



## Application for licence amendment

### Part V Division 3 of the *Environmental Protection Act 1986*

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**Licence Number** L4533/1967/15

**Applicant** Cockburn Cement Limited

**ACN** 008 673 470

**File Number** DER2015/000597-3

**Premises** Cockburn Cement Limited Munster  
Being Lot 450 on Plan 249735 Rockingham Rd,  
Lot 50 on Diagram 6065, Lot 88 on Plan 22127, Lot 246 on  
Plan 226117, Lot 5 and Lot 4 on Diagram 18525 and Lot 311  
on Plan 300770 Russell Road, MUNSTER 6166

**Date of Report** 16 December 2024

**Proposed Decision** Licence granted

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## 1. Decision summary

This Amendment Report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the proposed alternative shell sand feed location at Cockburn Cement Limited (CCL) Munster (the premises). As a result of this assessment, an amendment to licence L4533/1967/15 (L4533) has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (DWER, the department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at <https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/dwer-regulatory-documents>.

### 2.2 Premises and application background and context

CCL operates a lime manufacturing plant (category 43: Cement or lime manufacturing) on Russell Road in Munster. The premises has two lime kilns and is authorised to operate under Part V of the *Environmental Protection Act 1986* (EP Act) by licence L4533. In March 2024, the licence was amended to extend the expiry date to 30 March 2025. An appeal was lodged in relation to the licence extension. The appeal was dismissed by the Minister for Environment on 7 November 2024.

A detailed overview of the premises, including the lime manufacturing process used by CCL is provided in the 2016 decision report for licence L4533/1967/15 published online at <https://www.der.wa.gov.au/our-work/licences-and-works-approvals/current-licences>.

DWER has received ongoing complaints from the community regarding odours and dust in the Cockburn area for several years. Past investigations by CCL and DWER have identified that the preheating of shell sand is the cause of odour emissions impacting offsite on the community.

Works approval W6533/2021/1 (W6533) was granted under section 54 of the *Environmental Protection Act 1986* (EP Act) in August 2021 and authorised CCL to establish shell sand feed diversion in its Kiln 6 pre-heater tower, and trial the use of the shell sand feed diversion. Feed diversion is where the feed location of shell sand is changed to a lower stage in the preheater where the temperature is higher, for a theoretical reduction of odour emissions from Kiln 6. CCL's basis for the use of shell sand feed diversion to reduce odour emissions was that higher temperatures at the proposed feed location will result in thermal oxidation of volatile odorous compounds from preheating of shell sand to achieve reduced community odour impacts.

Feed diversion trials were undertaken over a total of 25.3 days in the summer of 2022-2023 and the works approval expired in May 2023. In accordance with the requirements of W6533, CCL submitted an Environmental Commissioning Report (ECR, ADBRI 2023) to DWER on the results of the trials.

CCL's ECR concluded shell sand feed diversion is capable of achieving a reduction in odour emissions. However, in DWER's view there were limitations in the presented monitoring data and the efficacy of feed diversion for reducing odour had not been scientifically demonstrated.

DWER and CCL engaged in a series of technical discussions on DWER's ECR feedback through the early part of 2024 and potential next steps for further investigating feed diversion. Those discussions culminated in CCL undertaking further non-feed diversion monitoring investigations, proposing further feed diversion trials to improve its monitoring data set and putting forward a broader odour strategy further discussed in section 2.3 below.

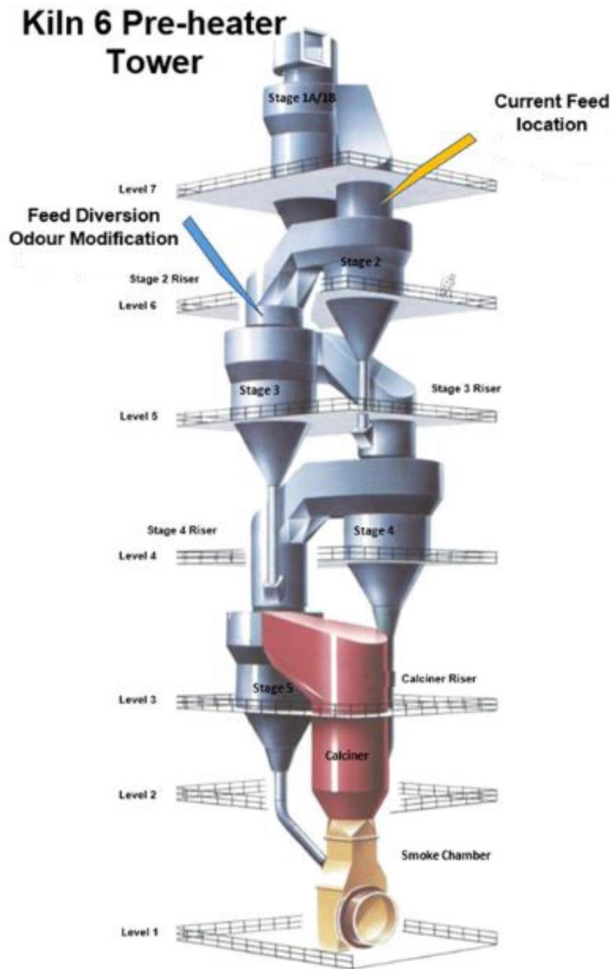
## 2.3 Amendment application summary

On 6 August 2024 Cockburn Cement Limited (CCL; the licensee) submitted an application for a licence amendment under section 59 and 59B of the EP Act. The following amendments are being sought:

1. Removal of conditions relating to kiln 3 and 4 from the licence as these kilns have been decommissioned and removed from site as show in Figure 1 below.
2. Authorisation for a further period of trial operation of shell sand feed diversion infrastructure that was previously constructed and trialled under works approval W6533. The location of the feed diversion is shown in Figure 2 below.
3. Extension of the licence duration by 12 months, with a new proposed expiry date of 30 March 2026, to provide time to verify the effectiveness of feed diversion for odour reduction and to complete additional studies required to finalise an odour reduction strategy for the premises. CCL provided further information in the application on its odour reduction strategy to support this request.



