



CEO initiated licence amendment

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

| | |
|--------------------------|--|
| Licence Number | L4533/1967/15 |
| Applicant | Cockburn Cement Limited |
| ACN | 008 673 470 |
| File Number | APP-0034038 |
| 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 | 30 March 2026 |
| Proposed Decision | Licence granted |

Table of Contents

| | |
|---|-----------|
| 1. Decision summary | 1 |
| 2. Premises background and context | 1 |
| 3. Odour impacts | 1 |
| 3.1 Previous attempts to reduce odour | 1 |
| 3.2 Odour reduction plan (ORP) | 2 |
| 3.2.1 Odour Management and Monitoring Plan (OMMP) | 2 |
| 3.2.2 Stack redesign | 2 |
| 3.2.3 Oxidation – Long term solution to odour emissions | 2 |
| 3.2.4 Prevention Notice (December 2025) | 3 |
| 3.3 Further odour reduction actions | 3 |
| 4. Complaints | 3 |
| 5. Scope of assessment | 3 |
| 5.1 Regulatory framework | 3 |
| 5.2 November 2025 amendment application | 4 |
| 6. Risk assessment | 4 |
| 6.1 Source-pathways and receptors | 4 |
| 6.1.1 Emissions and controls | 4 |
| 6.1.2 Receptors | 5 |
| 6.2 Risk ratings | 7 |
| 7. Supplementary information on CEO initiated amendments | 9 |
| 7.1 Long-term solution - RTO | 9 |
| 7.2 Use of limestone / lime sand feedstocks | 9 |
| 7.3 Removal of Odour investigation report condition | 9 |
| 8. Consultation | 9 |
| 9. Decision | 10 |
| 9.1 Approval for the use of alternative feed stock | 10 |
| 9.2 Screening and crushing of limestone | 10 |
| 9.3 Removal of odour investigation report condition | 10 |
| 9.4 Removal of feed diversion conditions | 10 |
| 9.5 Pilot RTO | 11 |
| 9.6 Licence Extension | 11 |
| 10. Conclusion | 11 |
| References | 14 |
| Appendix 1: Summary of stakeholder’s comments on the application | 15 |
| Appendix 2: Summary of applicant’s comments on draft risk assessment and | |

draft conditions18

Table 1: Proposed licence holder controls..... 5

Table 2: Sensitive human and environmental receptors and distance from prescribed activity. 5

Table 3: Risk assessment of potential emissions and discharges from the Premises..... 7

Table 4: Consultation 9

Table 5: Conditions that have been added removed or altered by this amendment..... 12

Figure 1: Complaints received by the Department between August 2025 and January 2026 ...3

Figure 2: Distance to residential receptors 6

1. Decision summary

This Amendment Report documents the assessment of potential risks to the environment and public amenity from emissions and discharges during the operation of the Cockburn Cement Limited (CCL) Munster (the premises). As a result of this assessment, an amendment to licence L4533/1967/15 (L4533) has been granted. The amendment is limited to:

- A new condition that allows limestone, lime sand or shell sand to be used as a feedstock material;
- New conditions that require any crushing and screening of limestone to occur within “Quarry 10” and associated dust management requirements;
- New conditions that require CCL to install a pilot Regenerative Thermal Oxidiser (RTO) by 30 August 2026, allow emissions associated with pilot RTO testing activities and notification of pilot RTO testing commencement;
- A new condition that requires the submission of a pilot-scale RTO testing report which includes a summary of all testing undertaken and an analysis of the outcome of the trial;
- A one year extension of the licence until 30 March 2026 (to enable pilot RTO testing); and
- Removing redundant conditions relating to completed feed diversion trials.

Amendments to the licence are on the initiative of the CEO pursuant to sections 59(1) and 59(2) of the *Environmental Protection Act 1986* (EP Act).

2. Premises 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 EP Act by licence L4533.

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>.

The Department of Water and Environmental Regulation (DWER, the Department) 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.

In December 2022, CCL was convicted of causing unreasonable odour emissions between January and April 2019, and a fine imposed of \$290,000. CCL appealed to the Supreme Court, which upheld the convictions but reduced the fine to \$245,000.

On 21 March 2025, CCL was fined a total of \$20,000 for unreasonable odour emissions that occurred in early 2020.

3. Odour impacts

3.1 Previous attempts to reduce odour

Since 2018, CCL have made process changes and trialled a number of methods to try to mitigate odour impacts including:

- Trials of odour neutraliser injection into the stack;
- Trials of feed diversion (introducing shell sand into a hotting part of the pre-heater tower)

in 2022-23; and

- Further feed diversion trials in 2024-25.

