



Application for Licence Amendment

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

Licence Number	L6036/1988/13
Licence Holder	Coogee Chlor Alkali Pty Limited
ACN	009 276 635
Application Number	APP-0028414
Premises	Coogee Chlor Alkali Kemerton Plant Marriott Road KEMERTON WA 6233

Legal description –

Part of Lot 1 on Diagram 73196 and Part of Lot 510 on Plan 50377 as depicted in Schedule

As defined by the coordinates in Schedule 2 of the Revised Licence

Date of Report	12 November 2025
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Decision	Revised licence granted
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1. Decision summary

Licence L6036/1988/13 is held by Coogee Chlor Alkali Pty Limited (Licence Holder) for the Coogee Chlor Alkali Kemerton Plant (the Premises), located at Marriot Road, Kemerton.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L6036/1988/13 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 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://dwer.wa.gov.au/regulatory-documents>.

2.2 Application summary

On 6 April 2025, the Licence Holder submitted an application to the department to amend Licence L6036/1988/13 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Changes to production or design capacity
- Change premises footprint
- Additional emission points to air and associated process monitoring
- Changes and additions to recovery and monitoring bores and associated monitoring

The Licence Holder has completed and commissioned an expansion project (TREX Project) authorised by Works Approval W6609/2021/1 is currently in the time limited operations phase of the works approval. This application is to incorporate the new plant into the existing licence.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
31	39,500 tonnes per annual period	90,000 tonnes per annual period	The licence holder has constructed a new plant to run in parallel with the existing facility which increases the design capacity of the premises. The new plant does not include additional chlorine storage

2.2.1 Chlorine production and transfer

The works under W6609/2021/1 have increased chlorine production capacity of the facility from 55 tonnes per day (tpd) to 115 tpd. During current operations liquid chlorine is stored prior to vaporisation and transferred to the Tronox pigment plant, adjacent to the Premises, for the manufacture of titanium dioxide. In the expansion, chlorine liquefaction will not occur and gaseous product will be transferred directly to Tronox, on demand as required. Chlorine is produced via the electrolysis of purified sodium chloride brine solution in ion exchange membrane electrolysis cells. Other products produced by this process include sodium hydroxide and sodium hypochlorite as well as hydrogen and hydrochloric acid. There is no storage of chlorine involved in the new processing plant as after the product is cooled, dried, and compressed it will flow directly to Tronox via a high-pressure chlorine gas export pipeline.

As part of the works, some groundwater monitoring and abstraction bores were decommissioned. The applicant has made a separate application to the department to manage this as well as changes to the groundwater abstraction licence.

The works approval requirements included a compliance report submitted 18 July 2023 and a commissioning report submitted 14 January 2025.

2.3 Part IV of the EP Act

The premises is subject to Ministerial Statement 1144 which has a requirement that not more than 100 tonnes of chlorine be stored at the premises at any one time. There is no storage of chlorine involved in the new processing plant as after the product is cooled, dried, and compressed it will flow directly to Tronox via a high-pressure chlorine gas export pipeline.

2.4 Consolidation of Licence

As part of this amendment package the department has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table 2.

Table 2: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
25/9/2014	L6036/1988/13	Licence granted (re-issue)
29/04/2016	L6036/1988/13	Expiry date amended to 30/09/2032.

The obligations of the Licence Holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the Licensee to obtain the form from the department's website;
- revised licence condition's numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The full consolidation of licence conditions as they relate to this Revised Licence are detailed in Section 5.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

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* (DWER 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 premises operation which have been considered in this Amendment Report are detailed in Table 3 below. Table 3 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Leachate	Storage of process water and brine sludge in effluent sumps	Seepage to soil and groundwater	Wastewater and brine sludge stored in an effluent sump and pH adjusted for transfer to Tronox effluent ponds in a batch process. The effluent sumps are purpose built tertiary containment with level controls
Noise	Process operations	Air/windborne pathway	Equipment within building. Low noise generating equipment installed Boundary noise assessment during commissioning confirms sound levels do not exceed the regulations.
Effluent air (Cl ₂ , N and O ₂)	Hypochlorite system	Air/windborne pathway	Cl ₂ absorption tower. 4 x Cl ₂ in process detectors with interlocks to shutdown plant. Interlocks triggered at Cl ₂ ≥ 50ppm. Subject maintenance and inspection program. Safety critical control under Safety Report. Vent stacks to atmosphere, estimated height = 15 metres. In process caustic flow transmitter in hypo-reactor and hypo-scrubber to monitor caustic flow rate is within approved range. Interlock for plant shutdown. QC monitoring program to validate [OH ⁻] on 12 hour shift basis at hypo-reactor and hypo-scrubber locations. Regular inspection and maintenance regime.