**Figure 1: Kiln 3 and 4 before and after demolition**



**Figure 2: Kiln 6 preheater tower showing the location of the feed diversion**

### 2.3.1 Further feed diversion trials

In relation to item 2, the application seeks authorisation for the temporary operation of shell sand feed diversion (also referred to as the feed diversion trial) over the summer of 2024/2025 to allow for sufficient monitoring data to be collected. CCL intends to use this monitoring to further scientifically analyse and demonstrate the effectiveness of the shell sand feed diversion in reducing odour emissions and impacts. The proposed monitoring includes stack tests under different operating scenarios and ambient odour surveys. CCL proposes to operate the feed diversion with Kiln 5 off to eliminate this as a variable when conducting the odour surveys. This is intended to ensure that any reduction to the odour concentrations in the kiln stack can be verified as odour impact reductions by on ground odour monitoring in the community.

The application proposes that the feed diversion trial will be operated when the wind direction is between greater than 90 degrees and less than 250 degrees (easterly around to west south west) which has historically shown to result in odour impacts on the community from the west around to the east north east of the kilns including the dense residential areas north of the premises. In response to reviewing the draft amended licence and amendment report CCL has advised they believe that operating the shell sand feed diversion continuously during all conditions will provide better data for statistical analysis.

An Odour Sampling and Data Management Plan (Katestone 2024) was submitted by CCL outlining the proposed monitoring program and how monitoring data collected during the operation of the shell sand feed diversion will be collected and analysed. The plan outlines four

operational scenarios that monitoring will take place under as summarised below.

- Scenario 1: Normal operation
- Scenario 2: Operation with feed diversion with a reduced shell sand feed rate
- Scenario 3: Normal operation with a reduced feed rate equivalent to the feed rate for Scenario 2
- Scenario 4: Hybrid operation with shell sand feed through both the feed diversion location and the normal feed location

### 2.3.2 Licence extension and odour reduction strategy

In relation to item 3, CCL provided further application information on its broader odour reduction strategy, including timelines, in support of its request for a 12-month licence extension. Feed diversion is one element of this strategy. The key elements of the strategy include:

- research into alternate odour reduction options, to inform an odour options assessment report to be completed following the results of the feed diversion operation over the summer of 2024–25. The application states CCL is planning to submit a report on the alternative options in June 2025;
- a site improvement strategy which is currently underway, including the phasing out of the use of coal by the end of 2024 and moving cement manufacturing to the CCL Kwinana facility when expansion works at the facility are complete. In response to the draft amended licence and amendment report CCL have advised the coal stockpile will not be used by the end of 2024 and will aim to use the remaining coal following the completion of shell sand feed diversion trials;
- placement of kiln 5 into care and maintenance. CCL advised that Kiln 5 has been in operations for a total of 8.5 days from May 2024 to December 2024;
- a lime strategy investigating options for the decommissioning of kiln 5, a significant source of odour. The strategy includes a kiln optimisation study and an import lime study and is due for completion by July 2025;
- community and stakeholder engagement strategy including community forums and creating a better complaints and feedback process; and
- completion of a premises odour reduction strategy for presentation to the department and the community to be completed by November 2025.

## 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

### 3.1 Source-pathways and receptors

#### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during the proposed use of the shell sand feed diversion which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

**Table 1: Proposed licence holder controls**

| Emission   | Sources                 | Potential pathways    | Proposed controls   |
|--|-------------------------|-----------------------|---|
| Operation of shell sand feed diversion   |                         |                       |   |
| Odour  | Kiln 6 – Feed diversion | Air/windborne pathway | <p>Relevant stack emission, process condition and ambient odour monitoring and analysis of the results to determine if there are any changes to the odour emissions or impacts beyond the premises boundary during shell sand feed diversion operation.</p> <p>Stack tests and analysis for odour to be conducted by a holder of NATA accreditation for the sampling and/or analysis method</p> <p>CCL propose to use the feed diversion during periods when meteorological conditions (winds from west south west through to easterly) have historically shown to result in odour impacts within the community.</p> <p>During feed diversion, shell sand feed rates are proposed to be lower by approximately 20% resulting in the potential for less odour to be produced and the stack exhaust gas exit temperature is higher resulting in the gas having more buoyancy and a higher potential for dilution.</p> <p>The previous trials of feed diversion have shown that it may reduce odour to some degree. Adding the shell sand to the pre-heater tower at a lower level of the tower exposes the shell sand to a higher temperature with the theory being that odourous compounds being released from the shell sand are destroyed by the higher temperature.</p> <p>The operation of the feed diversion is to be conducted for a limited duration until the end of April 2025.</p> |
| Air emissions not related to odour<br>(NO <sub>x</sub> , SO <sub>x</sub> , CO) |                         |                       | <p>Stack emission and CEMS monitoring aligned with the requirements of works approval W6533, to ensure air emissions are consistent with or lower than air emissions under the normal operation (non-feed diversion).</p> <p>Stack tests and analysis to be conducted by a holder of NATA accreditation for the sampling and/or analysis method.</p> <p>Air emission results from each stage of the trial will be analysed.</p>   |

### 3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the applicant from the assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

