Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Works Approval Amendment

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

Works Approval Number	W6283/2019/1
Works Approval Holder	Talison Lithium Australia Pty Ltd
ACN	139 401 308
File Number	DER2019/000216
Premises	Talison Lithium Mine Maranup Ford Road GREENBUSHES WA 6254 Legal description – Mining Tenements – M01/3, M01/6, M01/7, M01/8, M01/9, M1/16 General Purpose Lease – G01/1, G01/04 As defined by the Premises maps attached to the Revised Works Approval
Date of Report	17 March 2025
Decision	Revised works approval granted

Michael Greenslade Digitally signed by Michael Greenslade
Date: 2025.03.17 13:57:57 +08'00'

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

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1. Decision summary

Works Approval W6283/2019/1 is held by Talison Lithium Australia Pty Ltd (works approval holder) for the Talison Lithium Mine (the premises), located on Maranup Ford Road, Greenbushes WA 6254, located on Mining tenements M01/3, M01/6, M01/7, M01/8, M01/9 and M1/16 and General Purpose leases G01/1 and G01/04.

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 construction and operation of the premises. As a result of this assessment, Revised Works Approval W6248/2019/1 has been granted.

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 29 November 2023, the works approval holder submitted an application to the department to amend Works Approval W6283/2019/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Increase to works approval W6283-2019/1 Category 5 throughput from 11.6 million tonnes per annum (Mtpa) to 12.5 Mtpa;
- Construction of one new crusher, three ore sorters, and additional associated infrastructure; and
- Authorisation of time-limited operations for all infrastructure on the works approval (existing and new infrastructure / equipment) as shown in Figure 1.

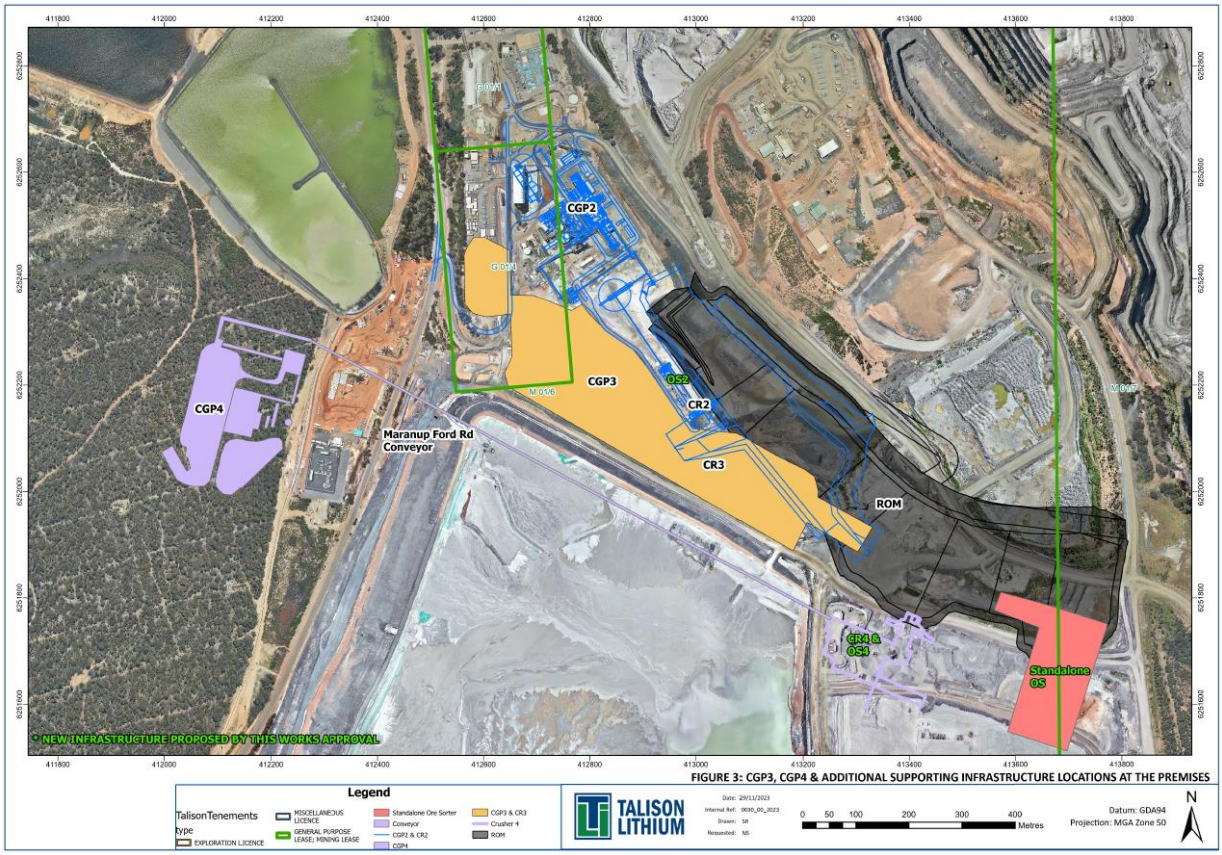

FIGURE 3: CGP3, CGP4 & ADDITIONAL SUPPORTING INFRASTRUCTURE LOCATIONS AT THE PREMISES

Figure 1: Infrastructure within scope of the works approval

The works approval holder has provided an updated proposed schedule for the project commencement dates as detailed in Table 1.

Table 1: Works approval holder proposed schedule of project commencement dates

Infrastructure	Construction	Commissioning[1]	Operation
CGP4 Processing Circuit (including CGP OS with Crusher 4 circuit)	Q4 2025	Q3 2028	Q1 2029
CGP3 Processing Circuit (including CGP3, Crusher 3)	Commenced	Q1 2025	Q2 2025
CGP2 Ore Sorter	Q1 2026	Q4 2028	Q1 2029
Standalone Ore Sorting Plant (and supporting infrastructure)	Q4 2025	Q3 2027	Q1 2028

Note 1: The works approval holder has advised that this commissioning phase refers to the mechanical commissioning of specific pieces of plant infrastructure, rather than environmental commissioning as specified in *Guideline: Industry Regulation Guide to Licensing* (2019) that may result in discharge or emissions to the environment.

2.2.1 Extend duration of Works Approval

As part of the draft comment period, the Works Approval Holder advised that schedule of works has changed since the time of the application and submission as detailed in Table 1. Due to this delay in works, the Works Approval Holder has requested an extension to their Work Approval to ensure all works approved can be completed under this instrument.

The delegated officer has considered that as this will reduce future administrative burden on

both the Works Approval and department, that this request is accepted. The Works Approval duration will be extended until April 2031 to ensure all infrastructure will be constructed and ensure adequate timing for time limited operations whilst a licence amendment is assessed.

2.2.2 Construction

Chemical Grade Processing Plant 2 (CGP2) Ore Sorter:

CGP2 was originally approved in 2011 under W4927/2011/1 and construction completed and transferred onto the licence on 30 August 2017 with a capacity of 2.4 Mtpa. This included a three-stage crusher (as shown as 'CR2' in Figure 1).

As part of this amendment, the works approval holder is requesting that an Ore Sorter be incorporated into the crushing circuit that will support a throughput capacity increase from 2.4 to 2.7 Mtpa. A schematic for the operation of the Ore Sorter is depicted in Figure 2.

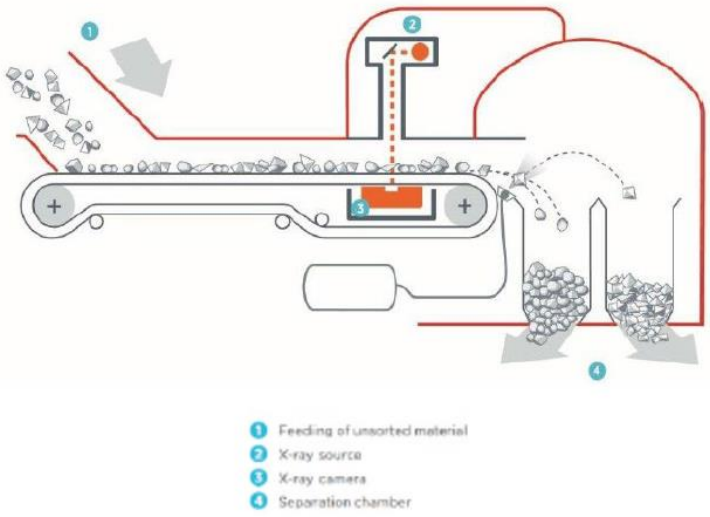

Figure 2: Schematic of operation of Ore Sorter (CGP2 OS and CGP4 OS)

CGP3 Processing Circuit

The only changes to the design of the original CGP3 processing circuit is to reconfigure the infrastructure so that Crusher 3 will only service CGP3 instead of the original design to also service CGP4.

Changes to CGP4 circuit

CGP4 circuit is located to the west of the other equipment and on the other side of Maranup Ford Road (see Figure 1). Under the current approval, CGP4 is to be serviced by the approved Crusher 3 and connected via an overhead conveyor along the embankment of TSF2 and across Maranup Ford Road. The works approval holder has advised that the chemical grade wet plant circuit has been optimised to improve product grade and recovery and will be similar to the other chemical grade plants currently in operation. The main modification being the replacement of conventional float cells to tank cells to reduce process inefficiencies. The flow diagram of CGP4 is shown in Figure 3.

As part of this amendment, the works approval holder is requesting authorisation to construct an additional crusher (Crusher 4) for the purpose of servicing CGP4. Under this new approval, Crusher 4 (two stage crushing and screening circuit) will be constructed just south of CGP3 footprint (see Figure 1), joining with CGP4 by an overhead conveyor. This new crusher circuit will involve two jaw crushers, sizing screen and associated material handling equipment to separate crushed product into desired size. An additional CGP4 Ore Sorter will be constructed

in conjunction with the new Crusher 4 as part of the crushing circuit.