Testing and analysis on these trials by CCL to date has not demonstrate sufficient reduction in odour emissions or impacts.

3.2 Odour reduction plan (ORP)

On the 31 July 2025, following the completion of the 2024-2025 feed diversion trials, CCL submitted its ORP (ADBRI 2025) and published it on its website. The ORP details six works streams that CCL proposed to address the odour impacts. These included:

- Work stream 1 - Odour management and monitoring including the use of a trigger action response plan (TARP) for the 2025-26 summer period.
- Work stream 2 - Stack redesign, cone or eductor to help improve dispersion of the odour emissions.
- Work stream 3 – Low temperature oxidation - ozone injection.
- Work stream 4 – Thermal oxidation – Regenerative Thermal Oxidiser (RTO)
- Work stream 5 – Odour solutions for kiln 5
- Work stream 6 – Organisational progress with site rehabilitation

3.2.1 Odour Management and Monitoring Plan (OMMP)

On 16 October 2025 CCL submitted its OMMP (Katestone 2025) to the Department. The plan outlines how CCL plans to address odour impacts until more permanent measures can be implemented. The plan includes a trigger action response (TARP) that proposes actions CCL will take during different meteorological conditions that are likely to result in odour impacts on the community. This includes reducing shell sand feed rates to between 7.5% and 20% of the standard operating rate and opening a fresh air bleed damper. The plan also outlines the odour monitoring CCL plans to do for the spring and summer period for 2025-26.

The Department's review of the OMMP and TARP have concluded they are unlikely to result in a meaningful reduction in odour impacts over the Summer period 2025-26.

3.2.2 Stack redesign

On 20 February 2026 CCL submitted a works approval application for authorisation to install a dispersion cone to the top of the kiln 6 stack. The application is outside the scope of this assessment and associated licence amendments and will be subject to a separate works approval application process.

3.2.3 Oxidation – Long term solution to odour emissions

On 7 November 2025 CCL submitted a timeline for work streams 3 and 4 which are the use of ozone for the destruction of odour, and thermal oxidation using an RTO.

The timeline shows that pilot scale trials for low temperature oxidation using ozone and regenerative thermal oxidation are planned to be completed by September 2026. If the pilot trials are successful, one of the technologies will be chosen to be installed as a long-term solution to odour. In its timeline CCL indicated that full-scale implementation is not expected to be complete until mid 2030.

On 9 February 2026 CCL advised it will be submitting a works approval application for approval to conduct pilot scale trials of both low temperature oxidation using ozone injection and thermal oxidation using an RTO. Both trials involve using pilot plants to treat a small proportion of the stack flow to determine the effectiveness of each and also to inform full scale design.

3.2.4 Prevention Notice (December 2025)

On 23 December 2025 the Department issued CCL with a Prevention Notice requiring CCL to reduce its total shell sand feed rate to 160t/hr or below between 01 January 2026 and 30 April 2026. The restriction on feed rate was made in an attempt to reduce odour impacts in the community.

3.3 Further odour reduction actions

On 16 January 2026 the Department wrote to CCL requesting CCL provide a plan for the use of an alternative feedstock by way of a licence amendment application to reduce odour impacts in the short term.

On 30 January 2026 CCL provided a letter outlining the proposed actions it could take to further reduce odour emissions, which included:

- Continuing to implement the TARP;
- Using a locally sourced alternative feed stock as a trial with 1-10% mix with the remainder of the feedstock to be shell sand;
- Pre-piloting an ozone injection unit that is designed to treat around 2% of the stack flow from CCL's Kiln 6.

This assessment takes into account information in CCL's 30 January 2026 letter.

4. Complaints

The Department continues to receive a high number of odour complaints each month relating to odour emissions from CCL's kiln stacks with an increase of complaints happening during summer periods. Figure 1 below shows complaint numbers received by the Department between August 2025 and January 2026.