**Table 2: Sensitive human and environmental receptors and distance from prescribed activity**

| Land Use/Zoning  | Direction from plant  | Population   |
|--|---|--|
| Mixed use: market gardens, nursery, residential and commercial<br>Zoned rural                  | Immediately adjacent along the extent of the eastern premises boundary, extending south approximately 600-800m from kiln stacks and processing area             | Workers at 7-10 commercial properties and less than 10 residential dwellings. Note some commercial properties are also residential   |
| Recreation and education/training facilities<br>Zoned special use                              | Immediately adjacent west of the premises boundary and 730m west of the processing area   | Transient receptors depending on people utilising recreational area and attending education/training facilities. Exposure at these locations is likely short term but variable   |
| Residential<br>Zoned rural living and development  | Immediately north-west of the premises boundary and approximately 800-900m north-west of the processing area  | Encompasses residential areas of varying density. 50+ receptors  |
| Residential, recreation and primary school.<br>Zoned rural living, residential and development | Immediately adjacent north of premises boundary and approximately 550m north of processing area. Primary school is approximately 1.4km north of processing area | Encompasses residential areas of varying density. 100+ residential receptors. Primary school and recreation area has transient receptors depending on people utilising recreational area and children attending school |
| Residential.<br>Zoned development  | Approximately 670m north of premises boundary and 1.5km north-north east of processing area   | Area is transitioning into a residential area. A number of subdivisions are underway. 50+ current residential receptors  |
| Residential and recreation<br>Zoned residential and development                                | Approximately 410m north-east of premises boundary and 1.3km north-east of processing area  | Large residential area which encompasses Meve` estate. 100+ receptors  |
| Residential<br>Zoned residential   | Approximately 1.2km north-east of premises boundary and 2.3km north-east of processing area   | Large residential area which encompasses Meve` estate. 100+ receptors  |
| Residential<br>Zoned rural   | Approximately 630m east-south-east of premises boundary and 1.1 km east-south-east of processing area   | Rural residential area. 30+ receptors  |





**Figure 3: Distance to residential receptors**

### 3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Licence L4533 that accompanies this Amendment Report authorises the operation of the shell sand feed diversion infrastructure to be trialed for the purpose of reducing odour. The conditions in the amended licence, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

**Table 3: Risk assessment of potential emissions and discharges from the Premises during feed diversion**

| Risk Event                             |                           |   |   |                      | Risk rating <sup>1</sup><br>C = consequence<br>L = likelihood | Applicant controls sufficient? | Conditions <sup>2</sup> of works approval   | Reasoning and justification for regulatory controls  |
|--|---------------------------|---|---|----------------------|---|--------------------------------|---|--|
| Source/Activities                      | Potential emission        | Potential pathways and impact   | Receptors   | Applicant controls   |   |                                |   |  |
| <b>Operation of Feed Diversion</b>     |                           |   |   |                      |   |                                |   |  |
| Operation of shell sand feed diversion | Increased odour emissions | Air/windborne pathway causing wide scale increased odour emission impacts on receptor amenity | Nearest residential area 800m north of the Kiln stacks. Odour impacts have been verified several kilometers downwind from the premises. | Refer to Section 4.1 | C = Minor<br>L = Unlikely<br><b>Medium Risk</b>               | N                              | <p>Condition 48 authorises the use of the feed diversion. This will allow CCL to operate the feed diversion in weather conditions that have historically shown to cause odour impacts.</p> <p><b>Condition 49 requires the Licensee to report each week when the feed diversion has been in operation to allow the Department to compare the operation to any potential complaint data</b></p> <p>Condition 50: requires air emission parameters to be monitored and ambient odour surveys to be conducted. The monitoring will ensure any changes to emissions will be identified including any change to odour emissions</p> <p>Condition 51: requires point source air emissions (stack testing) and analysis to be conducted by holder of NATA accreditation for the relevant sampling and analysis to ensure the sampling and analysis are conducted to an appropriate standard.</p> <p>Condition 52: requires the Licensee to monitor process parameters to ensure process parameters are similar when comparing air emission monitoring.</p> <p>Condition 53: requires the licensee to submit a Feed Diversion Monitoring Report so that the results of the feed diversion can be assessed.</p> <p><b>Condition 54: Outlines the requirements of the Feed Diversion Monitoring Report required by condition 53</b></p> | <p>CCL has proposed to further trial operation with shell sand feed diversion as it considers that feeding shell sand into a stage in the pre-heater tower that operates at a higher temperature will result in destruction of odorous compounds that investigations have shown are released during heating of the shell sand.</p> <p>CCL is proposing to operate the shell sand feed diversion during the summer period when meteorological conditions that direct kiln exhaust gas towards dense residential areas and have historically shown to result in odour impacts within the community occur in an attempt to reduce odour impacts during these meteorological conditions.</p> <p>CCL is proposing to conduct comprehensive monitoring of the shell sand feed diversion to confirm the effectiveness of the method in reducing odour emissions and impacts with the results to inform the broader odour reduction strategy</p> <p>The Delegated Officer determined the proposed operation of shell sand feed diversion is unlikely to cause wide scale increased odour impacts and will enable further monitoring and analysis of its effectiveness as an odour reduction strategy to be undertaken.</p> <p>In making this assessment the Delegated Officer took into account the following:</p> <ul style="list-style-type: none"> <li>- The initial risk assessment for the trial operation of feed diversion recorded in the decision report for works approval W6533 (see Schedule 1) concluded that the operation of feed diversion was unlikely to increase odour impacts within the community. There was no tangible evidence resulting from the initial feed diversion trials that this assessment was incorrect.</li> <li>- The Environmental Commissioning Report submitted following the commissioning and trial operation of the feed diversion conducted under works approval W6533.</li> <li>- Analysis of the department's odour complaints data recorded during the period of initial trials of the shell sand feed diversion (undertaken for W6533) which didn't identify a correlation between feed diversion trials and increased odour complaints.</li> <li>- While CCL has stated that the feed diversion will be used in high risk odour impact meteorological conditions to try to reduce impacts, that Kiln 5 will remain offline while the feed diversion trials are undertaken and that feed diversion on Kiln 6 will occur while it is fired by natural gas only as a fuel, the Delegated Officer has not restricted when the feed diversion can be used as obligation lies with CCL to manage variables appropriately in order to demonstrate it is able to use the feed diversion to effectively reduce odour impacts.</li> <li>- The Odour Sampling and Data Management Plan (Katestone 2024) submitted by CCL that details how monitoring data will be collected and analysed, with stack tests for odour sampling and analysis to be conducted by a holder of NATA accreditation.</li> <li>- CCL proposes to submit a report to the department following the completion of the feed diversion trial which will present the collected monitoring data and analysis of the data together with conclusions regarding its effectiveness in reducing odour impacts which will inform the broader odour reduction strategy for the premises.</li> <li>- Amendments to the licence are for a temporary period of further trials. The further operation and ongoing use of feed diversion will be dependent on further scientific analysis by CCL and a future application. Further scientific analysis of feed diversion by CCL using new trial data will inform its consideration of its approach to odour reduction through its broader odour reduction strategy.</li> </ul> <p>The Delegated Officer considered it necessary to include a requirement in the licence to submit a</p> |