The design feed rate of this two-stage, crushing, screening and ore sorting circuit will be ~500 tonnes per hour (tph).

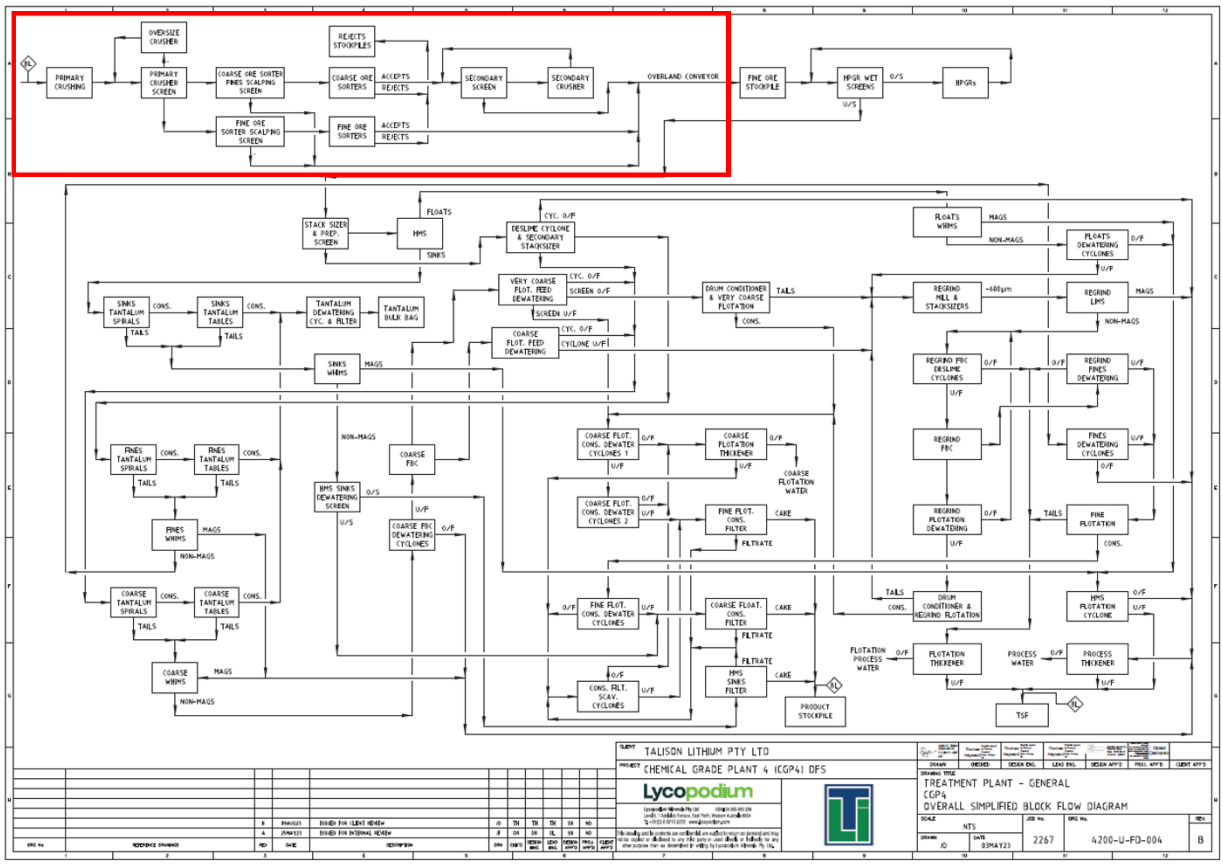

Figure 3: Flow diagram of CGP4 processing. Note: Red box indicates the Crushing and Ore Sorter process

Standalone Ore Sorter Plant

In addition to the updates to the current chemical grade processing circuits, the works approval holder is requesting to construct and operate a separate standalone ore sorter. The purpose of this is to upgrade the quality of the lithium ore stream by rejecting the basalt component (contaminant) whilst allowing the remaining ore to continue on to processing by the chemical grade plants.

Without this, the material would be treated as a waste-contaminated or waste product. The works approval holder intends to utilise the waste byproduct from this process for onsite activities such as road construction. The introduction of this infrastructure is to reduce the amount of waste product that is sent to the premises Floyds waste rock dump (WRD).

This standalone ore sorter plant will operate within a crushing circuit that will enable the simultaneous processing of mixed and low-grade ores with grade ores. Crushing circuit will consist of two jaw crushers, sizing screens and associated materials handling equipment that will separate the crushed product into desired sizes. This will include existing low grade or mixed ore that will be trucked to the standalone ore sorter plant ROM pad and stockpiled. There will be no change to the existing process of loading into crushing circuit process.

This ore sorting circuit consists of two ore sorters in parallel, wash and dry screens and associated materials handling equipment. The ore will be fed onto a conveyor that delivers it onto its respective wash and dry screen. This will produce two separate stockpiles. The washed ore will be reclaimed from the screen by the pad feeder that will help regulate the feed into the

ore sorter. Both the primary and secondary ore sorters will use camera/colour-based sensing technology coupled with pneumatically operated ejection modules to separate the basalt from the lithium ore. The basalt will be ejected as reject in sorters.

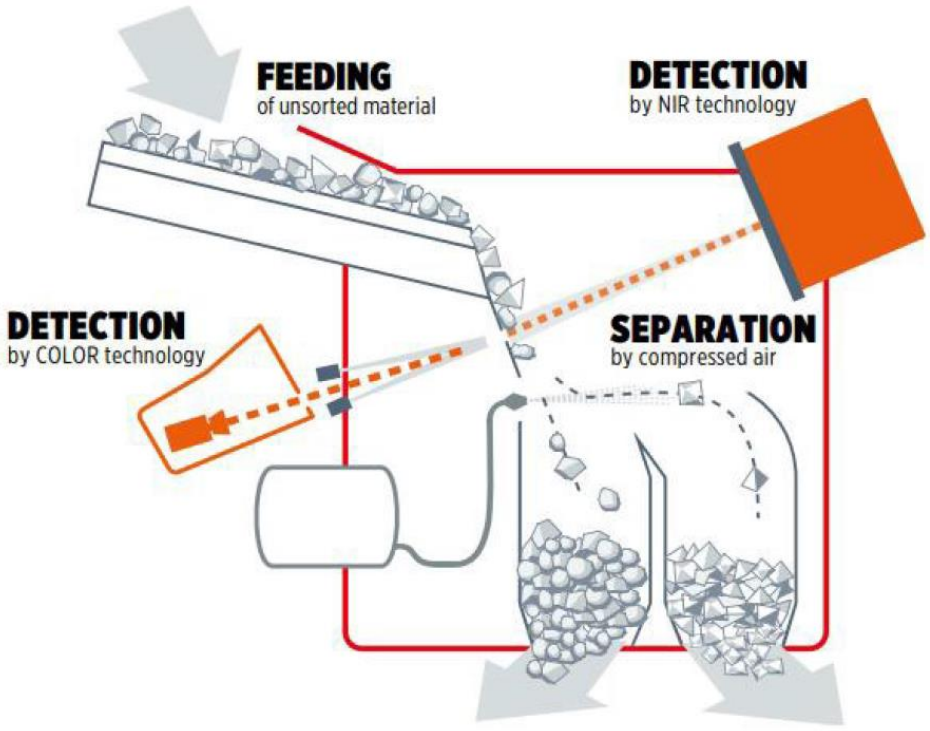

Figure 4: Schematic of operation of Standalone Ore Sorter

Once the ore is sorted, it is transferred to respective stockpiles via conveyors and stackers.

ROM Pad

The current ROM pad that services the CGP2 circuit will be extended (see Figure 1 for final proposed size) so at the final completion of the construction for all this infrastructure, the ROM pad will be able to service all of the infrastructure.

2.2.3 Increase to throughput

In the application form the Works Approval Holder had advised that the increase to throughput (from 11.6 to 12.5 Mtpa) is a result of the inclusion of ore sorters to the CGP2 and CGP4 circuit that will support the increase for throughput of these circuits by 0.3 and 0.6 Mtpa respectively. It is noted that whilst this amendment involves the addition of a new crusher (Crusher 4), as the crusher 3 capacity will be halved as a result of the change to operations (Crusher 3 to now only service CGP3 instead of both CGP3 and CGP4), this does not result in an increase to the throughput. Noting that the infrastructure in the Works Approval has changed since the original granting that approved the 11.6 Mtpa throughput, and with the acknowledgement that it may not be consistent with the current Works Approval, the delegated officer confirmed with the Works Approval Holder the throughputs for each item of infrastructure and have specified these in Table 1. It is confirmed that the total of these throughputs match the requested 12.5 Mtpa.

2.2.4 Time-limited operations

The works approval holder has requested time limited operations (TLO) for all infrastructure within the scope of this application. To reduce the submission burden of amendment applications to the premises operating licence (L4247/1991/13), the works approval holder has requested that the duration of TLO be conditioned to allow for a minimum of 180 days or until

the 31 December of the same each year, whichever is later.

The delegated officer notes that, based on predicted project commencement dates, the operation of some infrastructure within the scope of this application may not begin until after the current expiry of this works approval (1 April 2028).

2.3 Premises dust profile and regulatory setting

As detailed in previous assessments for this premises (via the premises operating licence and individual works approvals), dust emissions associated with premises are generated from various sources and are also influenced by offsite sources. During recent amendments to premises works approvals and licence, the department has sought to consolidate dust management and control strategies to the licence, in recognition that this regulatory instrument encompasses all prescribed activities on the premises and is the most suitable long term regulatory instrument to manage dust emissions.

