Sedimentation Management Protocol** to detail measures to minimise erosion during construction of the cement works upgrade. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:*
- e) details of erosion, sediment and surface water pollution control measures and practices to be implemented during construction of the cement works upgrade; and*
- f) 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.*

**Compliance with Condition**

NA	Yes	No
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Not applicable to this reporting period.

Boral Cement requests that this condition be removed from the consent as it refers to construction, not ongoing operation. Compliance has been demonstrated in the previous AEMRs.

**OEMP**

**6.3**

**Condition**

*The Applicant shall prepare and implement an **Operation Environmental Management Plan (OEMP)** to detail an environmental management framework, practices and procedures to be followed during the operation of the cement works upgrade. The plan shall include, but not necessarily be limited to:*

- a) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the cement works upgrade, including all consents, licences, approvals and consultations;*
- b) a description of the roles and responsibilities for all relevant employees involved in the operation of the cement works upgrade;*
- c) overall environmental policies and principles to be applied to the operation of the cement works upgrade;*
- d) standards and performance measures to be applied to the cement works upgrade, and a means by which environmental performance can be periodically reviewed and improved;*
- e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent;*
- f) the Management Plans listed under condition 6.4 of this consent; and*
- g) the environmental monitoring requirements outlined under conditions 0 to 4.3 of this consent, inclusive.*

*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 to the EPA and Council as soon as practicable.

**Compliance with Condition**

**Yes** **No**

The original compliance with the submission and approval of the OEMP was detailed in the 2007/2008 AEMR.

In the reporting period, the OEMP was reviewed in updated as of September 2011 to reflect the extent of current operations and environmental management needs associated with these operations.

**6.4 (Noise)**

**Condition**

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

- a) a **Noise Management Plan** to outline measures to minimise the impacts from the operation of the cement works upgrade on local noise levels. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:
- b) identification of all major sources of noise that may be emitted as a result of the operation of the cement works upgrade;
- c) specification of the noise criteria as it applies to the particular activity;
- d) procedures for the monitoring of noise emissions from the cement works upgrade, in accordance with any requirements of the EPA;
- e) protocols for the minimisation of noise emissions;
- f) measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
- g) description of procedures to be undertaken if any non-compliance is detected.

**Compliance with Condition**

**Yes** **No**

The Berrima Works Noise Management Plan was updated in September 2011, and was available for review during the Tri-Annual Environmental Audit conducted by Somerset Risk Management.

The latest round of noise monitoring was conducted in June/July 2011, with the report issued in December 2011.

**6.4 (Air)**

**Condition**

an **Air Quality Management Plan** to outline measures to minimise and manage any impacts from the operation of the cement works upgrade on local air quality. The Plan shall address the requirements of the EPA, should there be any. The Plan shall include, but not necessarily be limited to:

- a) 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;
- b) monitoring of particulate and gaseous emissions from the cement works upgrade, in accordance with any





requirements of the EPA;

- c) procedures for the minimisation of particulate and gaseous emissions from the cement works upgrade, and the reduction of these emissions over time, where appropriate;
- d) protocols for regular maintenance of process equipment to minimise the potential for dust emissions;
- e) measures to consider and manage the cumulative impact of operating both kilns simultaneously; and
- f) description of procedures to be undertaken if any non-compliance is detected.

**Compliance with Condition**

Yes	No
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The Air Quality Management Plan was last updated in September 2011 and forms a part of Berrima's Environmental Management Plans.

Annual stack testing was conducted as per EPL 1698 and reported to the EPA in the Annual Return 2012. All monitoring results were within their respective emission limits.

**6.4 (Emergency)**

**Condition**

*an **Emergency Plan** for the cement works upgrade. The Plan shall be prepared in accordance with the Department's publication Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines. Should an Emergency Plan for the cement works already be in existence, this condition may be satisfied by updating the Plan to reflect changes to the site as a result of the cement works upgrade.*

**Compliance with Condition**

Yes	No
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The Emergency Plan was provided to DPI in September 2007.