| Risk Event        |  |  |   |                    | Risk rating <sup>1</sup><br>C = consequence<br>L = likelihood | Applicant controls sufficient? | Conditions <sup>2</sup> of works approval  | Reasoning and justification for regulatory controls |
|-------------------|--|--|---|--------------------|---|--------------------------------|--|---|
| Source/Activities | Potential emission   | Potential pathways and impact  | Receptors   | Applicant controls |   |                                |  |   |
|                   |  |  |   |                    |   |                                | <p>weekly report on feed diversion operations so that DWER is provided regular updates on the operation of feed diversion for analysis against complaints data to confirm whether any correlations occur.</p> <p>In addition, the Delegated Officer has also specified the requirements of the Feed Diversion Monitoring Report to ensure all necessary information required to assess the effectiveness of feed diversion is collected and presented in a manner which the department can use to assess the effectiveness of feed diversion as an odour control.</p>  |   |
|                   | Air emissions not related to odour<br>(NO <sub>x</sub> , SO <sub>x</sub> , CO) | Air/windborne pathway causing wide scale impacts on receptor health or amenity | Nearest residential area 800m north of the Kiln stacks. |                    | C = Minor<br>L = Unlikely<br><b>Medium Risk</b>               | Y                              | <p>Condition 50: requires air emission parameters to be monitored. The monitoring will ensure any changes to emissions will be identified including during the use of the feed diversion.</p> <p>Operation of the feed diversion does not change the lime manufacturing process other than feed rates, feed location and temperatures of the kiln exhaust gases.</p> <p>DWER has reviewed the ECR and supporting data from the 2022/2023 trial feed diversion operations and is of the view that the operation of the feed diversion does not change the risk profile of the emissions to air from kiln 6.</p> |   |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.—

## 4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

**Table 4: Consultation**

| Consultation method  | Comments received  | Department response   |
|--|--|---|
| Application advertised on the department's website and letters sent to Stakeholders on 30/9/2024 | The department received 30 submissions relating to the application. A summary of the comments received is included in Appendix 1   | Refer to Appendix 1   |
| Local Government Authority advised of proposal by email on 30/9/2024                             | No comments received   | NA  |
| David Scaife – MLA Member for Cockburn advised of proposal by email on 30/9/2024:                | <p>As both the Member for Cockburn and a Beeliar resident, my position on CCL's Munster facility is well-known: CCL should close the facility and move its lime manufacturing operations to Kwinana without delay.</p> <p>CCL's Munster operations have caused odour and dust issues in Beeliar, Yangebup, Lake Coogee and Munster for decades.</p> <p>As you are aware, in 2022, the Magistrates Court of Western Australia convicted CCL of six offence of emitting unreasonable emissions from its Munster facility: <i>Cockburn Cement Ltd v Cowie</i> [2023] WASC 343. It is beyond time for CCL to either move or clean up its act.</p> <p>If the department approves CCL's application, I ask that the highest level of scrutiny be applied to its feed diversion trials.</p> | The comments were considered in undertaking the assessment of the application and, as outlined in section 5, the amendment is considered an appropriate approach to finalising an odour reduction strategy for the premises. Further comments relating to odour and dust concerns are included in Appendix 1. |
| CCL was provided with draft documents on 29 November 2023  | CCL provided comments on the draft Licence and amendment report on 5 December 2024   | Refer to Appendix 2   |

## 5. Decision

### 5.1 Removal of Kiln 3 and 4

Kiln 3 and 4 have been decommissioned and demolished as such conditions relating to kilns 3 and 4 are no longer relevant to the premises operation and have been removed from the licence. Conditions 4 and 6 have been deleted as they only relate to kilns 3 and 4 and conditions 3, 13 and 21 and Schedules 1, 3 and 8 of the licence have been amended to remove references to kilns 3 and 4. The Delegated Officer considers this to be an administrative change to the licence as infrastructure has been decommissioned and redundant conditions have been removed from the licence as a consequence.

### 5.2 Operation of Feed diversion

Investigations by CCL and DWER to date have identified that the preheating of shell sand is the cause of odour emissions that result in impacts on the community. CCL has proposed further trials through the operation of shell sand feed diversion over the summer of 2024/2025, for the purpose of collecting sufficient monitoring data to be analysed to determine the effectiveness of the shell sand feed diversion as an odour reduction option.

The Delegated Officer agrees that based on CCL's ECR for the initial trials over the 2022/23 period, the acquisition of further monitoring data and feed diversion studies is important for CCL to further scientifically analyse the efficacy of feed diversion as a permanent odour reduction option.

The Delegated Officer has determined to grant an amended licence to authorise the use of the shell sand feed diversion until the end of April 2025. The amended licence requires CCL to undertake specific monitoring and submit a report to the department detailing the monitoring and analysis of the results. The amendment will provide CCL the opportunity to collect and analyse the necessary monitoring data to assess the effectiveness of the feed diversion as a long term odour reduction strategy.