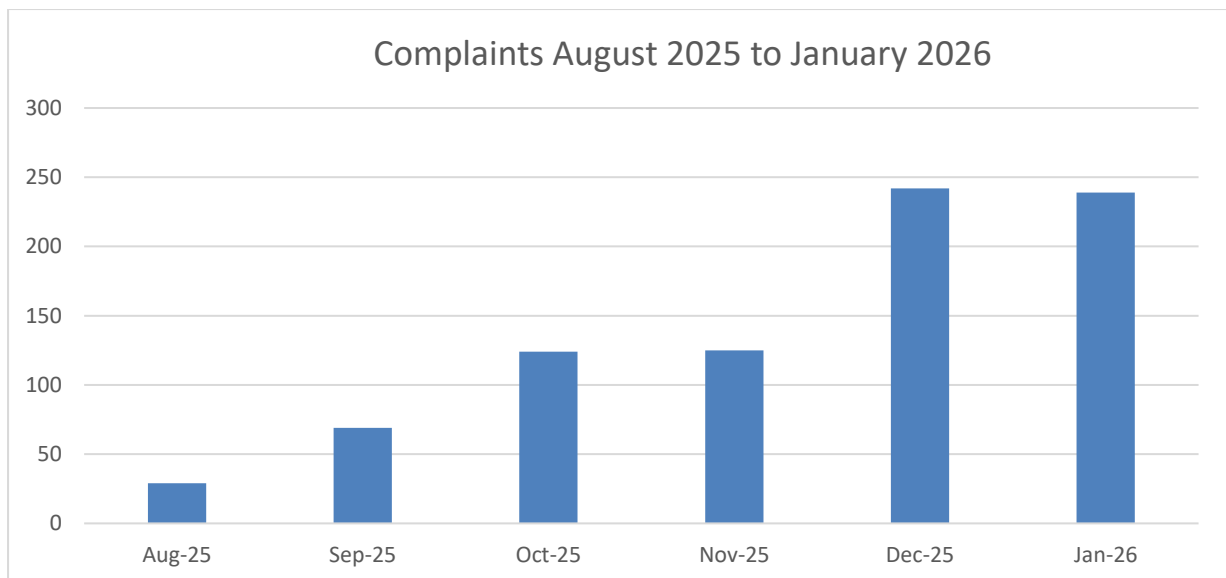


Figure 1: Complaints received by the Department between August 2025 and January 2026

5. Scope of assessment

5.1 Regulatory framework

In completing the assessment documented in this Amendment Report, 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>

5.2 November 2025 amendment application

On 28 November 2025 CCL (the licence holder) submitted an application for a licence amendment under section 59 and 59B of the EP Act. The following amendments were sought:

1. Extending the expiry date to 30 March 2031 (five-years); and
2. Removal of conditions 48 to 54 relating to shell sand feed diversion trials that have now been completed and the relevant reports have been submitted to the Department.

The Department validated this application and invited public submissions. The Department has considered all public submissions on that application through this assessment (refer to Section 8). The requests in point 1 and 2 above were considered with the scope of this assessment and related CEO-initiated licence amendments.

6. 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.

6.1 Source-pathways and receptors

6.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during the continued operation of the premises 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 kilns | | | |
| Odour | Operation of Lime Kilns | Air/windborne pathway | CCL proposed the implementation of the ORP which includes the use of the TARP in the short term, the proposed stack modification to increase dispersion in the medium term and technologies for the oxidation of odour in long term. |
| Air emissions not related to odour (No change as result of proposed works) (Particulate matter NO _x , SO _x , CO) | | | CCL currently uses bag houses to mitigate particulate emissions from the lime production kilns. CCL currently undertakes stack emission and CEMS monitoring as per the requirements of the licence. |

6.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020a), 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 2 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 2020a)).

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 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 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 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 |

| Land Use/Zoning | Direction from plant | Population |
|--|---|--|
| Residential, recreation and primary school. 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. 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 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 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 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 2: Distance to residential receptors

6.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020a) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in Section 6.1. 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 6.1), 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 continued operation of the premises until 30 March 2027. 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