The current Plan was under a review in the reporting period to reflect the changes introduced by the POELA Act 2011. Effective date for the implementation of these changes is September 2012 (next reporting period).

**6.4 (Safety)**

**Condition**

*a **Safety Management System**, covering all operations at the cement works upgrade and associated transport activities involving any hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be 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.*

**Compliance with Condition**

Yes	No
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Boral Cement Berrima previously operated an Integrated Health, Safety, Environment and Quality (HSEQ) system. Following the decision of Boral Group's Board, a single OHS Management System (called 1Boral) was developed in 2011, replacing previous separate OHS management practices in individual Boral Divisions.

The 1Boral OHS Management System incorporates standards which describe minimum requirements for core health and safety functions including Risk Management, Health and Safety Management System Assurance and Evaluation, Health and Safety Reporting, Accident and Incident Investigation, Safety Information Management System and Chain of



Responsibility functions.

This new OH&S Management System was rolled out in the reporting period, with the intensive training being undertaken in all Boral Companies.

## 6.4 (Water)

### Condition

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

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

### Compliance with Condition

Yes	No
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A Water Supply Strategy has previously been provided. The Water Management Plan was last reviewed and updated in September 2011.

Boral Cement Berrima continues to actively manage and increase the harvesting, storage and use of rainwater falling on the site (within the allowable limits). This has included:

- Reworking the quarry so that it has the capacity to operate as a water storage pond.
- 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; and
- Investigations into improving the ways by which water can be moved around the site to facilitate improved storage options.

These measures provide greater storage volume in Lake Quality and Lake Breed, which increases the volume of stormwater captured and retained on site during wet periods, and both decreases the volume/frequency of off-site discharges or stormwater, and the volume of water extracted from the Wingecarribee River. 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.

## 6.4 (Transport)

### Condition

*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:*

- a) details of any restriction to traffic routes;
- b) minimum requirements for vehicle maintenance to address noise and exhaust emissions;
- c) speed limits to be observed along routes to and from the sites and within the site; and
- d) behaviour requirements for vehicle drivers to and from the site and within the site.



**Compliance with Condition**

**Yes** **No**

A *Transport Code of Conduct* (including *Driver Code of Conduct*) was prepared by BCSC prior to the Kiln 6 construction works (July 2003). The *Transport Code of Conduct* addressed the management of traffic during the operation of Kiln 6, and specifically the requirements of the Development Consent conditions. It addressed both heavy and passenger vehicles. All employees and contractors were made aware that responsible driving is a condition of employment at the Berrima site.

The *Driver Code of Conduct for Passenger Vehicles and Utility Operators* and *Driver Code of Conduct for Truck and Heavy Vehicle Operators* were last updated in September 2011. Driver codes outline the driving behaviour expected of all 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 our Code of Conduct, incident reports would be prepared.

**6.5**

**Condition**

*Within three years of the commencement of operation of the cement works upgrade, and at least every three years thereafter, the Applicant shall undertake a formal review of the Operation Environmental Management Plan (OEMP) required under condition 6.3 of this consent. The review shall ensure that the OEMP is up-to-date and all changes to procedures and practices since the previous review have been fully incorporated into the OEMP. The Applicant shall notify the Director-General, 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.*

**Compliance with Condition**

**Yes** **No**

The review of the site Management Plans was postponed until 2011 to capture the actual site conditions after the major demolition of the site structures.

In this reporting period, Boral Cement Berrima completed a full review of the site Operational EMP and the associated specific EMPs (Water, Air, Noise, Waste, Dust and Traffic Management Plans).