In determining to grant the licence amendment for the operation of the feed diversion, the Delegated Officer took into account the following:

- the operation of further feed diversion trials has been assessed as unlikely to increase the risk of offsite odour impacts;
- CCL has committed to conducting a comprehensive and robust verification monitoring program to assess the efficacy of the project in reducing odour impacts over a longer period (summer 2024/2025), including monitoring results that can be readily compared to previous investigation results and to alternative odour reduction technologies. Monitoring includes:
  - Continuous Emission Monitoring System (CEMS) monitoring of stack exhaust gases for combustion gases (NO<sub>x</sub>, SO<sub>x</sub> and CO) and total reduced sulfur (TRS).
  - Periodic stack tests for each scenario outlined in section 2.3 above for combustion gases (NO<sub>x</sub>, SO<sub>x</sub> and CO), TRS, volatile organic compounds (VOCs), total organic compounds, aldehydes and ketones, hydrogen sulfide (H<sub>2</sub>S), Carbonyl sulfide (COS), Thiophene (C<sub>4</sub>H<sub>4</sub>S) and odour concentration and emission rate.
  - Ambient odour field surveys; and
  - Process parameter monitoring including preheater tower temperature profile, shell sand feed rate, shell sand moisture content and shell sand composition.
- The outcomes of the feed diversion trial will inform the broader odour reduction strategy for the premises which will be finalised in 2025, following the trial.

### 5.3 Licence Extension

Section 63 of the EP Act prescribes that a licence shall continue in force for such period as is specified in the licence. Licence L4533 was due to expire on 30 March 2025. The Delegated Officer determined to amend licence L4533 in accordance with section 59(1) of the EP Act by extending the expiry date from 30 March 2025 to 30 March 2026.

The decision to amend the licence to extend its duration by twelve months takes into account that CCL and DWER are actively engaging on an odour strategy for odour emissions from the premises. This includes the actions proposed to be undertaken by CCL outlined in section 2.2 that were considered in this assessment.

CCL has provided the outline of an odour strategy and timeframes of further investigations and work being undertaken to complete an odour reduction strategy for the premises. This includes:

- Investigating alternative odour reduction options; and
- A lime strategy that includes kiln 5 potentially being decommissioned and/or installation of alternate lime options.

The odour strategy states that the results from the shell sand feed diversion monitoring will be compared to the alternative odour controls in terms of odour reduction, timeliness of implementation, operation cost and environmental considerations.

CCL has also progressed towards making other site improvements including discontinuing the use of coal and moving cement production to the Kwinana facility.

Based on the timeframes provided in the application the Delegated Officer determined it appropriate to amend the licence duration to provide CCL time to complete odour reduction investigations and analysis of odour management measures to develop an effective odour reduction plan. To ensure these actions and the completion of the comprehensive odour reduction plan is progressed in a timely manner, and there is sufficient time for assessment of the plan prior to the revised licence expiry in March 2026 the Delegated Officer determined to include conditions in the amended licence requiring:

- Submission of an odour reduction plan by 31 July 2025 which includes details of the odour reduction actions and activities that have been investigated, outlines the proposed actions or activities that will be implemented together with timeframes for implementation, and the level of odour reduction predicted to be achieved from these activities and actions together with supporting evidence.
- Publishing of the odour reduction plan on the CCL website by 31 August 2025.

The Delegated Officer determined the publishing of the odour reduction plan is necessary to ensure transparency for the community relating to CCL's proposed odour reduction plans.

A twelve month extension of the licence allows for the lawful operation of the premises and the completion of odour reduction investigations and analysis of options. The Delegated Officer notes this may include further amendments to the licence. The extension will also allow time for DWER to review and provide CCL feedback on the Feed Diversion Monitoring Report and the Odour Reduction Plan that are required to be submitted by 30 June 2025 and 31 July 2025 respectfully.

Notwithstanding the above, the Delegated Officer also considered that:

- an extension to the licence duration will not change the current risk profile of the premises, or change the risks posed by ongoing emissions from the premises;
- the licence continues to specify requirements related to odour emissions and discharges, including odour, that will continue in accordance with existing conditions;
- the premises will be subject to ongoing compliance inspections and investigations

following incidents and complaints, in accordance with the EP Act;

- in the event that risk issues arise in relation to the premises, the CEO may
  - a) amend the licence conditions at any point, and
  - b) in the event of an alleged offence, exercise enforcement powers under the provisions of the EP Act.
- DWER will continue to investigate reports of odour in the local community and, where appropriate, take further action to address any ongoing unreasonable odour impacts.

## 6. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that an amendment to the licence will be granted. Table 5 lists the conditions that have been added, removed or altered as part of this licence amendment.

**Table 5: Conditions that have been added removed or altered by this amendment**

| Condition No.   | Details  |
|---|--|
| <b>Kiln 3 and 4</b>                                     |  |
| 3   | Removed references to Kiln 3 and 4   |
| 4   | Condition deleted as related to kiln 3 and 4   |
| 6   | Condition deleted as related to kiln 3 and 4   |
| 13  | Removed reference to Table 9 as this relates to Kiln 3 and 4   |
| 21  | Removed reference to kiln 3 and 4  |
| Schedule 1 - Premises Plan D                            | Removed kiln 3 and 4 from map  |
| Schedule 3 – Table 9, Table 11 and Table 12             | Table 9 deleted as related to kiln 3 and 4<br>Table 11 and 12 amended to remove reference to kilns 3 and 4   |
| Schedule 8  | Schedule 8 amended to remove references to kiln 3 and 4 discharge points   |
| <b>Licence extension</b>                                |  |
| NA  | Licence expiry date extended from 30 March 2025 to 30 March 2026   |
| 46  | Condition added to require the submission of an odour reduction plan by 31 July 2025   |
| 47  | Condition added to require the Odour reduction plan to be digitally published by the Licensee  |
| <b>Feed Diversion – Conditions added to the licence</b> |  |
| 48  | Condition added to authorises the use of the feed diversion. This will allow CCL to operate the feed diversion until 30 April 2025.  |
| 49  | Condition added to require the Licensee to report each week when the feed diversion has been in operation to allow the Department to compare the operation to any potential complaint data |
| 50  | Condition added to require air emission parameters to be monitored and ambient odour   |