| Risk Event | | | | | Risk rating ¹ | Applicant controls sufficient? | Conditions ² of licence | Reasoning and justification for regulatory controls |
|---|---|---|---|----------------------|---|--------------------------------|--|---|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Applicant controls | C = consequence L = likelihood | | | |
| Operation of Kilns | Odour emissions | Air/windborne pathway causing wide scale 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 6.1 | C = Major L = Likely High Risk | N | <p>To ensure CCL are working towards a demonstrated odour reduction technology:</p> <ul style="list-style-type: none"> - Condition 49 has been added to the licence to require the installation of a pilot scale RTO by 30 August 2026; - Condition 50 has been added to the licence to authorise the testing of the pilot scale RTO; and - Condition 51 has been added to the licence to require CCL to notify the Department when RTO pilot testing has started. | <p>The ORP and OMMP are not expected to achieve adequate and/or timely short- and long-term odour management. The Department has undertaken extensive research, including independent expert peer review, into RTO technology as a long-term solution for odour impacts. The Department believes an RTO provides adequate certainty and reliability to eliminate odour impacts.</p> <p>The Delegated Officer has determined that the requirements for CCL to install a pilot scale RTO is required to ensure steps are being taken towards a long-term odour solution. A one-year extension to the licence facilitates these requirements.</p> <p>In making this assessment the Delegated Officer took into account the following:</p> <ul style="list-style-type: none"> - There are ongoing high levels of complaints relating to the odour emissions from the kilns; - Attempts to adequately address odour impacts by CCL have not been successful; - RTOs are a demonstrated technology for odour abatement; - The Department is working with CCL to address odour impacts in the community for the short-term. - CCL are working to implement odour reduction technologies in the medium term with the works approval application for the kiln 6 stack cone submitted on 20 February 2026. <p>The department is working with CCL to ensure that following the pilot scale trials, CCL continue to make timely progress towards long term odour reduction solution.</p> |
| General operations of the site | Air emissions - Dust | Air/windborne pathway causing wide scale impacts on receptor health or amenity | Nearest residential area 800m north of the Kiln stacks. | | C = Minor L = Unlikely Medium Risk | Y | NA | No changes to the current operations relating to dust. CCL are currently using a lime kiln dust prilling machine to help reduce dust emissions from the lime kiln dust disposal area. |
| Use of alternative feed stocks in lime kiln | Odour | Air/windborne pathway causing wide scale impacts on receptor health or amenity | Nearest residential area 800m north of the Kiln stacks. | NA | C = Minor L = Rare Low Risk | NA | <p>Condition 3 has been added to the licence to authorise CCL to use calcium carbonate rich feedstocks, shell sand, lime sand and limestone.</p> | <p>While the current licence does not contain specific limitations on feedstock, the basis of assessment and broader condition setting is based on CCL's use of shell sand as a feedstock to produce quicklime.</p> <p>It has been scientifically shown that the source of odour emissions primarily relates to the heating of shell sand, more specifically organics in the shell sand, through the pre-heater tower. Limestone and lime sand are more commonly used feedstocks worldwide for lime production with lower levels of organics. The Department is continuing to engage with CCL on options to use alternative feedstocks. The new conditions allow CCL use limestone and lime sand in addition to shell sand.</p> <p>The optional use of limestone and lime sand do not necessitate further changes to air emission control (e.g. monitoring and limits) conditions of the licence and use of these alternative feedstocks is expected to reduce odour emissions.</p> |
| | Other air emissions – CO ₂ , NO _x | | | | C = Minor L = Rare Low Risk | NA | NA | <p>As the reaction of calcium carbonate to calcium oxide is a standard relationship the amount of CO₂ emitted is expected to be the same as when shell sand is used as the feed stock.</p> <p>The emission profile for combustion gases is not expected to be a change due to a change in feed stock as approximately the same amount of gas will be required in the process.</p> <p>The air emissions monitoring requirements of the licence are considered adequate for monitoring the air emissions from the use of alternative feed stocks that includes CEMS monitoring for PM, CO, SO₂, NO_x total reduced sulfur and VOCs with annual stack tests for metals and acid gases.</p> <p>The Delegated Officer has determined the current air emission monitoring is adequate for a change in</p> |

| Risk Event | | | | | Risk rating ¹ C = consequence L = likelihood | Applicant controls sufficient? | Conditions ² of licence | Reasoning and justification for regulatory controls |
|-----------------------------------|----------------------|-------------------------------|---|--------------------|---|--------------------------------|--|--|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Applicant controls | | | | |
| | | | | | | | | feedstock to lime sands or limestone. |
| Crushing of alternative feedstock | Air emissions - Dust | Air/windborne pathway | Nearest residential area 830m north of Quarry 10. | NA | C = Minor L = Rare Low Risk | NA | <p>Condition 4 has been added to the licence to require any crushing of feedstocks to take place within quarry 10.</p> <p>Condition 33 has been added to the licence to require that stockpiles are stored in a manner that minimises dust generation.</p> <p>Condition 27, 28 and 29 have been amended to include quarry 10 as an area that needs to be inspected and action taken if it is identified as an area of dust emissions.</p> | <p>The Delegated Officer has determined that crushing and screening of alternative feed stocks should only be undertaken in quarry 10 and the use of dust control measures on the stockpiles are necessary to ensure dust is controlled during the processing of feedstocks.</p> <p>Condition 27, 28 and 29 have been amended to include quarry 10 and are considered adequate dust response measures.</p> |
| | Noise | Air/windborne pathway | | NA | C = Minor L = Rare Low Risk | NA | NA | <p>The noise from crushing of limestone within quarry 10 is expected to comply with the <i>Environmental Protection (Noise) Regulations 1997</i>, so no further conditions are required to control noise from the crushing of limestone.</p> |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020a).

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

7. Supplementary information on CEO initiated amendments

7.1 Long-term solution - RTO

Since approximately 2018, CCL and the Department have investigated the source and cause of odour emissions from the premises, concluding it is the release of organic compounds through the preheating of shell sand. DWER 2019 and DWER 2020 document DWER's investigations into the source/cause and long-term solutions. The Department is of the view an RTO is a proven odour reduction technology for the cement and lime sector and the benchmark for the destruction of VOCs, total organic carbon and odorous compounds from industrial processes, such as those emitted from the premises. An RTO continues to provide the necessary level of certainty to reliably deliver the required level of odour reduction.