The Tri-Annual Audit Report by Somerset Risk Assessment dated November 2011 stated that: *“Outcomes from this review have resulted in a robust documented system, which provides excellent tools for Staff and Contractors to effectively mitigate their environmental impacts.”*

**6.6**

**Condition**

*Prior to the use of Non-Standard Fuels under this consent, the Applicant shall update the Operation Environmental Management Plan required under conditions 6.3 and 6.4 of this consent to reflect any modifications required at the development in light of the use of Non-Standard Fuels. Where the Applicant considers that the Operation Environmental Management Plan does not require any amendment then a clear justification of this must be provided. The Applicant shall not receive or use Non-Standard Fuels at the development until the Director-General has approved the amended Operation Environmental Management Plan. Updating of the Plan shall include, but not necessarily be limited to*



*providing additional detailed measures to the Air Quality Management Plan to minimise the emissions of air pollutants (including toxic pollutants and dioxins) to ensure compliance with the process parameters specified in condition 3.24 of this consent and the air emissions limits specified in condition 3.10 of this consent.*

**Compliance with Condition**

**Yes** **No**

An Alternative Fuels Management Plan to document all requirements of the Consent and Licence relating to the quality control, receipt and use of alternative fuels was developed in 2008 and provided to both the DECC and DoP in the same year. It has not been revised since, as the Non-Standard Fuels program was not implemented. There were no Non Standard Fuels used during this reporting period.

**6.7**

**Condition**

*Prior to the receipt of Non-Standard Fuels at the development in accordance with this consent, the Applicant shall establish and implement quality control management procedures to ensure Non-Standard Fuels delivered to the development comply with the fuel specifications. The procedures shall, be forwarded to and meet the requirements of the Director-General, and shall, at the request of the Director-General, be updated to reflect the recommendations of the annual Non-Standard Fuels audit required under condition 4.7 of this consent. The procedures shall include:*

- a) assessment of the sampling and laboratory processes used by the Non-Standard Fuel suppliers with a view to ensure these processes are sufficient for the Applicant to meet the requirements of this consent;*
- b) carrying out of periodic, random parallel sampling of Non-Standard Fuels with analysis of substances to which limits have been applied in the fuel specifications; and*
- c) measures to ensure handling, processing and analysis of information provided by Non-Standard Fuel suppliers and that generated by the activities under b) is appropriately stored and managed.*

**Compliance with Condition**

**Yes** **No**

There were no Non Standard Fuels used or received during the 2011/12 reporting period. An Alternative Fuels Management Plan to document all requirements of the Consent and Licence relating to the quality control, receipt and use of alternative fuels was developed in 2008 and provided to both the DECC and DPI. Stringent quality control procedures for the supply and use of AKF1 were developed and detailed information on these improvements was provided to DPI in April 2008. However, the Non-Standard Fuels programme has not re-commenced to date.



<b>Environmental Reporting</b>			
<b>Incident Reporting</b>			
<b>7.1</b>			
<p><b>Condition</b></p> <p><i>The Applicant shall notify the EPA 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.</i></p> <p><b>Note:</b> Under condition 7.1 the Applicant must notify the EPA and the Director-General of the details of all technically unavoidable stoppages, disturbances, trips, or failures of the kiln or its pollution control or pollutant measurement equipment, during which the concentrations in the discharges of regulated substances into the air may have exceeded the prescribed emission limits.</p>			
<p><b>Compliance with Condition</b></p> <p>During this reporting period there were no incidents with actual or potential significant off-site impacts on people or the biophysical environment.</p> <p>A new Standard Operating Procedure for immediate “material harm” pollution incident notification to relevant authorities has been prepared and implemented at Boral Cement Berrima in March 2012 in accordance with the requirements of NSW’s Protection of the Environment Legislation Amendment Act 2011.</p>	<table border="1"> <tr> <td style="background-color: #4CAF50; color: white; padding: 5px;"><b>Yes</b></td> <td style="padding: 5px;"><b>No</b></td> </tr> </table>	<b>Yes</b>	<b>No</b>
<b>Yes</b>	<b>No</b>		
<p><b>Management Actions</b></p> <p>Boral Cement will notify all relevant government authorities by phone of any future incidents causing or threatening material harm immediately upon becoming aware of the pollution incident, followed by written notification within 7 days.</p>			