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|    | surveys to be conducted. The monitoring will ensure any changes to emissions will be identified including any change to odour emissions   |
| 51 | Condition added to require point source air emissions (stack testing) and analysis to be conducted by holder of NATA accreditation for the relevant sampling and analysis to ensure the sampling and analysis are conducted to an appropriate standard. |
| 52 | Condition added to require the Licensee to monitor process parameters to ensure process parameters are similar when comparing air emission monitoring.  |
| 53 | Condition added to require the licensee to submit a Feed Diversion Monitoring Report so that the results of the feed diversion can be assessed.   |
| 54 | Condition added that outlines the requirements of the Feed Diversion Monitoring Report required by condition 53   |



## References

1. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
2. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
3. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. DER 2016, *Guideline: Continuous Emission Monitoring System (CEMS) Code for Stationary Sources Air Emissions*, Perth, Western Australia
5. Cockburn Cement Limited 2024, Application for Licence amendment (L4533) and supporting documentation and Environmental Commissioning Plan (DWER Reference A2301034).
6. Katestone 2024, *Odour sampling and data management plan – Prepared for Cockburn Cement Ltd*
7. ADBRI 2023, *Munster Works Approval W6533/2021/1 – Environmental Commissioning Report* (DWER Ref A2179534)
8. DWER 2021, Decision Report Application for Works Approval W6533/2021/1 (DWER Ref A2036819)
9. Cockburn Cement 2020, *Odour Survey Plan – Cockburn Cement Limited*, Perth, Western Australia.

## Schedule 1: Decision Report for Works Approval W6533/2021/1

## Appendix 1: Summary of stakeholder’s comments on the application

| Summary of comments relating to odour emissions  | DWER response   |
|--|---|
| <p>100% of the 30 respondents provided comments relating to odour emissions from the premises. Impacts reported relating to odour are similar across all respondents, with a compromised ability to enjoy outdoor spaces, either at their homes, or in nearby parks. The submissions also indicated this amenity impact is also impinging on the use and enjoyment of indoor spaces, as odour and dust emission impacts can result in doors and windows needing to remain closed, leading to stuffy and hot interiors of homes.</p> <p>Some of the common impacts reported in the submissions included:</p> <ul style="list-style-type: none"> <li>• Concern the odour is getting worse.</li> <li>• Odour is impacting daily life activities and family as all outdoor activities have to stop when the odour is present. Respondents reporting being unable to go for a walk, have breakfast at any local cafes or take kids to the park. Some reported feeling like a prisoner in their own home.</li> <li>• Inability to hold events such as family bbq or get together due to the fear the smell will be present. If gatherings are held outdoors, many are abandoned and this is considered to be totally unacceptable and detracts significantly on quality of life.</li> <li>• In summer months, the odour is reported to be worst. Wind conditions can affect the impacts experienced by those in the community.</li> <li>• The impact of odour emissions is affecting local businesses and reduced people attending these businesses due to the smell.</li> <li>• The smell is so pervasive that it often extends as far as Cockburn Gateways Mall, which is several kilometers from the facility.</li> <li>• Smell hangs around on clothes that have dried outside. Reports of being unable to hang washing and use dryers due to pervasive smell and dust.</li> <li>• Reports of excessive use of air conditioning units due to houses being enclosed all the time as they are unable to open doors or windows due to the odour</li> <li>• Reports of physical health impacts including throat swelling when the smell is present, a burning sensation in throat, eyes and nose, coughing fits, sneezing and headaches in adults</li> </ul> | <p>The department acknowledges the respondent’s concerns with regard to odour emissions from the premises and the associated impacts on the community. The department is actively engaging with CCL in relation to its odour reduction strategy and considers that the amendment supports next steps in CCL implementing its odour reduction strategy. The amendment authorises further feed diversion trials with a comprehensive monitoring program and reporting. There are new conditions for the submission of an updated odour reduction plan which CCL will be required to publish on its website, increasing public transparency. The feed diversion trials and outcomes will inform CCL’s decisions on broader odour reduction initiatives in 2025.</p> <p>To date under the current version of the odour strategy summarised by CCL in its application, Kiln 5 has already been placed into care and maintenance with an expected decision on its permanent shutdown expected in 2025 as a result of investigations and initiatives under the odour strategy, including the outcomes of further feed diversion trials.</p> <p>As a result of this amendment, the department is updating its community updates page ‘Cockburn Air Quality’ and the public is encouraged to access this page for further information on regulatory activities associated with odour emissions from CCL Munster. The page is available at <a href="https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation">https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation</a> under ‘Community Updates.’</p> |