Activities within the premises boundary that have the greatest potential to contribute to dust emissions include ore processing, blasting, truck movements on mine roads, clearing and rehabilitation works. Of these activities, the Part V works approvals and licences regulate ore processing activities, which includes the operation of crushing and screening infrastructure, all connecting infrastructure and adjacent vehicle movements associated with feeding the crushing and screening infrastructure.

A review of dust management at the premises was conducted via an amendment to the operating Licence (granted on 12 July 2023). The outcome of this review determined the inclusion of several specified actions onto the Licence, with the intent that the results from those actions will provide the department a clearer understanding of the risk associated with dust emissions from the premises and inform the ongoing assessment and application of controls to manage potential impacts to receptors.

In the most current licence amendment granted 1 August 2024, the department conditioned requirements of the Trigger Action Response Plan (TARP), developed by the Licence Holder, to improve dust management response and actions to control dust events. The department also included standalone dust management conditions for dust suppression and dust controls at the premises.

The delegated officer notes that given this regulatory setting, the premises dust emission profile (section 2.3.1), complaints summary (section 0) and dust model (section 2.3.3) encompasses all premises activities and dust emissions.

2.3.1 Current premises dust emission profile

As part of the assessment of this amendment, a desktop review was conducted on dust monitoring results and submitted exceedances of licence trigger and limit values. Table 2 details the number of trigger and limit exceedances from the granting of the original works approval until the amendment where the dust monitoring requirements were moved onto the premises licence.

Table 2: Summary of historical (between 27 April 2020 and 12 July 2023) dust monitoring exceedances

Monitor type and location	Parameter	Trigger value	Limit[2]	Number of reported exceedances[3]	Exceedances attributed to premises activities[4]
Osiris – North[1]	Total suspended Particulates (TSP) 15-minute rolling averages	100 µg/m^3	N/A	629	283
Osiris – Southeast[1]				103	29
TEOM (Southeast)[5]	PM_{10} 24-hour daily average	N/A	50 µg/m^3	2	0

Note 1: Data presented in this table for the Osiris monitors provides a measure of dust loading within the premises, and is used as an indicator only.

Note 2: This limit is determined from the NEPM Air Quality Standard of PM_{10} (24-hour average)

Note 3: These are the filtered data which involved removing exceedances that were associated with erroneous data collection, instrument malfunction etc. The classification of these data is provided by Works Approval Holder.

Note 4: This data involves only those where the exceedances were caused by operation at the premises, or where the potential sources could not have been discounted. The classification of these data is provided by the Works Approval Holder.

Note 5: TEOM trial occurred from May 2020 to August 2020 (the purpose of this trial was to compare data collected from non-Australian Standard Osiris monitors)

Summary of dust review (L4247/1991/13 Amendment Report July 2023[1])

As part of the dust review conducted under the amendment to the operating licence in July 2023, a review of reported dust exceedances was conducted and summarised in Table 3. During this amendment, dust management triggers were updated, where trigger values were calculated in PM_{10} and the correct method to calculate 15-minute rolling averages were specified in the conditions of the licence.

Following the updates in this amendment, which included the installation of Australian Standard monitors, a summary of dust monitoring exceedances are specified in Table 3.

Table 3: Summary of dust monitoring exceedances between 12 July 2023 and 27 June 2024.

Monitor type and location	Parameter	Trigger value	Limit[2]	Number of reported exceedances[3]	Exceedances attributed to premises activities[4]
Osiris (North)[1,6]	PM_{10} 24-hour daily average	100 µg/m^3	N/A	491	281
Osiris (Southeast)				140	23
TEOM (Southeast)		N/A	50 µg/m^3	4	1
TEOM (North)[5]				11	5

Note 1: Data presented in this table for the Osiris monitors provides a measure of dust loading within the premises, and is used as an indicator only.

Note 2: This limit is determined from the NEPM Air Quality Standard of PM_{10} (24-hour average)

Note 3: These are the filtered data which involved removing exceedances that were associated with erroneous data collection, instrument malfunction etc. The classification of these data is provided by Works Approval Holder.

Note 4: This data involves only those where the exceedances were caused by operation at the premises, or where the potential sources could not have been discounted. The classification of these data is provided by the works approval holder.

Note 5: This monitor only began monitoring in December 2023 and the works approval holder advised that this was relocated to authorised location on 20 December 2023.

Note 6: The works approval holder advised a data gap from 15/5/24 and 22/5/24 due to instrument communication malfunction.

[1] (DWER reference *A2188371*)

2.3.2 Complaints summary

In undertaking the risk assessment for the proposed activities, the delegated officer has considered the history of complaints both made directly to the department or reported by the works approval holder.

The Incident and Complaints Management System is an internal department system used to record complaints received and potential non-compliances that require investigation. A data report of this system has identified 11 reported dust complaints in relation to the premises in 2023-2024 reporting period.

The works approval holder is required to maintain and provide to the department a record of complaints received under their operating licence L4247/1991/13.

Complaints summary from annual environmental reports from 2018-2019 to most current submitted in September 2023 (for the premises) is presented in Table 4.

Table 4: Summary of dust related complaints

Reporting period	Number of dust complaints	Main comments (as reported within the AER)
2018-2019	2	Advised that the complaints were investigated, and residents advised of investigation and outcome. The outcomes of these investigations were not provided.
2019—2020	2	The Greenbushes school queried about dust emissions from the premises. It was reported that they were satisfied with the works approval holder's explanation on dust monitoring and management conducted at the premises. The second complaint was advised by the department who had received a complaint for the Department of Education. It was not reported if these complaints were associated with a specific dust event or general concerns regarding dust emissions from the premises.
2020-2021	4	All incident investigations determined that the dust source was identified as TSF2. Dust mitigation measures were implemented including wetting down of TSF2 beach and use of water cart on roads.
2021-2022	4	The works approval holder advised that monitoring data was reviewed for relevant periods (encapsulating the period of complaints lodged) and did not show any breaches of triggers or limits. Timing of complaints could not be linked to a specific dust event or source.
2022-2023	8	Reasons for dust emissions identified as part of investigation by the works approval holder: • Unsealed section of Greenbushes street that is frequented by mine related traffic and contractors; • Drilling of mine pits; and • Clearing activities

2.3.3 Air Quality Impact Assessment

The works approval holder submitted a *Talison Lithium Greenbushes Operations Air Quality Assessment* (ETA, 2023) in support of this amendment application. The report detailed air

quality dispersion modelling for the premises to assess dust impacts compared from current operations and expansion activities.

The expansion activities modelled were:

- Operation of 2 new crushers – Crusher 3 and Crusher 4;
- Operation of 2 new process plants – Chemical Grade Plant (CGP) 3 and CGP4;
- Operation of 3 new ore sorters – Ore Sorter 2, Ore Sorter 3 and Ore Sorter 4;
- Mining up to 27.3 Mtpa of waste rock and ore;
- Beneficiation of up to 12.5 Mtpa of ore; and
- Storage of 15.6 Mtpa of waste rock in Floyds Waste Rock Landform (WRL)

A dispersion CALPUFF model for a period from 1 January to 31 December 2019 was developed and used to predict ground level concentrations at 28 sensitive receptor locations (Figure 5). Operating parameters used to characterise sources were provided by Talison and reduction of emissions estimation from dust management practices used on site was undertaken with reference to the appropriate equations, or factors, from the *National Pollutant Inventory Emission Estimation Technique Manual for Mining Version 3.1.* Two modelling scenarios were considered in the air quality assessment:

- 2023 Base Case: mining tonnage at 15.3 Mtpa and throughput at 7.1 Mtpa; and
- 2028 Scenario 1: mining tonnage at 27.3 Mtpa and throughput at 12.5 Mtpa.

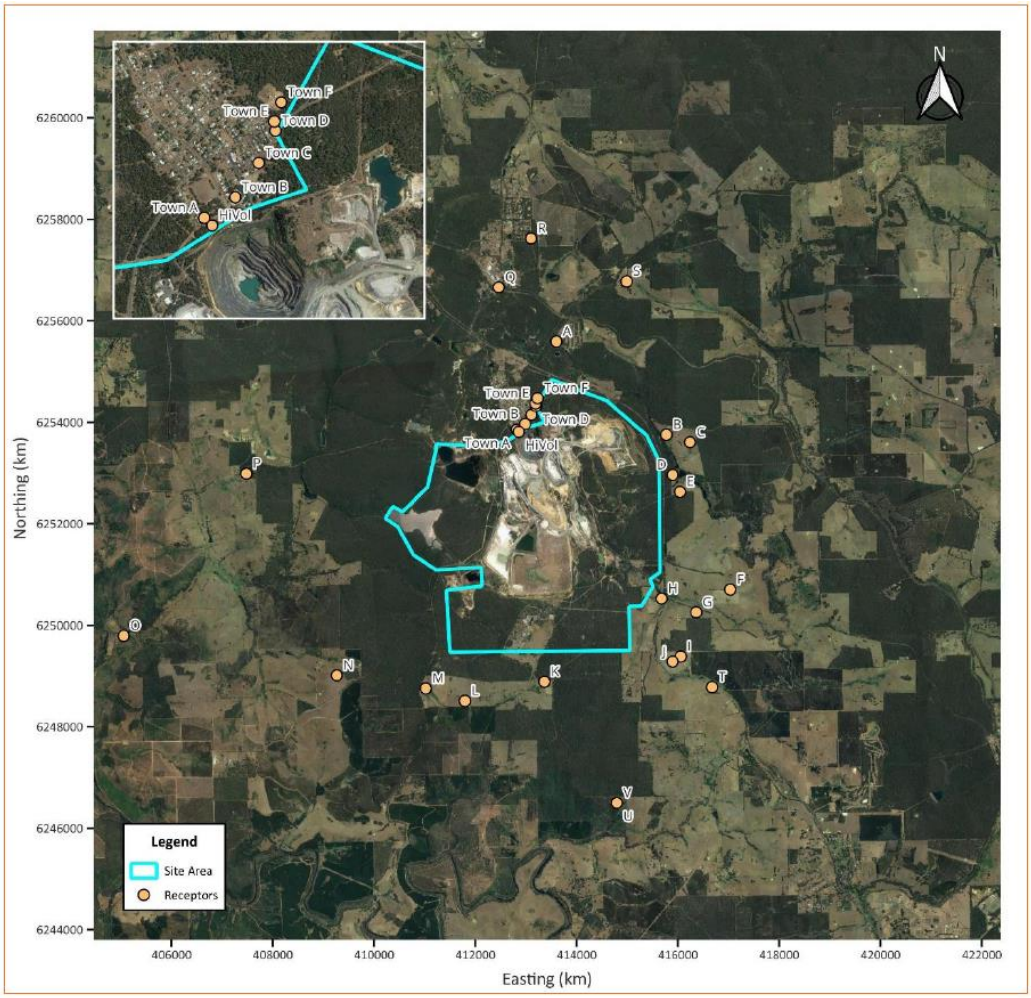

Figure 5: Sensitive human receptor locations used in the dust modelling scenarios