Emission	Sources	Potential pathways	Proposed controls
H ₂ gas	H ₂ stacks	Air/windborne pathway	Continuous temperature control monitoring and alarms. Inject N₂ for dilution. Vent stacks to atmosphere, estimated height = 14 metres. Critical control set points managed by DCS system. Regular inspection and maintenance regime

3.1.2 Receptors

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

Table 4 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 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Closest residential receptor	1.7 km east-south-east of the Premises boundary 2.3 km south-east of the Premises boundary
Neighbouring industries	Adjacent. Stack located ~100m from nearest industrial receptor
Environmental receptors	Distance from prescribed activity
Geomorphic Wetlands Swan Coastal Plain (management)	Immediately to the north-east, east and south-east of the Premises boundary
Ecological Communities (Threatened Ecological Communities and Priority Ecological Communities) Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Within and immediately to the north-east, east and south of the Premises boundary
Threatened / Priority Flora	Located beyond the Premises boundary within 1 – 2km
Threatened / Priority Fauna	Located within 2km of the Premises boundary
Bunbury Groundwater Area	Within the premises boundary

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete 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 works approval 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 5.

The Revised Licence L6306/1988/13 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5. Risk assessment of potential emissions and discharges from the Premises during operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Operation								
Emissions from hypochlorite production unit vent stack	Effluent air (Cl ₂ , N ₂ , O ₂)	Air / windborne pathway causing impacts to health and amenity	Residences 1.7 km ESE and 2.3 km SE Industrial neighbours	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1, 3, 9 and 11	The sodium hypochlorite production unit has been designed for absorption of chlorine gas in case of upset. Most of the chlorine is absorbed by a reactor and the composition of the waste gas leaving the reactor is mainly nitrogen with a trace of chlorine. The remaining chlorine is removed by scrubbing with diluted caustic soda. The chlorine content of waste gas leaving the scrubber is continuously measured by chlorine detectors. Rectifier shutdown is initiated if high levels of chlorine are detected. Installation and operation of this equipment is confirmed in the compliance report and commissioning report.
Emissions from the electrolysis area hydrogen gas vent	H2 gas vented to atmosphere from the electrolysis area hydrogen gas vent	Air / windborne pathway causing impacts to health and amenity	Residences 1.7 km ESE and 2.3 km SE Industrial neighbours	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	Y	Condition 1 and 11	Hydrogen gas exiting the electrolysis unit is cooled down and filtered to separate caustic droplets prior to venting to atmosphere via the hydrogen stack. Continuous temperature monitoring in the stack with a high temperature alarm to detect the existence of fires. If high temperatures are detected a nitrogen purge

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								valve will be opened to inject nitrogen into the stack to extinguish possible fires.
Emissions from effluent sump	Effluent spills (process water and brine sludge)	Discharge/seepage to land and infiltration to groundwater	Groundwater (Bunbury Groundwater Area)	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1 and 12	The effluent tank has been designed and installed to contain liquid from the brine treatment, brine filtration and sulphate removal system. Effluent sump is pH adjusted and pumped to the effluent treatment plant on the Tronox site. Water stops have been placed between joints in the concrete. The sump has a lining of a vinyl ester fiberglass There is also a HDPE liner and a ground monitoring bores to detect leaks. There is an interlocked level control system. Installation and operation of this equipment is confirmed in the compliance report and commissioning report.
Plant processing area	Hydrogen and chlorine / hydrogen and air explosion	Explosion impacting nearby vegetation, industrial receptors and potential wildfires	Residences 1.7 km ESE and 2.3 km SE Industrial neighbours Threatened flora (within 2km of the Premises boundary) Threatened fauna (within	Refer to Section 3.1	C = Major L = Rare Medium Risk	Y	Condition 1	Hydrogen gas exiting the electrolysis unit is cooled down and filtered to separate caustic droplets prior to venting to atmosphere via the hydrogen stack. Continuous temperature monitoring in the stack with a high temperature alarm to detect the existence of fires. If high temperatures are

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Reasoning
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
			1- 2km of the Premises boundary) TEC (within and immediately to the north-east, east and south of the Premises boundary)					detected a nitrogen purge valve will be opened to inject nitrogen into the stack to extinguish possible fires Installation and operation of this equipment is confirmed in the compliance report and commissioning report.
Chlorine export systems	Loss of containment for Chlorine	Air / windborne pathway causing impacts to health and amenity	Residences 1.7 km ESE and 2.3 km SE Industrial neighbours	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1	The chlorine gas export system consists of a 100 mm high pressure chlorine gas export pipeline and there is no intermediate storage in the TREX plant. The Chlorine export has been configured to shut down remotely from the DCS by interlock or manually by closing chlorine export valve. Chlorine export has been configured to invoke automatic isolation of the export system if anomalous operating conditions are detected. Depressurisation is achieved by interlock and manual by load reduction and produced chlorine will be directed to the chlorine absorption system, Installation and operation of this equipment is confirmed in the compliance report and commissioning report.