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| <p>and older children within minutes of smelling the odour and young children becoming unsettled.</p> <ul style="list-style-type: none"> <li>• Reports of children suffering from asthma and eczema which may be made worse due to the environmental conditions. Increases in allergies in people/children, including asthma.</li> <li>• Mental health impact due to the ongoing and constant nature of the issues which are not alleviating.</li> <li>• Children from the local primary school, Beelair Primary School, have advised parents that physical education lessons and outdoor activities are regularly impacted by the odour and they are not allowed to go back to the classroom when the odour is present due to having to complete the lesson or activity so have to suffer the impact of the smell.</li> </ul>  |  |
| <p><b>Summary of comments relating to dust emissions</b></p>  | <p><b>DWER response</b></p>  |
| <p>14 of the 30 respondents reported that dust emissions are the secondary concern relating to the premises. Amenity is severely impacted by this emission, with reports of dust causing medical issues, damage to property such as cars and increased home maintenance due to clogging of filters, and impacting components for hot water systems and the like.</p> <p>Some of the common impacts reported in the submissions included:</p> <ul style="list-style-type: none"> <li>• Outdoor living area is constantly a mess, covered in fine black dust (increased water usage due to cleaning) – causes issues with rollers and window runners (property damage).</li> <li>• Hot water system only a few years old needing to be replaced due to the build-up of dust within the unit.</li> <li>• Increased need for servicing of items such as hot water and air-conditioners due to the impact of fine dust particles from CCL.</li> <li>• After every rainfall, there is a significant deposit of lime and dust left on cars, windows, and other outdoor surfaces. Lime deposits not only cause damage to personal property but also pose potential health risks to the local community.</li> <li>• If doors are left open, black dust enters the home.</li> </ul> | <p>The licence amendment is limited to authorising trials of shell sand feed diversion on kiln 6 and a licence extension to provide sufficient time for the trials to take place, the collection and analysis of the data from the trials, and completion of investigations and actions to inform CCL's broader odour strategy.</p> <p>The use of the shell sand feed diversion is not expected to change the premises dust emissions therefore does not alter the risk profile of this emission.</p> <p>The licence contains several existing conditions related to dust mitigation measures and dust monitoring at sources and ambient locations.</p> <p>CCL are implementing improvements which are expected to reduce the premises dust emissions. These include phasing out the use of coal by the end of 2024, moving cement manufacturing to its Kwinana facility when expansion works at this facility are complete and trialing prilling of lime kiln dust. Prilling of lime kiln dust forms conglomerated spheres which are less prone to dust lift off. CCL expects this will reduce fine dust emissions from the lime kiln dust disposal area as there will be less free</p> |

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|  | <p>particulate matter likely to become wind blown.</p> <p>The public is encouraged to access this page for further information on regulatory activities associated with odour emissions from CCL Munster. The page is available at <a href="https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation">https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation</a> under 'Community Updates.'</p>  |
| <p><b>Summary of additional comments and concerns</b></p>  | <p><b>DWER response</b></p>  |
| <p>Approximately a quarter of respondents detailed concerns the current licence conditions relating to coal, odour and dust are not being adhered to and there has been no improvements to these matters over the years. The community feels their concerns have been unheard and dismissed by CCL and government. Given previous trials undertaken in relation to the feed diversion have not been successful, there is a lack of understanding as to how an additional 12 months will improve the results of such trials.</p> <p>Further related matters raised included:</p> <ul style="list-style-type: none"> <li>• Dust is continuously an issue.</li> <li>• Some residents have been involved in the recent and lengthy prosecution of CCL and have noticed no improvement at all relating to odour.</li> <li>• Due to the ongoing nature of the issues there should be stricter regulatory standards on the CCL Munster facility.</li> <li>• How will the impact of odour on the community be measured? If it is based on complaints community members are tired of complaining so have stopped complaining so this is not a consistent variable to measure.</li> <li>• Despite claims by CCL that they are making efforts to reduce pollution and improve air quality, there is no evidence of real progress. The facility is old and fails to comply with current health and environmental regulations.</li> <li>• Community feels they have experienced emissions amounting to unreasonable emissions pursuant to the EP Act.</li> <li>• People have the right to walk out of their homes and be able to breathe clean air, free of pollutants (reference was made to the Clean Air Act and Agreement of Australia).</li> </ul> | <p>The department acknowledges the concerns raised and the length of time which has been taken to address odour impacts. Refer to comments above in respect of odour and dust.</p> <p>The public is encouraged to access this page for further information on regulatory activities associated with odour emissions from CCL Munster. The page is available at <a href="https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation">https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation</a> under 'Community Updates.'</p> <p>The department's community updates page notes that part of CCL's strategy includes the phasing out of the use of coal by the end of 2024. For this reason, CCL's trials propose operating feed diversion on Kiln 6 while it is fired by natural gas as a fuel only.</p> |

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| <ul style="list-style-type: none"> <li>• The amount of broken promises that CCL has not lived up to is bewildering. For CCL to be (so called) undergoing experimental ideas and processes at this stage of their business life is an insult to the community and absolutely shows the lack of addressing their problematic emission control for far too many years.</li> <li>• Burning coal releases a number of airborne toxins and pollutants such as mercury, lead and sulphur dioxide and is clearly associated with increased risks of cancers, lung and respiratory disease and many other negative health and environmental impacts</li> <li>• A visible black plume from the factory</li> <li>• The alleged odour suppression measures implemented by CCL have done nothing to alleviate the problem.</li> </ul>  |   |
| <p><b>Summary of comments relating to the proximity of the premises to residential areas</b></p>  | <p><b>DWER response</b></p>   |
| <p>10% of submissions raised concern regarding the encroachment of residential housing on the premises over the years, and the increased need for stricter regulatory controls.</p> <p>The separation distance between the premises and residential areas has shrunk over time with new housing developments. As a result, an increased number of people are being impacted by pollution from the premises than in the past.</p> <p>There is no ability for prospective home buyers or members of the public to be able to research historic issues to know the potential ongoing concerns and issues in the area.</p> <p>Respondents suggested either implementing stricter controls or moving the premises to Kwinana Strategic Industrial Area.</p> <p>Due to the planning decisions made at state and local government level, the community now have to live with the direct result of residential zoning in close proximity to industry. To date, there has been a considerable lack of community care and empathy from all parties to best mitigate this decision and co-exist in a way that is mutually beneficial to the residents and CCL.</p> | <p>The location of residential developments and land zoning are matters considered under the <i>Planning and Development Act 2005</i> therefore are not within the regulatory scope of instruments issued under Part V of the EP Act.</p> <p>As detailed in this decision report, the department is actively engaging with CCL in relation to its odour reduction strategy and considers that the amendment provides an appropriate amount of time for completion of necessary investigations to inform an odour reduction plan which will then inform future regulatory requirements relating to the premises emissions.</p> |