The main conclusion of the modelling indicates that there are increases in the number of exceedances of ambient air quality criteria for Total Suspended Particles (TSP), PM_{10} and $PM_{2.5}$ between the two scenarios.

The exceedances of relevant air quality assessment criteria for the 2023 scenario are:

- In isolation, the maximum predicted concentration of PM_{10} is above the 24-hour criteria of 50 µg/m^3 at all township residents;
- The predicted concentrations for $PM_{2.5}$ are below the 24-hour and annual average assessment criteria both in isolation and cumulatively;
- Both cumulative and in isolation, the predicted TSP concentrations at all township receptors are above the 24-hour average assessment; and
- Dust deposition rates are predicted to be lower than the maximum increase above background criteria.

The exceedances of relevant air quality assessment criteria for the 2028 scenario are:

- Predicted concentration of PM_{10} is above the 24-hour criteria of 50 µg/m^3 at 9 receptors in isolation and 18 receptors cumulatively;
- Both cumulative and in isolation, predicted maximum $PM_{2.5}$ exceeded the 24-hour criteria of 25 µg/m^3 limit at 2 receptors in Greenbushes township, whilst predicted annual average concentrations are below the annual assessment criterion at all receptors in isolation and cumulatively;
- In isolation the TSP concentration exceeds the 24-hour average assessment criteria for all receptors within Greenbushes Township and rural receptor H. Cumulatively, the criteria are exceeded at all township receptors and rural receptors A to J; and
- Dust deposition rates are predicted to be higher than the maximum increase above background criteria for 2 township receptors.

Modelling has indicated that the expansion will likely result in more frequent occurrences of particulate concentrations that are elevated in comparison the relevant air quality criteria at residential receptors.

Department assessment of air quality model

The department completed a technical review of the *Air Quality Assessment* and considers that the modelling assessment generally meets the requirements of department's *Air Quality Modelling Guidance Notes* and the model used in the assessment is generally accepted by Australian jurisdictional authorities for air quality assessments. The department notes that fugitive dust modelling results should not be relied upon as primary evidence when assessing a proposal due to large uncertainty in fugitive dust emissions rate estimation techniques.

The department has therefore assessed the relative change in the estimated levels of the modelling scenarios. As noted within the report, the main conclusion from the model is the increases in ambient concentrations at some of the identified sensitive receptors. Predicted exceedances over assessment criteria in TSP and PM_{10} increased for a number of receptors and the concentration at those receptors were also larger. The 24-hour PM_{10} assessment criterion is exceeded nearly 30% of the time at one receptor. This suggests that substantial improvement of dust management at the site is required, including an appropriate monitoring network around nearby receptors.

At receptor site Town A, the maximum modelled concentration in isolation increases nearly by 100% from 117 µg/m^3 to 206 µg/m^3. The concentration increases further for the cumulative impact modelling.

A comparison between the two scenarios for the same receptor (Town A) indicates that in the

2023 scenario, the cumulative levels of PM_{10} 90th percentile concentration is above the NEPM 24-hour limit, suggesting that approximately 10% of days will exceed this criterion and in the 2028 scenario, the number of exceedances of the PM_{10} criterion at the same receptor can be estimated by which percentile concentration is near the criterion value. For this scenario the 70th percentile concentration is 49 µg/m^3, implying that nearly 30% of days exceed the criterion.

The number of exceedances has not been discussed within the report and the department considers that the assessments attempt to justify the exceedances by noting that the modelling is conservative is generally not an acceptable approach to the interpretation of dispersion modelling results. Instead, if the modelling configuration is considered overly conservative and not realistic, then it should be re-modelled with a more realistic configuration.

The key findings from this modelling are that there will likely be an increase to ground level concentrations in most of the pollutants that were assessed. This potential for increased impacts to sensitive receptors should be matched by improvements to dust mitigation.

The department notes that the modelling assessment did not include silica as a pollutant. In previous assessments (conducted under L4247/1991/13) it has been identified that silica is commonly associated with spodumene ore and may be present in the dust emitted from the premises operations. In acknowledgement of previous advice from the department's air quality branch and from Department of Health (DoH), specified conditions were added onto the licence during the amendment granted 12 July 2023 to sample dried tailings (from TSF1), crushed ore and final product stockpiles for respirable crystalline silica. On 9 May 2024, the works approval holder provided the results from this sampling to the department. Advice from DoH regarding these results are discussed further in section 4.3.2.

2.4 Noise management

The premises is currently authorised under the *Environmental Protection (Talison Lithium Australia Greenbushes Operation Noise Emissions) Approval 2015* to exceed or vary from the assigned noise levels in the *Environmental Protection (Noise) Regulations 1997* (EP (Noise) Regulations). The department's Environmental Noise Branch (ENB) has confirmed that a renewal for this approval, which is set to expire on 27 February 2025, has been received and is under review. As per clause 5(2) of the current Regulation 17, if a further approval is applied for within 1 year prior to the expiry, then the approval continues to operate until the Minister grants or refuses to grant, the further approval.

Summary of previous noise assessment (2022):

In the previous amendment granted on 21 December 2022, the department sought justification from the works approval holder for the change in noise bund design and deemed it acceptable. It was noted that the acoustic assessment (Herring Storer Acoustics, 2022) did not include the operations of CGP4 and determined that this design may not be considered adequate to manage noise emissions from cumulative premises operations in the future, when CGP4 is operational.

Noise modelling (Herring Storer Acoustics, 2023)

The works approval holder engaged consultants Herring Storer Acoustics (2023) to conduct an acoustic assessment on the expected noise levels as a result of the proposed expansion (this amendment application). The noise model provided scenarios for the isolated processing operations and the cumulative levels including the mobile mining fleet. The program 'SoundPlan' was used to model the expected noise levels from the proposed expansion activities by using noise monitoring data from current mining operations (conducted on 3 May 2022).

The Regulation 17 exemption allows noise emission to exceed or vary from the assigned noise levels in the EP (Noise) Regulations. The works approval holders current Regulation 17 allows the approved levels detailed in Table 5.

Table 5: Talison Lithium Mine Pty Ltd Regulation 17 Noise levels

Type of premises receiving noise	Time of day	Approved level (dB)	
		$L_{A\ 10}$	$L_{A\ max}$
A highly sensitive area	0700 to 1900 hours all days	53	71
	1900 to 2200 hours all days	51	69
	2200 to 0700 hours all days	50	68
A noise sensitive premises other than a highly sensitive area	All hours	60	80
Commercial premises	All hours	60	80
Industrial and utility premises	All hours	65	90

The maximum of the $L_{A\ 10}$ values modelled for a highly sensitive receptor (area) was 50dB which the works approval holder considers demonstrates compliance with approved levels in the Regulation 17 for the strictest level (50dB during nighttime hours). Whilst the works approval holder states that this noise level is primarily due to the mobile mining fleet, the delegated officer considers it relevant for the purpose of monitoring and managing noise at the premises and in line with their approval under EP (Noise) Regulations.

The delegated officer received technical advice from the department's ENB who determined the model provided to demonstrate predicted noise levels was suitable and the methodology to reach the conclusion appeared appropriate and accurate. They agreed that the conclusions of the model that indicated noise levels will not exceed assigned levels in the current Regulation 17 and proposed expansion activities could be managed in a manner to comply with these levels.

No additional controls were proposed for noise emissions as part of this works approval amendment. Additional information was sought from the works approval holder to confirm that the current bund design is still considered sufficient and consistent (in the scope of this expansion) and in line with clause 7(1) of their Regulation 17 that requires them "to take all reasonable measures to reduce noise emissions from the mine site".

In response to this, the works approval holder advised that the revised noise modelling indicated that the highest cumulative noise levels were attributed to the mobile mining fleet and the implementation of the Noise Management Plan is applicable to all machinery, equipment and activities on site and is evidence of the works approval holder's compliance with the clauses of the Regulation 17, and that construction of the original noise bund will serve as protection to human receptors in the town of Greenbushes.

ENB confirmed that the matter of whether the approval holder has taken all reasonable measures to reduce noise emissions and if any additional mitigation measures that are practicable or reasonable should be implemented will be subject to detailed examination during the assessment for the renewal.

Recent Annual Report (Talison, 2024)

The works approval holder has submitted their most recent annual noise report as required under clause 10(1) of their Regulation 17 approval on 28 March 2024.