The Department recognises that completing a pilot-scale RTO study adds certainty to the effectiveness, design, operation and outcomes of a full-scale RTO. CCL's ORP proposes pilot RTO testing to commence in July 2026 and be completed by September 2026. However, CCL's ORP also outlines a five-year timeframe for implementing a full-scale RTO (if selected as the long term solution). The Department considers a five-year timeframe for implementing a long-term solution to be excessive.

7.2 Use of limestone / lime sand feedstocks

As noted above, the cause of odour generation has been identified as the release of organic compounds through the preheating of shell sand. Limestone or lime sand feedstocks do not contain the organic content and are expected to significantly reduce or potentially eliminate odour impacts. CCL has submitted a works approval to the Department for the trial use of imported limestone as a substitute feedstock for shell sand. In its letter to the Department CCL also advised it had identified a limited local source of lime sand that could be used in the production of quicklime.

Authorising the use of limestone and lime sand feedstocks allows CCL to immediately commence feed substitution trials and activities towards achieving short-term odour reductions.

7.3 Removal of Odour investigation report condition

Condition 16B has been removed from the licence as the requirement to complete and submit the report has been completed with the report being submitted in August 2019.

8. Consultation

Table 4 provides a summary of the consultation undertaken by the Department. With reference to section 5.2, the Department has considered all submissions on CCL November 2025 application (that requested a 5-year licence extension), as part of this assessment and any CEO-initiated amendments to the licence.

Table 4: Consultation

| Consultation method | Comments received | Department response |
|--|--|---------------------|
| Department's website and letters sent to Stakeholders on 14/01/2026. | The Department received 114 submissions relating to CCL's November 2025 licence amendment 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 14/01/2026 | The LGA responded opposing a 5 year licence extension and requested a 1 year extension due to continuing odour impacts. A summary of the LGAs comments is included in Appendix 1. | Refer to Appendix 1 |
| David Scaife – MLA Member for Cockburn advised of proposal by email on 14/01/2026: | A summary of the comments received is included in Appendix 1. | Refer to Appendix 1 |
| Department of Energy and Economic Diversification (DEED) advised of proposal by email on 14/01/2026. | No response received. | NA |
| CCL was provided with draft documents on 04/03/2026. | CCL provided comments on the draft Licence and amendment report on 26/03/2026. Comments are summarised in Appendix 2. | Refer to Appendix 2 |

9. Decision

9.1 Approval for the use of alternative feed stock

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. By using an alternative feedstock to shell sand the odour emissions will be significantly reduced.

The delegated officer has determined to authorise the use of alternative feed stocks. This allows CCL flexibility to use limestone and lime sand feedstock as part of any broader measures to reduce short-term odour impacts.

9.2 Screening and crushing of limestone

The existing licence already includes Category 12 (screening etc. of material) related to historical quarrying activities within the premises. The Department notes that CCL may operate mobile crushing and screening equipment in “Quarry 10,” toward the south west boundary of the premises. The equipment may be used for the pre-processing of limestone feedstock materials. The licence has been amended to specify the location of limestone crushing and screening equipment and to ensure that fugitive dust management conditions on the licence apply to this activity to minimise the risk of dust emissions.

9.3 Removal of odour investigation report condition

As discussed in section 7.3 the requirement for condition 16B has been met and has now been removed from the licence.

9.4 Removal of feed diversion conditions

CCL has completed its feed diversion trials and submitted all the documents required by the conditions of the licence that relate to feed diversion. The Delegated Officer considers this to be an administrative change to the licence as there is no further authorization for operation of the feed diversion infrastructure, so redundant conditions have been removed from the licence.

9.5 Pilot RTO

The requirement for a pilot RTO and the associated timeline is consistent with CCL's ORP. The Department also notes advice from CCL it is preparing a separation application for pilot-scale studies. The Department understands that a pilot RTO is an important step to inform the final design and engineering of a full-scale RTO. Emissions from a pilot scale RTO pose a negligible risk, and conditioning requirements for the pilot RTO allow CCL to immediately proceed with this study towards timely progression of a full-scale RTO and long-term odour solution.

9.6 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 2026.

CCL have applied a five-year extension to the licence stating that the 5 year extension is required to provide operational certainty and security of supply for its customers.

DWER's *Guidance Statement: Licence Duration* (DER 2016) states what the delegated officer will take into account when considering a licence's duration. Included in this is the level of risk of harm to public health and the environment posed by the premises.

