



Application for Works Approval Amendment

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

Works Approval Number	W6499/2021/1
Works Approval Holder	Covalent Lithium Pty Ltd
ACN	623 090 139
File Number	DER2020/000568 (APP-0027271)
Premises	Covalent Lithium Hydroxide Refinery 15 Mason Road KWINANA BEACH, WA 6167 Legal description – Lot 15 on Deposited 74883 As defined by Figure1 in Schedule 1 of the Works Approval
Date of Report	8 April 2025
Decision	Revised works approval granted

Alana Kidd

Manager, Green Energy

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Works approval W6499/2021/1 (W6499) is held by Covalent Lithium Pty Ltd (works approval holder) for the lithium hydroxide refinery on Mason Rd, Kwinana (the premises).

The delegated officer has determined to grant amendments to works approval W6499/2021/1. The granted amendments are largely administrative in nature and therefore do not alter the risk profile of the premises, providing those activities, emissions, and receptors as stated in the existing approval remain unchanged.

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

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

2. Scope of assessment

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

2.2 Application summary

The premises relates to categories 31 and 44 with an assessed production capacity of 50,276 dry tpa lithium hydroxide, 116,531 dry tpa sodium sulphate, and 382,860 dry tpa of spodumene ore under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in existing Works Approval W6499/2021/1.

On 28 January 2025 the works approval holder submitted a works approval amendment application. This application seeks to amend the following:

- Aligning Condition 12, Table 4 and Schedule 3 Table 10 frequency of air emission stack sampling for environmental commissioning and time limited operations to account for the variability of operational conditions.
- Updating Schedule 3 Table 10 proposing changes to sampling methods for air particulates monitoring. This is proposing that particulate matter (less than 10 microns) (PM₁₀) has the addition of USEPA Method 17 and ISO 13320:2020 and total suspended particulates (TSP) the additional option of USEPA Method 17.

2.2.1 Proposed amendments

Proposed changes to air emission stack sampling

Condition 12, Table 4 of W6499 authorises duration timeframes of environmental commissioning in aggregate days. Schedule 3, Table 10 requires stack emission and discharge monitoring in calendar days. Covalent has indicated that due to staggered commissioning of the stacks, it is not possible to undertake two sampling events within a 3 month period timeframe (for example, stacks may only be emitting once during the 3 month period).

Covalent requests the amendment of the frequency in Table 10 from “*During commissioning two separate sample events separated by at least one week within the first three months of emissions through the discharge point.*” to “*During commissioning two separate sample events separated by at least one week*”.

Covalent has indicated that this change would allow two separate sampling events to be

undertaken during the 90 aggregate days of emissions approved by Table 4. Furthermore, it will enable Covalent to be compliant with the monitoring requirements and for sampling to be more reflective of normal operations given the changes would allow for sampling to be taken under more stable conditions under environmental commissioning.

In addition, Covalent has requested that the frequency of sampling for time limited operations is similarly amended in Table 10 by removing the words “*within the first three months of emissions through the discharge point.*”

Proposed changes to particulate monitoring

Sampling Methodology

Covalent engaged Ektimo to undertake stack emissions testing. From a review of the stack infrastructure and works approval conditions, alternative methods were recommended by Ektimo for stack testing. Covalent has requested amendment of sampling methods in Table 10 for PM₁₀ and TSP as outlined below.

PM₁₀

Table 10 of W6499 requires PM₁₀ sampling by USEPA Method 201A. Covalent requests the addition of USEPA Method 17 and ISO 13320:2020. Several of the premises stack diameters are too small to accommodate USEPA method 201A, which requires a diameter greater than 673 mm. Furthermore, USEPA Method 201A can be difficult when there are high negative stack pressures with gas exiting temperatures exceeding 205°C.

TSP

Table 10 of W6499 requires TSP sampling by USEPA Method 5. Covalent request the addition of USEPA Method 17. 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.

Ektimo has advised Covalent that both methods would provide a similar result.

3. Decision

Based on the assessment in this Amendment Report, the delegated officer has determined to grant some of the amendments to works approval W6499/2021/1. In assessing the proposed changes, the delegated officer determined there is not likely to be any material change to the risk profile of emissions and discharges from the premises associated with the amendment as per the reasons set out below.

Changes to air emission stack sampling

The delegated officer will grant the changes to environmental commissioning as the same number of air emission samples will be taken during the environmental commissioning period, therefore there are no changes to the emissions. Furthermore, sampling under steady state operational conditions is more reflective of actual emissions and thus the ongoing operations and therefore more representative.

The delegated officer will not grant the same changes to time limited operations as the works approval holder is required to take “*one sample event every six months of emissions through the discharge point.*” The requirement for sampling during the first three months does not exist and is therefore not able to be removed.

Changes to TSP and PM₁₀ sampling methodology

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 in 2022 and Covalent in 2025 by Ektimo on the suitability of the proposed

emission measurement methods (see references Ektimo 2022 and DWER 2022).

- The amendment requests the addition of USEPA Method 17 and ISO 13320:2020 as an alternative to USEPA 201A for sampling PM₁₀ stack sampling measurements.
- The amendment requests addition of USEPA Method 17 as an alternative to USEPA Method 5 for sampling TSP stack sampling measurements.

It is noted that USEPA Method 201A, 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 the 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 four inches (100 mm).

The alternative method recommended by Ektimo is ISO 13320:2020, which uses a laser diffraction analysis technique to determine the 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.

Ektimo 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 PM₁₀ using either and/or a combination of ISO 13320:2020, USEPA Method 17, and USEPA Method 201A, and for TSP using USEPA Method 5 or 17.

4. Consultation

The works approval holder was provided with the draft Amendment Report on 19 March 2025. The works approval holder accepted all changes and waived the comment period on 24 March 2025.

5. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined that an amended works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

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

Table 1: Summary of works approval amendments

Condition no.	Proposed amendments
History	Works approval amendment added to works approval
Schedule 3 Table 10	Changes to the frequency of environmental commissioning and methods for sampling for PM ₁₀ and TSP.

References

1. Covalent Lithium Pty Ltd, 2025, *Works Approval W6499/2021/1 Application*, Perth Western Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia
3. Department of Water and Environmental Regulation (DWER) 2022, *Works approval W6499/2021/1 - Covalent Lithium Pty Ltd, issued 9 May 2022*, Perth, Western Australia.
4. DWER 2022, *Amendment Report W6499/2021/1 - Covalent Lithium Pty Ltd, issued 9 May 2022*, Perth, Western Australia.
5. DWER 2022, *Amendment Report W5977/2016/1 – Tianqi Lithium Kwinana Pty Ltd issued 2 August 2022*, Perth Western Australia.
6. Ektimo (2022), *Licensed Air Discharge Test Methods, Correspondence 280422 (Appendix B Air Emission Sampling Amendment – Supporting Information for Tianqi Amendment 2022)*, Perth, Western Australia (Unpublished).