The works approval holder submitted the results from noise loggers:

- Logger NM11 (south of premises) did not record any exceedances of the Regulation 17

approved levels;

- Logger NM6 (located within township of Greenbushes) did not record any exceedances of approved L_{A10} levels and two exceedances of approved $L_{A\ max}$ levels which were not attributed to activities associated with the premises; and
- Logger NM9 (located within township of Greenbushes) recorded one exceedance of approved L_{A10} levels which was not attributed to activities at the premises and did not record any exceedance of approved $L_{A\ max}$ levels.

Regulation 17 renewal

The delegated officer has considered the information above, and in the context of the current renewal of the Regulation 17, has determined that noise emissions will be adequately assessed and assigned levels reviewed as part of this process. Regulation 17 is considered the primary approval for noise emissions from the premises, and therefore the assessment of cumulative noise emissions from the proposed expansion will be deferred to the renewal process. The delegated officer notes that all activities approved under this works approval are subject to the current assigned levels until a determination has been made on the renewal. It is also noted that pending the renewal of the Regulation 17, noise control for the premises (and under this works approval) may change to be in accordance with the updated renewal.

3. Legislative context

3.1 Mining Act 1978

On 13 March 2024, the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised that the construction works requested under this application have been incorporated into Mining Proposal REG ID 122334 (under assessment by DEMIRS).

3.2 Part IV of the EP Act

The proposal for mine expansions activities at the existing premises were referred to the Environmental Protection Authority (EPA) under section 38 of the EP Act and assessed (Assessment No: 2172) at the level of Public Environment Report (PER). The EPA released its report and recommendation for the project (EPA Report 1635) on 8 May 2019 (EPA, 2019). The Ministerial Statement (MS) 1111 was published on 19 August 2019 (OAC, 2019).

The approved proposal authorised the development and operation of additional infrastructure for the processing of ore. Key environmental factors that were considered in this assessment were:

- Terrestrial fauna;
- Flora and vegetation;
- Terrestrial environmental quality and inland waters;
- Air quality; and
- Social surroundings.

The works approval holder is required to implement the Light Management Plan under the MS 1111 which requires them to undertake construction works are to be undertaken predominantly during daylight hours, avoiding construction works at night, where practicable. Where night works are required, lighting design will ensure illumination is directed away from receptors and nearby public roads. Light emissions have been addressed under the Part IV assessment and conditioned under MS 1111. Therefore, light emissions will not be considered further as part of this assessment.

The existing works approval W6283/2019/1 considered the outcomes of EPA Report 1635. The changes proposed in this amendment were not referred to the EPA and the works approval holder has advised that the scope of this application is consistent with the existing MS 1111.

During the assessment for this application, it was identified that the addition for Crusher 4 is not entirely consistent with the current MS 1111 which approved "an additional crusher" as part of the proposal i.e. the singular Crusher 3.

3.2.1 Parallel Approval

The WA Government has progressed legislative reforms to the EP Act to remove the previous restriction under s.41(3) and enable Decision Making Authorities to make decisions in parallel to an environment assessment process under Part IV of the EP Act. Due to the reforms, the department has the option to parallel approve related Part V works approval or licence applications, while the Part IV process is completed.

Decisions made in parallel to a Part IV assessment do not have the effect of authorising a proposal to be implemented. Proposals are still not to be implemented before authorisation under s.45 of the EP Act occurs.

On 16 December 2024, the Works Approval Holder submitted a section 45C under the EP Act, which among other amendments, requested to revise the MS 1111 to allow "additional crushers".

In accordance with the Parallel Decision-Making Policy, the department determined that crusher 4 be included in the works approval, under the Parallel Approved decision-making pathway.

As above, the decision to parallel approve crusher 4 does not authorise the Works Approval Holder to commence works on crusher 4 until approval is obtained under Part IV of the EP Act.

4. 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.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 6 below. Table 6 also details the proposed control measures the Works Approval Holder has proposed to assist in controlling these emissions, where necessary.

Table 6: Works Approval Holder controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction / installation of infrastructure and equipment	Air/windborne pathway	<u>Existing controls:</u> • Implementation of Dust Management Plan (2022), noting that the works approval holder has advised that there will be an updated version to incorporate the Trigger Action Response

Emission	Sources	Potential pathways	Proposed controls
	Earth works associated with extension of ROM pad and site preparation		Plan (as required by conditions of L4247/1991/13), with relevant points: ○ Applying dust suppressing stabilisers on appropriate surfaces and mobilisation of additional water carts to suppress dust; ○ Real-time TSP and PM10 monitoring at the north-western and south-eastern premises boundary; ○ Plan activities and implement management actions with consideration of existing conditions, weather forecast and dust monitoring program (noting that trigger actions are also conditioned in premises licence L4247/1991/13); ○ Cease non-essential activities during excessively windy, high-risk conditions, if dust cannot be adequately controlled; ○ Review clearing and earthworks program schedule to minimise the period where surfaces are bare/open; and ○ Conduct investigation into the cause and potential contributing sources and implement appropriate management actions. <u>Existing monitoring regime in relevant Licence L4247/1991/13:</u> • Monitoring of ambient air quality; • Ambient air quality trigger and limit values; and • Management actions for trigger exceedances including investigation of dust source, implementation of immediate dust abatement measures, application of dust suppression, ceasing of activities.
Noise			*No new controls proposed by works approval holder.* <u>Current works approval controls:</u> • Construction of noise bund required by 31 March 2025.
Contaminated and sediment laden stormwater		Surface water runoff	*None proposed.*
Hydrocarbons		Direct discharge to land from spills	*None proposed.* <u>Controls from existing works approval:</u> • If hydrocarbon release occurs, it will be controlled, contained and removed using spill kit and other absorbent material. Contaminated soils will be collected and disposed in site bioremediation area; • Hydrocarbon and chemical spills reported internally as environmental incident, with larger spills with potential to cause contamination reported to the department; • Mobile equipment operated and serviced in accordance with manufacturer's specifications, with servicing only undertaken within designated servicing and refueling facilities.

Emission	Sources	Potential pathways	Proposed controls
Time limited operation			
Dust	• CGP2 Ore Sorter; • CGP3 circuit (CGP3 processing plant, Crusher 3); • CGP4 circuit (CGP4 processing plant, OS, Crusher 4, overhead conveyor) • Standalone OS	Air / windborne pathway	*Conveyor:* • Enclosure plus sprays or dust extraction *Ore Sorters:* • Enclosed with dust extraction; • Sprays; • Operating manual which includes cleaning schedule *Crushers and CGP processing circuit:* • Jaw crusher – enclosed with dust extraction (bag houses) (existing control) and more frequent cleaning inside enclosure; • Cone crusher – enclosed with dust extraction (bag houses) (existing control) and more frequent cleaning inside enclosure; • Concentrate stockpiles – 2/3 side enclosed (existing control); improved spillage control / ensure storage only occurs within reasonable limits to prevent creep outside areas; ensure volumes allowed for are correct (i.e. enclosures are adequately sized); • Hopper – dust suppression sprays; • Crushed / fine ore stockpiles: sprinklers at top of chute, use of water cart, telescopic chute, moisture between 5-8% (existing controls) and partial/full enclosure and additional sprays to condition the middle region of stockpile; • High Pressure Grinding Roller (HPGR): removal of dust that lands on the ground (existing control) and operating manual which includes cleaning schedule and dust extraction. <u>Existing controls:</u> • Implementation of Dust Management Plan as discussed above and existing proposed dust controls for CGP3, Crusher 3 and CGP4 as approved in original works approval. <u>Existing monitoring regime in relevant Licence L4247/1991/13:</u> • Monitoring of ambient air quality; • Ambient air quality trigger and limit values; and • Management actions for trigger exceedances including investigation of dust source, implementation of immediate dust abatement measures, application of dust suppression, ceasing of activities.

Noise			*No new controls proposed by works approval holder.*
			<u>Existing controls:</u>
			• Implementation of Noise Management Plan (NMP), with relevant points:
			  ○ Continuous noise monitoring to determine compliance against assigned noise levels, in accordance with Regulation 17 of the Environmental Protection (Noise) Regulations 1997;
			  ○ Undertook predictive noise modelling for the project expansion, including the operation of infrastructure within

Emission	Sources	Potential pathways	Proposed controls
			the scope of this application; ○ Maintain noise bund that was established and construct a noise bund extension according to findings of predictive noise modelling; ○ Implement buffer zone on Floyd's waste rock landform to reduce noise emissions to receptors to the east of the premises; ○ Mobile equipment used for construction and operated and serviced in accordance with the manufacturer's specifications; and ○ Construction works undertaken predominantly during daylight hours, avoiding construction works at night, where practicable. <u>Current works approval controls:</u> • Construction of noise bund extension required by 31 March 2025.
Contaminated and sediment laden stormwater	Operation of CGP4 circuit (including CGP4, CGP4 OS, Crusher 4 and associated overland conveyor and stockpiles):	Surface water run off	• CGP4 previously shared a surface water drainage design with CGP3 in the original design. ○ Drainage plan includes open drains that direct collect water to two stormwater basins with capacities of 3371m^3 and 9473m^3 which have been designed for a storm event using 1% AEP for a 3 hour rainfall duration. From the stormwater basins, water will be pumped into Clear Water Dam as part of the mine water circuit for re-use in processing and mine operations; • The general plant area (for CGP4 OS and Crusher 4) will be graded to fall from northwest to southeast. The stormwater will be captured in a perimeter drain on the eastern boundary that will be directed to a shared (with Standalone OS) stormwater. This basin will have a capacity of 20,021m^3 designed for a storm even using 1% AEP for a 3-hour rainfall duration. Stormwater from this basin will be pumped to the mine water circuit through the decant pond in TSF2.
	Operation of CGP2 Ore Sorter and associated activities (i.e. stockpiles)		This infrastructure will be constructed on the footprint of the existing CGP2 area where there is existing surface water control infrastructure (under L4247/1991/13)
	Operation of CGP3 circuit (including CGP3 and Crusher 3 and ROM pad, stockpiles)		CGP3 construction is already authorised under the existing works approval and includes surface / stormwater infrastructure for the footprint area. These include: • Ponds to be constructed with sufficient capacity to contain 1% annual exceedance probability (AEP) rainfall events and are clay lined to facilitate sediment cleaning; • Drainage infrastructure will be integrated into the premises' mine water circuit to allow for contaminated pond water to be contained appropriately at the premises. ***This stormwater infrastructure for this circuit is already included within the works approval. No changes through this amendment and will not be reassessed.***