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 2026 to 30 March 2027.

The decision to amend the licence to extend its duration by one year provides for CCL to complete the pilot RTO study towards timely implementation of a long term odour solution.

The Delegated Officer determined to include conditions in the amended licence requiring:

- Installation of the pilot RTO by 30 August 2026.
- Submission of a pilot-scale RTO testing report by 31 December 2026.

A one year extension of the licence allows for the lawful operation of the premises and the installation of a pilot scale RTO on kiln 6.

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.

10. 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 |
|---|---|
| New conditions - Alternative feedstock condition | |
| Condition 3 | Condition authorising feedstocks has been added to the licence. |
| Condition 4 | Condition requiring any crushing or screening of alternative feedstocks is done within quarry 10. |
| Condition 33 | Condition requiring appropriate storage of stockpiles to minimise dust. |
| Odour investigation report | |
| 16B | Condition requiring the submission of the Odour Investigation Report in 2019 has been removed as the report was submitted by the due date. |
| Amended conditions relating to coal | |
| 19 | Condition 19 (previously 17) has been amended to include the qualifier “if present” related to monitoring requirements. |
| 27 | Condition 27 (previously 25) has been amended to include the qualifier “if present” related to inspection requirements. |
| 29 | Condition 29 (previously 27) has been amended to include the qualifier “if present” related to inspection requirements. |
| Schedule 1: Premises plan B | Amended labelling to read “coal stockpile area.” |
| Odour Reduction Plan conditions | |
| 46 | Condition 46 required the licensee to prepare and submit an odour reduction plan, as this requirement has been met the condition has been deleted. |
| 47 | Condition 47 required the licensee to publish the odour reduction plan on its website, as this requirement has been met the condition has been deleted. |
| New conditions - RTO Conditions added to the licence | |
| 49 | Condition added to require the licensee to install a pilot scale RTO by 30 August 2026. |
| 50 | Condition added to authorise the use and discharge of the pilot scale RTO. |
| 51 | Condition added to require the licensee to notify the CEO when testing using the pilot scale RTO has been completed. |
| 52 | Condition added to require the submission of a pilot-scale RTO testing report by 31 December 2026. |
| Feed diversion conditions removed from the licence | |
| 48 | Condition authorising feed diversion trials has been deleted from the licence |
| 49 | Condition requiring feed diversion trial reporting on a weekly basis has been deleted from the licence |

| Condition No. | Details |
|--------------------------|---|
| 50 | Condition specifying the monitoring conditions during feed diversion trials has been deleted |
| 51 | Condition requiring air emission monitoring during feed diversion trials to be NATA accredited has been deleted |
| 52 | Condition requiring the monitoring of process parameters during feed diversion trials has been deleted |
| 53 | Condition requiring a feed diversion monitoring report be submitted has been deleted |
| 54 | Condition specifying the feed diversion monitoring report has been deleted |
| Licence extension | |
| NA | Licence expiry date extended from 30 March 2025 to 30 March 2026 |

References

1. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
2. DWER 2020a, *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 2025, Application for Licence amendment (L4533) and supporting documentation (DWER Reference APP-0032754).
6. DWER, October 2019, *Potential sources of odour emissions at Cockburn Cement Limited - Technical Report*. Department of Water and Environmental Regulation.
7. DWER, 2020b *Identification of the major sources of odour at Cockburn Cement Limited – Summary Report*. Department of Water and Environmental Regulation.
8. CCL May 2020, Letter to DWER titled *Licence L4533/1967/15 and odour investigations*.
9. Ektimo April 2020, *Shell Sand Testing: Summary Report Cockburn Cement, Munster*
10. EESAC October 2020, Independent technical review of CCL's latest investigations
11. DER, August 2016. *Guidance Statement: Licence duration*. Department of Environment Regulation, Perth.
12. ADBRI 2025, *Odour Reduction Plan –Cockburn Cement Ltd Munster*
13. Katestone 2025, *Odour Management and Monitoring Plan – Prepared for Cockburn Cement Ltd*