<b>7.2</b>			
<p><b>Condition</b></p> <p><i>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 7.1, within such period as the Director-General may agree.</i></p> <p><b>Note:</b> Condition 7.1 of this consent does not limit or preclude the EPA from requiring any action to address the cause or impact of any incident, in the context of the EPA’s statutory role in relation to the cement works upgrade.</p>			
<p><b>Compliance with Condition</b></p> <p>During this reporting period there were no incidents with actual or potential significant off-site impacts on people or the biophysical environment.</p>	<table border="1"> <tr> <td style="background-color: #4CAF50; color: white; padding: 5px;"><b>Yes</b></td> <td style="padding: 5px;"><b>No</b></td> </tr> </table>	<b>Yes</b>	<b>No</b>
<b>Yes</b>	<b>No</b>		



<b>7.2A</b>			
<b>Condition</b>			
<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>			
<b>Compliance with Condition</b>	<table border="1"> <tr> <td style="background-color: #4CAF50; color: white; padding: 2px;">Yes</td> <td style="padding: 2px;">No</td> </tr> </table>	Yes	No
Yes	No		
<p>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.</p> <p>As Non-Standard Fuels have not been used during this reporting period. Notification of incidents to NSW Health in accordance with this protocol has not been required.</p>			
<b>Management Action</b>			
An updated reporting protocol will be re-activated if the Non-Standard Fuels program recommences.			

<b>Annual Performance Reporting</b>	
<b>7.3</b>	
<b>Condition</b>	
<p><i>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 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:</i></p> <ul style="list-style-type: none"> <li><i>a) details of compliance with the conditions of this consent;</i></li> <li><i>b) 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></li> <li><i>c) a comparison of the environmental impacts and performance of the cement works upgrade against the environmental impacts and performance predicted in the SEE and the additional information listed under condition 1.2;</i></li> <li><i>d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person;</i></li> <li><i>e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the cement works upgrade have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;</i></li> <li><i>f) identification of trends in monitoring data over the life of the cement works upgrade to date;</i></li> <li><i>g) a list of variations obtained to approvals applicable to the cement works upgrade and to the site during the preceding twelve-month period; and</i></li> <li><i>h) environmental management targets and strategies for the following twelve-month period, taking into account identified trends in monitoring results.</i></li> </ul>	



### Compliance with Condition

Yes	No
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- a) Addressed throughout this AEMR.
- b) Please refer to Attachment No 7.
- c) Please refer to Attachment No 8.
- d) Please refer to Attachments No 2, 3, 4, 6a, 6b, 6c and 6d.
- e) Please refer to Attachment No 5.
- f) Trend analysis for dust deposition data is provided in Attachment No 2. Trend analysis of stack test data on NO<sub>x</sub> and Solid Particles is provided in Attachment No 3a. Trend analysis of stack test data on Cadmium, Mercury and Hazardous Substances is provided in Attachment No 3b. Water quality data are presented in Attachment No 6a, 6b, 6c and 6d. The following conclusions were drawn:
  - Dust deposition data indicate that compliance with the 12-month rolling average guideline was affected in the first half of the year by the dust storms in spring 2009. All gauges but Dust Gauge No 7 were in compliance with the guideline from December 2010. Dust Gauge 7 is located within the site, and showed contamination by bird droppings during the time of its exceedances. Since February 2012, the monthly results have been consistently below the guideline.
  - Annual stack test monitoring demonstrates that NO<sub>x</sub> and TSP emissions continue to be below or on the emission limit since the Kiln 6 Upgrade was completed in 2004.
  - Annual stack test monitoring data also demonstrates that emissions of Cadmium, Mercury and Hazardous Substances continue to be well below the specified emission limits;
  - Water quality data establishes that water discharged from site has an alkaline pH and carries low levels of total suspended solids and metals. Oil & grease remains under detection levels. These data are consistent with those used in the SEE to conclude that impacts on the Wingecarribee River would be negligible.
- g) The site received one Notice of Determination for Modification 7 on 16 April 2012. The following conditions were modified and/or added, and have been included in this report:
  - 1.2; n) and o) was added.
  - 3.17A was modified.
  - 3.17AB, 3.17AC, 3.17AD and 3.17 AE was added.
  - 4.3 was modified.
  - 4.3A was added.
- h) The primary environmental management targets & /strategies for the following reporting period are:
  - To continue to work towards maintaining full compliance with the Consent;
  - To further minimise the fugitive dust emissions generated during formation of, and outloading from, temporary clinker stockpiles, unsealed roads and vehicle movements;
  - To further reduce noise emissions by implementing noise attenuators, such as fan silencers where technically and economically feasible.
  - To continue harmonising the EPL and Consent so that they are compatible with the operational capabilities of the Berrima Works and,
  - To continue implementing processes and procedures to track operational and environmental trends.