Emission	Sources	Potential pathways	Proposed controls
	Operation of Standalone Ore sorter and associated activities (i.e. stockpiles)		The general area will be graded to drain towards perimeter drains that lead to a stormwater basin (shared with CGP4 OS and Crusher 4 area) located on the southern west corner of the plant area
	Use of the expanded ROM pad		ROM pad graded to encourage surface water drainage towards sumps located on the southern boarder of the ROM pad and returned to mine water circuit.
Hydrocarbons	Operation of infrastructure / equipment	Direct discharge to land from spills	Works approval holder has advised that this amendment has no significant change to fuel storage volumes or usage rates and that existing controls detailed within the works approval will be applied to these amendments. <u>Existing controls from original works approval:</u> • Hydrocarbons will be stored within secondary containment (i.e. bunding), which meets the AS 1940:2017 standard; • If hydrocarbon release occurs, it will be controlled, contained and removed using spill kit and other absorbent material. Contaminated soils will be collected and disposed in site bioremediation area; • Hydrocarbon and chemical spills reported internally as environmental incident, with larger spills with potential to cause contamination reported to the department; • Mobile equipment operated and serviced in accordance with manufacturer's specifications, with servicing only undertaken within designated servicing and refueling facilities.

4.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors and contractors of the Works Approval 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 7 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 7: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Residents	• 21 identified individual sensitive receptors close to the mine, with half located <1 km from the prescribed boundary; • Nearest resident (within Township) 1.5 km NW from CGP3. • Southern receptors are approximately 255 m to 1.7 km to the south-east boundary;
Greenbushes Primary School	• 23 m north of prescribed premises boundary; • 1.65 km north of CGP3.
Environmental receptors	**Distance from prescribed activity**
Native vegetation	Native vegetation surrounding the premises consists of forest and woodland comprising *Eucalyptus marginata*, *Corymbia calophylla* and *E. wandoo*. Directly west of CGP4.
Greenbushes State Forest (Class A State Forest management by DBCA)	Located in the western half of the premises and surrounding the premises boundary – directly west of CGP4. ***Assessed in EPA report and regulated under MS1111.***
Conservation significant flora	Flora surveys (Onshore Environment, 2012 and 2018a) identified several conservation significant flora surrounding / within premises including *Acacia semitrullata* (P4) and *Caladenia harringtonine* (T). ***Assessed in EPA report and regulated under MS1111.***
Conservation significant fauna	Several conservation significant fauna sighted (Biologic 2018) within 800m west of CGP4 including Chuditch (VU), Wambenger Brush-tailed Phascogale, Quenda (P4), Western Brush Wallaby (P4), Western Ringtail Possum (CR), Baudin's Cockatoo (E), Carnaby's Cockatoo (E) and Forest Red-tailed Cockatoo (VU). ***Assessed in EPA report and regulated under MS1111.***
Blackwood river	Several tributaries to Blackwood River run through and adjacent to the premises. Blackwood River and tributaries surround the premises in the east, west and south. A tributary of the Blackwood River (Woljenup Creek) borders the southern boundary of the premises.
Aboriginal Heritage places	Blackwood River (ID 20434) was identified as a Registered site of mythological significance in association with *Waugal* beliefs.
Cowan Brook, Cowan Brook Dam and sub-catchment	Western edge of prescribed premises boundary (brook connects Cowan Brook Dam located within the premises and Norilup Dam) – directly north-west of CGP4 location.
Norilup Brook inc. Norilup Dam and sub-catchment	Approximately 2 km to the west south-west of the premises.

4.2 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 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Works Approval Holder has proposed mitigation measures/controls (as detailed in Section 4.1), these have been considered when determining the final risk rating. Where the delegated officer considers the Works Approval 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 Works Approval Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 8.

The Revised Works Approval W6283/2019/1 that accompanies this Amendment Report authorises construction and time-limited operations. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises i.e. category 5 activities. A risk assessment for the operational phase has been included in this Amendment Report, however licence conditions will not be finalised until the department assesses the licence application.

Table 8. Risk assessment of potential emissions and discharges from the Premises during construction and operation

Risk Event					**Risk rating[1]** **C = consequence** **L = likelihood**	**Works Approval Holder's controls sufficient?**	**Conditions[2] of works approval**	**Justification for additional regulatory controls**
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Works Approval Holder's controls**				
Construction								
Construction / installation of: • Crusher 4 • CGP 2 Ore sorter (OS); • CGP 4 Ore sorter (OS); and • Overland conveyor; • Standalone ore sorter	Dust	**Pathway:** Air / windborne pathway **Impact:** to health and amenities	Town of Greenbushes and other residential receptors (nearest resident – 1.5 km NW of CGP3)	Refer to section 4.1.1	**C =** Minor **L =** Unlikely **Medium Risk**	Y	Condition 1 [Table 1]: construction requirements	The delegated officer considers that dust emissions during construction activities are short-term in nature and the existing requirements for dust suppression and construction activities within the works approval holder's Dust Management Plan. Additionally, any dust emissions as a result of construction activities are expected to be captured by the premises dust monitoring network and appropriately managed if the levels are exceeded. The delegated officer therefore considers that no additional regulatory controls are required, and construction of this additional infrastructure can be adequately managed by existing and proposed controls.
	Noise			Refer to section 4.1.1	**C =** Minor **L =** Possible **Medium Risk**	Y	Condition 1 [Table 1]: construction of noise bund	The delegated officer notes that the premises currently has an *Environmental Protection (Noise) Regulations* exemption under their Regulation 17 approval and that noise emissions are regulated under this approval. The delegated officer considers noise emissions from construction are not ongoing and will only occur during construction activities. The works approval holder is still required to comply with conditions of their Regulation 17 approval, and therefore has determined that no additional regulatory controls are required.
	Contaminated and sediment laden stormwater	**Pathway:** Surface water run off **Impact:** contamination of native vegetation and surface water impacting ecological health	Greenbushes Forest (directly west of CGP4) Surface water bodies / creek lines (Cowan Brook directly NW of CGP4)	Refer to section 4.1.1	**C =** Minor **L =** Rare **Low Risk**	N/A	N/A	With consideration that the scope of infrastructure (not those previously assessed and authorised under this works approval) will be constructed within the existing processing area. The delegated officer considers that impacts of contaminated or sediment laden surface water are unlikely to be significant during the construction process.
	Hydrocarbon	**Pathway:** Direct discharge to land from spills **Impact:** contamination of surface water impacting ecological health	Surface water bodies / creek lines (Cowan Brook directly NW of CGP4)	Refer to section 4.1.1	**C =** Minor **L =** Rare **Low Risk**	Y	N/A	The delegated officer has determined that the works approval holder's existing controls to manage and clean up hydrocarbon / chemical spill are sufficient in managing the risk and no additional regulatory controls are required.
Time-limited Operations								
1. CGP2 OS 2. CGP3 circuit (Crusher 3 & CGP3) 3. CGP4 circuit (Crusher 4 & CGP 4 OS & CGP 4) 4. Standalone OS 5. Supporting infrastructure (incl conveyors & material handling plant; overland	Dust (particulates)	**Pathway:** Air / windborne pathway **Impact:** to health and amenities	Town of Greenbushes and other residential receptors (nearest resident – 1.5 km NW of CGP3)	Refer to section 4.1.1	**C =** Major **L =** Possible **High Risk**	N	Condition 1 [Table 1]: requirements for dust controls Condition 4: improvement works Condition 5: improvement for monitoring network Condition 8 [Table 4]: operational requirements	Refer to Section 4.3.
	Dust (containing RCS, asbestiform or α-spodumene cleavage fragments)			Refer to section 4.1.1	**C =** Severe **L=** Unlikely **High Risk**			

Risk Event					Risk rating[1] C = consequence L = likelihood	Works Approval Holder's controls sufficient?	Conditions[2] of works approval	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Works Approval Holder's controls**				
conveyor); and 6. Feed / Product Stockpiles	Noise			Refer to section 4.1.1	**C =** Moderate **L =** Possible **Medium Risk**	Y	Condition 1 [Table 1]: construction of noise bund & equipment to be enclosed	The delegated officer notes that the premises currently has an *Environmental Protection (Noise) Regulations 1997* exemption under their Regulation 17 approval and that noise emissions are regulated under this approval.
	Contaminated and sediment laden stormwater	**Pathway:** Surface water run off **Impact:** contamination of native vegetation and surface water impacting ecological health	Greenbushes Forest (directly west of CGP4) Surface water bodies / creek lines (Cowan Brook directly NW of CGP4)	Refer to section 4.1.1	**C =** Minor **L =** Rare **Low Risk**	Y	Condition 1 [Table 1]: requirements for surface water drainage around infrastructure Condition 1 [Table 1]: operational requirements for the ponds	The delegated officer considers the works approval holders proposed controls for containing potentially contaminated water from the processing areas is sufficient in managing risks to nearby surface water bodies and vegetation. These proposed controls for drainage and adequate volumes / freeboard of stormwater ponds will be conditioned in the works approval, with no additional regulatory controls required.
	Hydrocarbon	**Pathway:** Loss of containment resulting in direct discharge to land from spills **Impact:** contamination of surface water impacting ecological health	Surface water bodies / creek lines (Cowan Brook directly NW of CGP4)	Refer to section 4.1.1	**C =** Minor **L =** Rare **Low Risk**	Y	N/A	The delegated officer has determined that the works approval holder's existing controls to manage and clean up hydrocarbon / chemical spill are sufficient in managing the risk and no additional regulatory controls are required.

