



Application for works approval amendment

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

Works approval number	W5977/2016/1
Works approval holder	Tianqi Lithium Kwinana Pty Ltd
ACN	612 085 364
DWER file number	DER2016/001280
Premises	Tianqi Lithium Hydroxide Refinery 61 Donaldson Road KWINANA BEACH WA 6167 Legal description – Lot 201 on Deposited Plan 407762 Certificate of Title Volume 2914 Folio 662 As defined by the premises maps attached to the Revised Works Approval
Date of report	02/08/2022
Decision	Revised works approval granted

Chris Malley
Manager, Process Industries
an officer delegated under section 20
of the *Environmental Protection Act 1986* (WA)

Decision summary

The delegated officer has determined the make amendments to works approval W5977/2016/1. The amendments are predominantly administrative in nature and do not alter the assessed risk profile of the premises, providing those activities, emissions and receptors as stated in existing approvals remain unchanged.

This report documents the amendments made pursuant to section 59 and 59(B) of the *Environmental Protection Act 1986* (EP Act).

The decision report for the existing works approval and subsequent amendment reports will remain on the department's website for future reference and will act as a record of the department's decision making.

Scope of assessment

Regulatory framework

In amending the works approval, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at <http://dwer.wa.gov.au/regulatory-documents>.

Application summary

Tianqi Lithium Kwinana Pty Ltd (Tianqi) holds works approval W5977/2016/1 for its proposed lithium hydroxide refinery on Donaldson Rd, Kwinana Beach (the premises).

On 23 May 2022, Tianqi submitted an application to the department to amend the works approval, regarding further extensions to the duration of the works approval and the commissioning phase for the first processing train, changes to the air emission sampling methods specified for monitoring particulates, and other administrative changes.

Tianqi has experienced further delays in its commissioning schedule for the first processing train, primarily due to worker shortages and supply chain issues caused by the pandemic. A further 12-month extension for commissioning of Stage 1 until 24 October 2023 is therefore being sought, to allow sufficient time for the completion of commissioning, including air emissions sampling, and for application for a licence to be submitted and assessed for operation of Stage 1.

An 18-month extension to the duration of the works approval to 30 December 2025 is being sought, to allow for construction and commissioning of the second train (Stage 2) and application for licence to be submitted and assessed.

As part of air emissions testing during commissioning, Tianqi has identified limitations for sampling PM₁₀ due to port sizes and requiring the temperature of the stack to be above dew point when using the methodology specified in the works approval (USEPA Method 201A), that will result in increased sampling hours and related costs.

Tianqi's air emissions consultant (Ektimo) has recommended an alternative test method, ISO 13330:2020, be used instead with samples to be collected isokinetically by either USEPA Method 5 or 17.

Ektimo has also recommended the provision for an alternative test method for sampling TSP stack measurements be included in the works approval, being USEPA Method 17, which would enable the sampling contractor to select the most appropriate method based on moisture content, temperatures, and analytes.

Condition 21 of the existing works approval, which relates to notification requirements for non-compliances with emissions limits, currently references the infrastructure and equipment requirements for design and construction in condition 6 as the emission limits for non-

compliance reporting. Tianqi considers the emission limits specified in condition 14 under time limited operations to be more appropriate, and therefore seeks to change this reference.

Clarification is also sought through amending condition 18 to require submission of a consolidated commissioning report 30 days after the completion of all sampling rounds for all components of the first train, instead of separate reports for individual train components.

Decision

Extension of works approval and commissioning duration

The delegated officer recognises the disruptions caused by the COVID-19 pandemic and considers a further 12-month extension for commissioning of Stage 1 until 24 October 2023, and a further 18-month extension to the works approval duration until 30 December 2025, to be reasonable and relevant changes have been made to the works approval to give this effect.

Changes to air emissions sampling method

The department does not currently have the required specialist knowledge of emissions testing methods or methodology. The delegated officer has therefore relied upon the specialist advice provided to Tianqi by Etkimo on the suitability of the proposed emission measurement methods.

PM₁₀

The test method specified within the existing works approval for PM₁₀ is USEPA Method 201A, which is a semi-isokinetic sampling method that uses a cyclone sampling head to separate the PM₁₀ particulate fraction from the larger particulate matter fraction. This method is 'in stack' and the temperature of the stack is relied upon to maintain the sampling head above dew point in the same manner as USEPA Method 17. USEPA Method 201A requires a large head and will not fit in sample ports smaller than 4 inches (100 mm).

The alternative method recommended by Etkimo is ISO 13320:2020, which uses a laser diffraction analysis technique to determine particle size distribution of the collected particulate matter. The sample is collected isokinetically by either USEPA Method 5 or USEPA Method 17. The advantage of using particle size analysis is the full particle size distribution can be obtained rather than just the PM₁₀ contribution.

Etkimo considers both methods will provide similar results for roughly spherical particles of known density. The delegated officer has therefore amended the works approval to include provision for stack sampling and measuring PM₁₀ using either ISO 13320:2020 or USEPA Method 201A.

TSP

The test method specified within the existing works approval for TSP is USEPA Method 5, which involves isokinetic sampling using an 'out of stack' heated sampling probe and associated collection filter. The heated equipment is principally to maintain the sampling probe and filter at above dew point by maintaining a temperature of 120°C.

The alternative method recommended by Etkimo is USEPA Method 17, which is an isokinetic sampling method. The principal difference to USEPA Method 5 is the collection filter is 'in stack' and the temperature of the stack is relied upon to maintain the sampling filter above dew point.

The advantage of using USEPA Method 17 is the sampling equipment is less cumbersome and easier and safer to use.

Etkimo considered that both methods would provide a similar result. The delegated officer has therefore amended the works approval to include provision for stack sampling and measuring TSP using either USEPA Method 5 or 17.

Administrative changes

The delegated officer agrees that non-compliance notification requirements should reference the emission limits specified in condition 14 (Table 7) rather than the design requirements specified in condition 6 (Table 2).

The delegated officer does not object to the submission of a single, consolidated air emissions report for each processing train, in lieu of separate reports for the individual sampling events.

Consultation

The works approval holder was provided with drafts of the amended works approval and amendment report on 6 July 2022 and replied with no comments on the 28 July 2022.

Conclusion

The delegated officer has determined to amend the existing works approval, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Summary of amendments

Table 1 provides a summary of the proposed amendments and works approval changes and will act as record of implemented changes. All proposed changes have been incorporated into the works approval as part of the amendment process.

Table 1: Summary of works approval amendments

Existing condition	Condition summary	Revised works approval condition	Amendment notes
N/A	Expiry Date: 30 June 2024	Expiry Date: 30 December 2025	Revised expiry date of works approval by 18 months
Table 4	Authorised emission table Condition 9 Table 4 (b)(i) 42 months for stage 1	Authorised emissions table Condition 9 Table 4 (b)(i) changed to 54 months for stage 1	Revised to allow stage 1 emission to continue for a further 12 months to complete commissioning and to allow time to apply for a licence to operate train 1.
Table 8	Monitoring of discharges	Condition 15 Table 8	Revised table to include alternative sampling methods for air emissions for TSP and PM ₁₀ .
Table 9	Emission report requirements	Condition 18 Table 9	Revised table to clarify that 30-day requirement for reports are required at the end of the second sampling rounds for each train.
Condition 21	Non-compliance notification	Condition 21	Revised condition to refer to Table 7 and not condition 6 for emission limit non-compliance.