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

| Summary of comments relating to odour emissions | DWER response |
|---|---|
| <p>100% of the 114 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"> • Concern over a 5 year extension with no odour mitigation measures in place and comments that a one year extension would be more appropriate. • Concern the odour is getting worse. • 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. • In summer months, the odour is reported to be worst. Wind conditions can affect the impacts experienced by those in the community. • The impact of odour emissions is affecting local businesses and reduced people attending these businesses due to the smell. • 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 • 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 and older children within minutes of smelling the odour and young children becoming unsettled. • Mental health impact due to the ongoing and constant nature of the issues which are not alleviating. | <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 plan and considers that the amendment supports next steps in CCL implementing its odour reduction plan. The amendment authorises the use of alternative feed stocks and requires CCL to install a pilot scale RTO. The pilot scale testing and outcomes will inform the design of a full-scale RTO.</p> <p>The licence extension has been limited to one year.</p> <p>The Department is currently working with CCL to mitigate odour impacts in the short term.</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 https://www.wa.gov.au/organisation/departments-of-water-and-environmental-regulation under ‘Community Updates.’</p> |

| Summary of comments relating to dust emissions | DWER response |
|--|--|
| <p>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"> • 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). • Hot water system only a few years old needing to be replaced due to the build-up of dust within the unit. • Increased need for servicing of items such as hot water and air-conditioners due to the impact of fine dust particles from CCL. • 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. • If doors are left open, black dust enters the home. | <p>The licence amendment is limited to authorising the use of alternative feed stocks and requiring the installation of a pilot scale RTO and a licence extension to provide sufficient time for the pilot scale RTO testing to take place, the collection and analysis of the data from the testing, and completion of investigations and actions to inform the design of a full-scale RTO.</p> <p>The proposed amendments are 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>Dust emissions from crushing and screening in quarry 10 have been considered within the risk assessment to be low risk, and appropriate adjustments to controls measures have been implemented.</p> <p>CCL have implemented improvements which are expected to reduce the premises dust emissions. These include phasing out the use of coal, moving cement manufacturing to its Kwinana facility and 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 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 https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation under 'Community Updates.'</p> |

| Summary of comments relating to the proximity of the premises to residential areas | DWER response |
|--|---|
| <p>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 |
|--|--|---|
| Duration | <p>CCL accept the 1 year extension of the licence duration however commented that a 5-year extension would have allowed them to commit and focus on the full delivery of their odour reduction plan (ORP) with certainty.</p> <p>CCL note they will seek a longer extension at the completion of this licence term and considers that only a longer-term extension would provide sufficient confidence to support an investment decision for an odour management solution.</p> | <p>Noted. It is open to CCL to apply to amend its licence at any time, including to request further extensions of the licence, should new information become available.</p> |
| Removed and amended conditions 17,18,19 and 20 (now 19,20,21 and 22) | <p>CCL notes that there is no plan to use coal in the near future however, given the instability of world energy supply CCL are requesting the following:</p> <ul style="list-style-type: none"> Licence wording to be amended so that coal-firing provisions for the lime kilns remain in place, but are only activated once CCL notifies DWER of its intention to reintroduce a coal stockpile on site and recommence the use of coal as a kiln fuel. CCL seeks confirmation that daily inspections relating to coal stockpiles (conditions 17, 27) are not required unless a coal stockpile is present on site <p>CCL further comment that retention of the coal related licence conditions is important to ensure that the capability to operate the lime kilns on dual fuel is maintained. This flexibility is a key component of energy security planning in the event of a gas supply disruption.</p> | <p>The Department proposed to remove coal related conditions on the basis that CCL has phased out the use of coal to fire its kilns. The Department considered CCL comments and decided not to proceed to removing coal related conditions at this time as time is required to further engage with CCL on suitable amendments to coal related conditions that remain risk-based but also consider its operational needs.</p> <p>While the Department did not proceed with removing coal related conditions, it did amend conditions relating to the monitoring or inspection of the coal stockpile to include the qualifier ("if present") to clarify that monitoring per condition 19 and inspections via conditions 27 and 29 are only required when coal is being stockpiled at the premises. This amendment report has also been updated to reflect this change.</p> <p>The Department has not included the proposed requirement for notification of CCL's intention to reintroduce a coal stockpile at the premises,</p> |
| Condition 25 and 27 (now 27 and 29) | <p>CCL request that references to Quarry 10 are replaced with "quarry" as CCL have commented they will determine the best location to enable dust controls to be implemented.</p> | <p>Quarry 10 has been specified as the approved location for crushing and screening activities under condition 4 of the licence, based on the Department's risk assessment per section 6.2 of this Amendment Report. No other locations have been assessed or authorised for these activities. The Department had regard to information in CCL's 19 December 2025 works approval application that proposed to locate mobile crushing and screening equipment within Quarry 10 only.</p> <p>The Department has therefore retained reference to Quarry 10 within the inspection requirements. Condition 26 requires daily inspections of Quarry 10, and condition 25 requires visual inspection within two hours of an exceedance of the ambient dust monitor response level specified in Schedule 4: Table 12. These conditions are intended to identify potential sources of fugitive dust, including those associated with crushing and screening activities.</p> |