**Management Actions**

Boral Cement Berrima will strive to implement the environmental management objectives and strategies detailed above.

**7.3A**

**Condition**

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

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

**Compliance with Condition**

NA	Yes	No
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As the Non-Standard Fuels program has not yet been properly implemented, the First Year Monitoring and Modelling Assessment Report has not been submitted and consequently this condition is not yet in force.

**7.4**

**Condition**

*The Applicant shall submit a copy of the AEMR to the Director-General, the EPA and Council every year, with*

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

**Compliance with Condition**

Yes	No
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The Annual Return for the EPL 1698 for the period of 1 May 2011 to 30 April 2012 was due by 30 June 2012 and was submitted to EPA on 15 June 2012.

This AEMR relates to the annual reporting period from 1 May 2011 to 30 April 2012 and is being submitted by 30 June 2012, concurrently with the EPA Return.





**7.5**

**Condition**

*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 EPA and/or Council. Any action required to be undertaken shall be completed within such period as the Director-General may agree.*

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

**Compliance with Condition**

Yes	No
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Boral Cement Berrima will address any actions required by the Director General after review of the AEMR. There were no requests during this reporting period in relation to earlier submissions.

**Non-Standard Fuels First-Year Assessment Report**

**7.6**

**Condition**

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

- a) detail the nature, quantity and quality of Non-Standard Fuels used at the development;*
- b) assess the results of the Continuous Emissions Monitoring, the Ambient Air Quality Monitoring Program and the Process Monitoring requirements under conditions 4.1, 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;*
- c) assess the results of the Non-Standard Fuels Tracking Program including detailed description and assessment of any trends identified through the Program;*
- d) assess the adequacy of the Non-Standard Fuels Quality Control Management Procedures required under condition 6.7; and*
- e) based on this assessment, review the necessity for continuing or modifying any of the emissions monitoring, reporting or pollutant tracking requirements of this consent.*

**Compliance with Condition**

NA	Yes	No
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On 31 January 2008 DoP suspended this Condition until such time as the Non-Standard Fuels program is reinstated. The program has not yet been reinstated.

Boral Cement Berrima has not used Non-Standard Fuels during this licensing period.

Boral Cement Berrima will prepare a First Year Monitoring and Modelling Assessment Report within 15 months of recommencement of the use of Non-Standard Fuels, in accordance with this condition.



**End of Conditions**

**List of Attachments:**

Attachment 1: Berrima Works Dust Deposition Gauges

Attachment 2: Dust Deposition Data

Attachment 3: Kiln 6 Stack Emissions

Attachment 4: Stack Testing Report June 2011

Attachment 5: Kiln 6 Opacity Excursions

Attachment 6: Lake Quality Overflow Events

Attachment 7: Community Complaints

Attachment 8: Statement of Environmental Effects