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

Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of proposal 16 June 2025	N/A	N/A
Licence Holder was provided with draft amendment on 23 September 2025	The licence holder replied on 16 October 2025 requesting that: - the terminology for table 1 be altered to better identify the components of the plant in particular distinguish between the Lurgi and TREX plants; - In Table 4 corrections to the terminology of the discharge points; - In Table 6 corrections to the labels of the monitoring bores.	The delegated officer agreed to these changes because it did not change the risk and better clarified the meaning of the licence.

5. Decision

The delegated officer has determined the proposal to operate the TREX production facility does not pose an unacceptable risk to public health or the environment. The determination is based on the following:

- Interlock controls for emissions of chlorine.
- Interlock controls for hydrogen vent temperatures.
- The chlorine export has been configured to shut down remotely from the DCS by interlock or manually by closing chlorine export valve.
- The sealing and lining of the effluent sump.
- Groundwater monitoring program.

The Delegated Officer has amended licence L6036/1988/13 in accordance with section 59(1) of the EP Act by including the additional infrastructure and modifying the format of the licence.

5.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 7: Consolidation of licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion notes
N/A	Expiry Date: 30 September 2019	Expiry Date:30 September 2032	In accordance with the Notice of Amendment of Licence Expiry Dates (29/04/2016)
N/A	Prescribed Premises Category table	N/A	Revised to current licensing format and increased the assessed production capacity
N/A	Preamble	N/A	Revised to current licensing format.
1.1.1 1.1.2	Interpretation and definitions	N/A Interpretation section, Definitions	Redundant condition. Revised to current licensing format.
1.1.3	Australian or other standard	N/A Interpretation section, Definitions	Redundant condition. Revised to current licensing format.
1.1.4	Reference to code of practice	N/A	Redundant condition. Revised to current licensing format.
1.1.5	Emissions	Interpretation Note	Redundant condition. Revised to current licensing format.
1.2.1	Pollution control and monitoring equipment	N/A	Redundant condition. Adequately covered by alternative existing conditions. Deleted from licence.
1.2.2	Recovery and removal of spills	N/A	Redundant condition. Adequately covered by EP (Unauthorised Discharges) Regulations 2004. Deleted from licence.
1.2.3	Prevention of contamination and containment of contaminated stormwater	N/A	Redundant condition. Adequately covered by alternative existing conditions and proposed new conditions. Deleted from licence.
1.2.4	Boundary marked on the ground	N/A	Redundant condition. Adequately addressed by GPS Co-ordinates and fence. Deleted from licence
2.1.1	Record and investigate exceedances of limits or targets	N/A	Redundant condition. Deleted from licence.
2.2.1	Point source emissions to air	Condition 2	New numbering and update to wording format
2.2.2	Emissions to air limits	Condition 3	New numbering and update to wording format
3.1.1	General monitoring and use of water sampling and storage standards	Condition 4	New numbering

Existing condition	Condition summary	Revised licence condition	Conversion notes
3.1.2	Monthly monitoring at least 15 days apart	Condition 5	New numbering
3.1.3	Record production details for monitoring	Condition 6	New numbering
3.1.4	Monitoring equipment calibration	Condition 7	New Numbering
3.1.5	Where requirements for calibration can't be met	Condition 8	New Numbering
3.2.1	Monitoring of point source emissions to air	Condition 9	New numbering and update to wording format
3.2.2	Use of CEMS code	Condition 9	New numbering and update to wording format
3.2.3	CEMS calibration	Conditions 7 and 9	New numbering and update to wording format
3.3.1	Process monitoring	Condition 11	New numbering
3.4.1	Ambient monitoring	Condition 12	New numbering and amendment of monitoring bore labels
4.1.1	Records	Conditions 14 and 15	New numbering and update to wording format
4.1.2	Any person in charge of premises is aware of conditions	N/A	Redundant condition deleted from licence
4.1.3	Annual Audit Compliance Report	Condition 16	New numbering and update to wording format
4.1.4	Complaints	Condition 13	New numbering and update to wording format
4.2.1	Annual Environmental Report	Condition 17	New numbering and update to wording format
4.2.2	Contents of AER	Condition 18	New numbering
4.2.3	CEMS reporting	Condition 19	New numbering
4.3.1	Notification	Condition 20	New numbering and update to wording format
Schedule 1: Maps	Premises map	New maps	Updated maps to show new boundary and new infrastructure
Schedule 2 Reporting & notifications	Annual Audit Compliance Report Form N1 Notification	N/A	Redundant attachment. Deleted from Licence Forms accessed at www.dwer.wa.gov.au

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Coogee Chlor Alkali 2025, *Application for licence amendment*, Perth, Western Australia
5. Environmental Protection Authority 2020, *Statement to Change the Implementation Conditions Applying to a Proposal Chlor Alkali Plant Kemerton*, Perth Western Australia
6. Coogee Chlor Alkali 2023, *Works Approval Compliance Report for TREX Project*, Perth Western Australia
7. Coogee Chlor Alkali 2025, *Works Approval Environmental Commissioning Report for TREX Project*, Perth Western Australia