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

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

4.3 Detailed risk assessment for dust emissions from operation of equipment under time-limited operations

4.3.1 Overview of potential risk events

The operation for the infrastructure as part of the mine expansion and the increase to throughput has the potential to increase dust emissions from the premises which has the potential to adversely impact the amenity and health of residential receptors surrounding the premises.

The assessment will involve the cumulative operations of:

- CGP3 circuit – including: CGP plant and Crusher 3;
- CGP4 circuit – including: CGP plant, Crusher 4, Ore sorter and overhead conveyor;
- CGP2 Ore Sorter; and
- Standalone Ore Sorter.

4.3.2 Emission characterisation

The characteristics of the dust emitted (including particle size, composition and colour) will influence the potential health and amenity impacts, such as when it contains toxic materials that can be inhaled or ingested.

Current available data from monitoring, indicates levels of PM_{10} dust particles make up at least part of the dust emissions from the premises. As discussed in section 2.3.1, following the installation of the Australian Standard dust monitor at the receptor (in Greenbushes Town) there have been several exceedances of the National Environment Protection Measure (NEPM) 24-hour PM_{10} limit.

As required under the conditions of L4247/1991/13, the works approval holder provided results from specified actions that required sampling of respirable crystalline silica, particle size distribution and particle aspect ratio of crushed ore stockpile, final product stockpile and TSF1 tailings.

A summary of the advice received on 1 July 2024 from DoH is as followed:

- Whilst the product, tailings and ore composition results provide limited information on the public health risk, it can be used to better understand the hazard, including the proportion of inhalable, respirable, fibrous or other hazardous particles. This type of screening may aid in informing air monitoring requirements, including siting of monitor and whether there is a need for further analysis of airborne dust;
- The results indicate that the tailings contain a high proportion of respirable particulates and respirable crystalline silica (RCS) relative to the product and the crushed ore;
- The results support dust management for movement, storage and treatment of tailings and other materials at the site. This is also supported by the predicted particulate exceedances in the air modelling;
- Air quality monitoring data for particulates, asbestos, respirable crystalline silica will be most relevant for assessing public health risks from expansion of operations and it's recommended that the air quality branch reviews siting of monitoring locations; and
- Recommendation to add $PM_{2.5}$ to the monitoring suite.

The Works Approval holder is in the process of fulfilling requirements for dust compositional monitoring under licence L4247/1991/13 that will provide a better understanding on the composition of the dust that is being emitted from the premises. These findings make part of the ongoing dust improvements at the premises and will provide a better understanding on the level

of risk associated with dust generating activities at the premises.

4.3.3 Receptors – description of town of Greenbushes / rural residencies

The health impacts from dust inhalation can be both short-term (acute) and long-term (chronic). Fine dust particles (those in PM_{10} and $PM_{2.5}$ size ranges) that are readily inhaled and can be associated with a range of chronic health effects. Both fine and coarse dust particles can lead to acute health effects (e.g. eye or breathing irritation) and also deposit on surfaces leading to soiling.

Dust emissions can also have impacts on amenity and social surroundings, as well as vegetation, soil and water quality.

4.3.4 Works approval holder controls

Proposed controls by the works approval holder to manage dust emissions from the operation of this new equipment are listed in Table 6.

Dust monitoring and management under L4247/1991/13

As part of this amendment to the works approval, the delegated officer must consider the collective suite of controls under the both the works approval and licence, for both operational infrastructure controls and dust management controls.

Current licence L4247/1991/13 conditions related to management of dust emissions are listed below:

- [Condition 16]: general dust management conditions derived from the works approval holder's Trigger Action Response Plan (TARP);
- [Condition 27, Table 13] requirements for monitoring of ambient air quality parameters from the following monitoring locations (as shown in Figure 6):
  - Non-Australian standard Osiris monitors located in town and south-east of premises for monitoring of Total Suspended Solids (TSP);
  - Australian Standard Tapered Element Oscillating Microbalance (TEOM) monitors located in town and south-east of premises monitoring of PM_{10}; and
  - PM_{10} High-Volume Sampler monitor located in town.
- [Condition 28, Table 14] requirements for monitoring of ambient meteorological conditions (from locations shown in Figure 6) that are involved in subsequent management actions;
- [Condition 29, Table 15] outlines the ambient air quality and meteorological trigger and limit values;
- [Condition 35, Table 19] management actions required in the event of a trigger exceedance including;
  - Investigation of the dust source and actions corresponding to findings;
  - If dust source is identified, implement immediate dust abatement measures, which may include (but are not limited to) ceasing/changing dust-causing activities;
  - Application of dust suppression methods to dust source; and
  - Cease activities if dust cannot be adequately controlled.

  This table was updated in the recent licence amendment to include DWER initiated amendment to incorporate components of the TARP as discussed further below.
- [Condition 36]: requirements for an annual review of the appropriateness and effectiveness of the TARP to adequately manage dust emissions and exceedances at the premises.

Trigger Action Response Plan

The submitted TARP was referred to the department's air quality branch for a technical review. As this refers to a site-wide approach, the assessment and changes to any monitoring and management conditions were conducted under the recent licence amendment granted 1 August 2024. Components of the TARP were incorporated into the existing dust trigger/management responses. It was determined that a continuous review and where necessary, improvement of dust management is required at the premises until it can be verified that the TARP is sufficient in managing dust risks. A new condition was added to the licence that requires the frequent review of the effectiveness of the TARP and the submission of this review to the department.

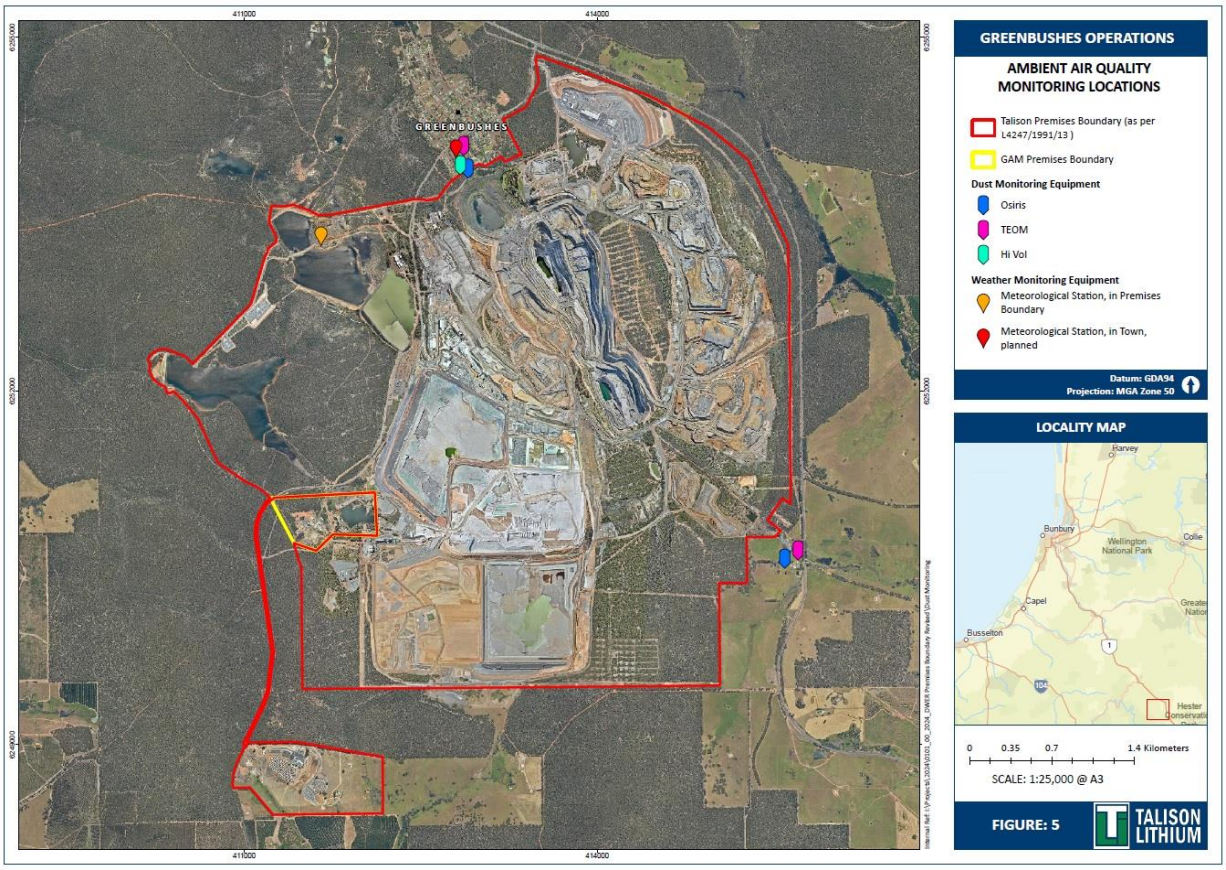

Figure 6: Ambient dust monitoring locations

4.3.5 DWER assessment and regulatory controls

The delegated officer has assessed the following risk:

1. Impact of dust emissions (containing particulates and metals) from time-limited operations of activities to impact health and amenities of nearby sensitive human receptors within township of Greenbushes (1.5 km NW from CGP3) and surrounding rural receptors.