| Condition | Summary of applicant's comment on Licence | Department's response |
|---|---|--|
| | | It is open to CCL to apply to amend its licence at any time and provide further case-specific information on other locations and any additional proposed controls. |
| NC3 (now 33) | <p>In reference to 33 (a) CCL notes that due to the lime kiln requirements screening to a fine size fraction, water introduction on the crusher or screen may not be possible due to blockages on the screening equipment and therefore alternate dust mitigation techniques may be required.</p> <p>In reference to 33 (b) CCL requests that the wording is modified to refer to Table 15 which already includes provision for stockpile dust management controls.</p> | <p>The Department accepts that water sprays may not be a suitable control for CCL's proposed crushing and screening operations. The requirement for water sprays has been removed, noting there are other prescriptive dust response measures within Table 13 of the licence (previously Table 15).</p> <p>Regarding 33(b) it is noted that Table 13 sets out management actions in response to ambient dust monitor exceedances (refer condition 28) and does not include operational requirements for dust control during normal operations. Accordingly, the Department has retained condition 33(b), as it provides options for dust suppression, including wetting down or covering of material, allowing the licence holder to implement an operationally suitable control to minimise dust emissions.</p> |
| NC4 (now 49) | <p>CCL requests that the installation of a pilot-scale RTO be changed to 30 August 2026. This is based on the following:</p> <ul style="list-style-type: none"> • Installation is dependent on completion of preceding activities, including final design changes and instrumentation requirements informed by the testing plan and kiln process. • Any required customisation of the pilot module will be completed prior to mobilisation to site. • Current forecast indicates pilot customisation will be completed by early August 2026. • Installation is anticipated to be completed on site by the end of August 2026 and RTO trials are expected to commence shortly after installation is complete. | The Department has determined to accept the requested two-month extension for the installation of the pilot-scale RTO, consistent with CCL's revised timeline. Therefore, condition 49 has been amended to revise the installation deadline from 30 June 2026 to 30 August 2026. |
| NC7 (Replaced) Condition 52 added | <p>Regarding the requirement to submit a works approval application for a full-scale RTO by 31 December 2026, CCL noted that they could not support this timeframe, as a decision on a preferred solution could not be made until the technology had been demonstrated to be effective (following piloting). CCL proposed to submit an RTO pilot study report to the Department by 31 December 2026 and a pilot decision report by 28 February 2027, in lieu of a works approval application. This report would outline CCL's selected technology for progression to the feasibility phase.</p> <p>CCL's Odour Reduction Plan (ORP) identified two technologies that may provide acceptable odour reduction, being a regenerative thermal oxidiser (RTO) and ozone injection.</p> | <p>The Department had regard CCL's submission points, including its commitments. CCL's position that it requires both the ozone and RTO to be piloted prior to making a business decision is a matter for CCL and does not reflect the Department's view that an RTO is a proven odour technology for the cement and lime sector and the benchmark for the destruction of VOCs, TOC and odorous compounds, including those from the premises. An RTO continues to provide the necessary level of certainty to reliably deliver the required level of odour reduction. At this time, the Department has no application before it for proposed piloting of ozone related technology and with limited information, there remains uncertainty as to its efficacy and acceptability for addressing odour impacts.</p> <p>CCL's submission indicated a proposed "external approval (DA, DWER)" by March 2028. The Department took this to infer a works approval application by late 2027 and noted proposed commissioning of an RTO by March 2030 (approx. 4 years from now). CCL outlined a need to undertake pilot studies, navigate its internal financial approvals and</p> |

| Condition | Summary of applicant's comment on Licence | Department's response |
|-----------|---|--|
| | <p>CCL stated they require both ozone and RTO technologies to be piloted prior to making a business decision. CCL provided a revised project timeline for both treatment options, with key dates as follows:</p> <ul style="list-style-type: none"> - External approvals stage (including Part V approval): March 2028 (RTO) and January 2028 (ozone injection) - Commissioning: March 2030 (RTO) and May 2029 (ozone treatment) <p>Further CCL commented that they cannot foresee design being sufficiently progressed inside 3-6 months following completion of the pilot trials to support submission of a works approval application.</p> | <p>undertake detailed design so that it can provide sufficient detail to support an RTO application and was unable to achieve this by the proposed 31 December 2026 deadline.</p> <p>The Department has removed the proposed requirement for the submission of a works approval application for a full-scale RTO by 31 December 2026 at this time. The Department is issuing a short-term licence only (12 months) and will continue to engage with CCL on its timelines for a long-term solution.</p> <p>The Delegated Officer has instead incorporated a reporting requirement for the submission of a pilot scale RTO testing report, which will inform the detailed design of the full-scale RTO plant. The testing outcomes will inform next steps in the implementation of a long term odour solution.</p> |