## Appendix 2: Summary of applicant’s comments on draft risk assessment and draft conditions

| Condition | Summary of applicant’s comment on Licence  | Department’s response   |
|-----------|--|---|
| 48        | CCL advises that timeframe of 30 April 2025 is requested, based on the later start date of testing compared to the Licence Amendment Application and to allow enough time to complete all testing to meet the minimum number of tests for the statistical assessment of the odour monitoring plan.   | The department requested an updated date for trial completion as it expected timelines had changed. The department accepted this revised date noting that it is important for CCL to complete its proposed trials and maximise the amount of monitoring data acquired towards scientifically demonstrating the efficacy of feed diversion for reducing odour emissions. |
| 49        | CCL requested the complaints data reported to DWER be the same as required by condition 39 on the licence for complaints reporting.  | Condition 49 updated to align the complaint information to align with condition 39 complaints reporting information. The requirement to report the operating status of kiln 5 and 6 has been maintained.  |
| 50        | <p>CCL requested that the requirement for field odour surveys to be conducted concurrently with every stack test be revised to require 2 odour field surveys during stack tests for each scenario.</p> <p>The reasoning was based on:</p> <ul style="list-style-type: none"> <li>- Resource logistics - to be able to conduct only one odour field survey per week stack tests with two weeks required to complete each testing scenario.</li> <li>- Concurrent testing – aligning stack tests and odour field surveys reduces the number of opportunities available to complete the survey to meet the condition as the survey weather requirements and kiln operating parameters need to coincide.</li> <li>- Use of data – minimum of 2 OFS required for statistical assessment based on: <ul style="list-style-type: none"> <li>a) the variability from meteorological conditions on plume grounding and effect this has on ability to draw conclusions from the results</li> <li>b) how undertaking OFS may assist in validating potential impact at ground level, at a particular point in time</li> <li>c) that the comparison of one mode of operation to the other and determination of the efficacy of odour reduction from FD operation will use stack-sourced sampling as the main quantitative measure.</li> </ul> </li> <li>- Complaints analysis - CCL considers complaints analysis to be of additional value to the assessment of odour scenarios in community by OFS due to the following reasons: <ul style="list-style-type: none"> <li>a) Complaints from residents have a broader spatial and temporal distribution than the OFS.</li> </ul> </li> </ul> | <p>The department reviewed this request, including consultation with its air quality experts. A minimum of two odour field surveys per scenario was accepted and Condition 50 was updated.</p>  |

| Condition     | Summary of applicant's comment on Licence   | Department's response   |
|---------------|---|---|
|               | b) As CCL is planning to maintain a single mode of operation for a number of weeks, all complaint information during this period will be an important indicator of impact of odour from that scenario in the community.   |   |
| 52            | <p>CCL requests that the frequency of shell sand moisture content and shell sand composition be changed to "one per stack test required by condition 52" in each frequency.</p> <p>This is because CCL has continuous shell sand moisture analysis and once per shift (twice daily) laboratory measured moisture analysis completed. Results from this QA/QC process are used to provide kiln shell sand feed rate control and are a key part of the overall kiln control system. Similarly, the shell sand composition analysis is also taken once per shift (twice daily). The blending methodology used ensures the shell sand is of a consistent quality and therefore the variability during the stack sampling period is deemed not material.</p> <p>These results can be provided to DWER upon request. Additional sampling will not provide any additional information to the odour testing plan.</p> | <p>As CCL has continuous shell sand moisture analysis, the delegated officer has determined that this and one laboratory test per stack test will provide a sufficient amount of data for the purposes of comparing shell sand moisture to emissions data.</p> <p>A minimum of two shell sand composition samples are required to ensure the reliability of data however ideally four samples should be taken per stack tests. The frequency of shell sand composition testing has been updated to two per stack.</p> |
| 53            | CCL advises that timeframe of 30 June 2025 is requested for submission of the report on the trial. This timeframe is required based on the later start date of testing compared to the Licence Amendment Application and to allow enough time to complete all testing to meet the minimum number of tests for the statistical assessment of the odour monitoring plan and subsequent development of the final report for DWER review.   | As the feed diversion trials will start later than CCL anticipated the submission date for the Feed Diversion Monitoring Report has been updated to 30 June 2025 to allow time for the trials to be completed and CCL to complete the Feed Diversion Monitoring Report.   |
| Section       | Summary of applicant's comment on amendment report  | Department's response   |
| Section 2.3.1 | paragraph two talks to the operation of feed diversion when the wind direction is between a certain window. CCL has been advised by Katestone that we will get better results if we seek to operate consistently. Doing so will provide better data for statistical assessment of process parameters as well as better complaints data. CCL expect that the long-term solution will have a wind-based operating window, but we seek to clarify a revised testing position to be constant operation of a single scenario throughout the testing window   | Amendment report updated to state that CCL have requested the use of the feed diversion continuously to allow for the collection of sufficient monitoring data.   |
| Section 2.3.2 | CCL will not consume the coal stockpile by the end of 2024 as it was too wet following the prolonged external storage over the winter months. CCL will prioritise the feed diversion trials over the summer months without the use of coal and will aim to use up the remaining coal stockpile following these trials.  | Amendment report updated to reflect that coal will be phased out later than the end of 2024   |
| Section       | CCL has used kiln 5 for 8.5 days to support Kiln 6 during the November shutdown and   | Amendment report updated to reflect kiln 5 being used for 8.5 days since May  |



| Condition | Summary of applicant's comment on Licence         | Department's response |
|-----------|---|-----------------------|
| 2.3.2     | has since placed kiln 5 back into an offline mode |                       |