   The consequence rating for the dust emissions impacts to health and amenities is considered to be **major** due to the health impacts from dust inhalation to human receptors, and the current unknown surrounding the composition of the dust that could further exacerbate health concerns related to dust particulates possibly containing contaminants of concern.

   In rating for the likelihood of this risk event, the delegated officer considered the findings from the dust model (section 2.3.3), current number of complaints (section 0) and recent dust data and exceedances (section 2.3.1) from the premises. With consideration to the current dust profile, the operation of these additional infrastructure has the potential to increase dust emissions from the premises that have already reported exceedances of

health criteria within the town. Therefore, the likelihood of cumulative dust emissions impacting health or amenity of sensitive receptor is **possible**.

Given that public health criteria have been exceeded at nearby receptors, the delegated officer has determined that the cumulative dust emissions in a scenario where additional potentially dust producing emission activities and the increase to throughput (processing of ore) could have a mid-level adverse health effect and local scale high-level impact on the amenity of sensitive receptors and considers that the overall risk rating for impacts to health and amenities of human receptors is therefore **high**.

2. Impact of dust emissions (potentially containing RCS, asbestiform or α-spodumene cleavage fragments) from time-limited operations of activities to impact health and amenities of nearby sensitive human receptors within township of Greenbushes (1.5 km NW from CGP3) and surrounding rural receptors.

   As raised during the dust review, the composition of the dust has the potential to increase the risk of emission to sensitive receptors. Although there is limited information to suggest that there are health risks associated with α-spodumene cleavage fragments, there are known health risks associated with RCS and asbestiform material. For the re-mining of TSF1, the delegated officer considered that the consequence posed from these contaminants is severe. Noting the still limited information on composition, the delegated officer will maintain the precautionary approach and considers the consequence to remain **severe.**

   Whilst preliminary reports indicate that material in the processing circuit, and relevant to the activities under this amendment, appear to have lower proportions of respirable particulates and RCS relative to tailings, the delegated officer considers that the level of dust control (such as suppression, extraction, enclosed processing) is more sufficient and effective than that available for TSF1 mining, and therefore whilst there is still limited information on the composition, the likelihood will be maintained at **unlikely.**

   The overall risk rating for potential impacts to human health and amenity is therefore **high.**

Additional regulatory controls

In consideration of the risks associated with dust emissions from premises activities, including from the works proposed in this amendment, the delegated officer considers that additional regulatory controls are required. As detailed in section 2.3, dust management and control implementation take into consideration existing and proposed controls associated the works approval as well as controls applied within the premises licence, set against the context of potential impacts to nearby human receptors.

Where necessary and appropriate, controls for dust are captured via the premises licence and individual works approvals. Where this occurs, consideration is given to the collective suite of controls or strategies in place to manage dust risks. Given this, control outcomes are served via a number of instruments (approach taken and control applied) in regulating premises activities.

Relevant for this assessment, the delegated officer notes that the dust modelling provided demonstrates an ongoing and increased likelihood of dust impacts to nearby receptors, recognising however that this modelling is inclusive of premises activities beyond that of the scope of this assessment. The delegated officer recognises though, the activities proposed under this works approval (including time limited operations) will likely contribute to premises dust loading. Therefore, it is considered necessary that additional controls are proposed that incorporate improvements to dust management for infrastructure within this works approval, but also to broader prescribed premises activities, noting the collective influence to dust emissions.

To support the further improvement of dust management at the premises, the delegated officer has included additional regulatory conditions to the works approval, as detailed below. The delegated officer has considered these conditions necessary given that modelled scenarios and expansion works indicate an increase to dust levels and that the implementation of these

improvements through this amendment is expected to mitigate the level of modelled increase prior to the construction and operation of the infrastructure under this works approval (timeline of expansions detailed in Table 1).

Improvement requirements

The delegated officer has considered the current dust emission profile at the premises and the potential impacts of the expansion activities to exacerbate these conditions and has determined that further investigation into dust sources and control opportunities is required. The works approval holder is required to conduct a strategic review of significant dust sources at the premises, noting that additional or improved dust mitigation strategies will be needed to control modelled dust increases. The delegated officer considers that there remain opportunities for further improvements to dust management and control infrastructure beyond that proposed by the works approval holder as part of this amendment.

The condition requires the submission of an improvement plan for dust controls for ore processing facilities and associated infrastructure. The works approval holder is required to review all infrastructure to determine the most suitable locations for additional dust control. As part of this review, the works approval holder is also required to provide a Dust Control Equipment Inventory, an itemised list of dust control infrastructure at the premises to support the ongoing review of dust management and mitigation.

Air quality monitoring network

As noted in the assessment, modelling data suggests that premises dust emissions are expected to increase, and dust emissions from premises activities, and those associated with this amendment present a high risk to receptors. The delegated officer considers that dust source identification and delineation within the premises boundary will enable dust control efforts to be directed in the most efficient manner and assist with the identification and implementation of additional controls in a targeted manner. Improvements to the premises dust monitoring network are considered an appropriate requirement to enhance the data produced by the monitoring network that will inform short- and long-term decision making around dust control implementation.

Based on advice received from the department's air quality experts, monitors associated with trigger actions are better located within or on the boundary of the premises to capture dust events before they impact receptors.

To better understand the source of high dust emissions for the purpose of resolving uncertainty, monitoring of dust concentrations near to the source, along the pathway, at the receptor and background locations is required. Source monitoring is particularly useful to identify trends in operational activities that most significantly contribute to high dust events.

Controls have been added to the works approval to require the works approval holder to investigate and determine suitable locations for additional dust monitors, and establish suitable and appropriate implementation timelines.

Applicant proposed controls

The delegated officer considers that whilst the works approval holders proposed controls are consistent with standards of managing dust from processing activities, the use of these measures (dust extraction and dust suppression) should be operated at all times when the equipment is in use, and as a result, have been conditioned in the works approval.

4.4 Request for time-limited operations flexibility

The delegated officer has determined to accept the request for more than the usual 180 calendar days of TLO period detailed in section 2.2.4 of this report.

The delegated officer considers the extension to time limited operations past the 180 days will streamline the application and assessment burden on the department and the licence

amendment application process. As noted in section 2.2.3, certain infrastructure may not be constructed or commissioned before the expiry date of the works approval. Should this occur, the works approval holder will may need to consider an amendment to the premises licence to allow the operation of this equipment.

5. Consultation

Table 9 provides a summary of the consultation undertaken by the department.

Table 9: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 20 February 2024.	One public submission received by the department with the following comments: a) Concerns regarding dust and noise from the overland conveyor between Crusher 4 and CGP4; and b) Concerns regarding the lack of any new noise controls to be proposed as part of this amendment. Noting that although modelling indicate that there will be no significant change, it does not appear that the works approval holder is doing enough to minimise noise emissions.	a) The works approval holder has proposed to include additional controls to have the conveyor enclosed. As part of the risk assessment, the delegated officer has determined this to be sufficient to manage emissions (dust and noise) from operations of this conveyor. b) As detailed in section 2.4, the delegated officer has deferred the assessment of noise from the expansion to the Regulation 17 renewal noting that it is the primary approval for noise at this premises and will consider cumulative impacts to sensitive receptors.
Local Government Authority (Shire of Bridgetown-Greenbushes) advised of proposal on 20 February 2024.	None received.	N/A
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal on 20 February 2024.	DEMIRS provided a response on 13 March 2024 confirming that the proposed works under this application have been incorporated into Mining Proposal Reg ID 122334 which is still currently under assessment. DEMIRS have no comments regarding the time-limited operation for infrastructure, noting emissions from these activities are regulated under Part IV and Part V of the EP Act.	Noted. The department recognises that the works approval holder is required to comply with all regulatory requirements under separate legislation and approvals.
Department of Health (DoH) advised of proposal on 20 February 2024.	DoH provided a response on 12 March 2024 with the following comments: a) Requests that DWER review the modelling submission and provide confirmation to DoH regarding DWER's acceptance of the modelling; b) Modelling indicates exceedance under both current and expanded operations, with some predicted levels significantly above the relevant guideline value which implies an inability for current and expanded operations to comply with licence conditions under the modelled emission controls; c) Prediction of significant exceedances predicted in town, which appears to contradict the previous (GHD, 2022) air quality assessment – which primarily identified exceedances to receptors southeast of the mine; d) Recent monitoring data and/or evidence of compliance with licence conditions under existing operations have not been provided. This makes it difficult to assess whether the modelling is truly representative and limits DoH's inability to comprehensively review the suitability of the submission for current and proposed operations; e) Lack of assessment of metals in dust and respirable crystalline silica, consideration of these in this submission; f) Identification of potential exceedances of $PM_{2.5}$ indicates that direct of monitoring of $PM_{2.5}$ is warranted; g) Modelling relied on default emission controls and suggested reductions with no commentary on the suitability of these defaults representing current and future dust controls at the site; h) Discrepancies in the scope of the modelling were noted in the report that require clarification (e.g. reference to the modelling having assessed operations at both 9.5 Mtpa and 12.5 Mtpa were variably noted); i) Whilst modelling concluded that the inputs were conservative, there was no attempt to input less sensitive parameters and there was no sensitivity analysis noted in the report; j) The submission lacked detailed conclusions and recommendations for further action to mitigate the predicted particulate emissions. A comprehensive assessment of how the dust mitigation at the site will prevent the predicted emissions was expected yet was not provided;	a) The review of the model was discussed in detail in section 2.3.3. The department considers that the model was generally considered acceptable, noting however certain limitations. This is discussed further within section 2.3.3. b) As noted in section 2.3.3, while the modelling results suggest exceedances, due to the general limitations of modelling for fugitive emissions, a cautious approach to their direct interpretation is warranted. Notwithstanding this, the department has considered the findings of the model, specifically the conclusions of an increase to dust levels as part of the risk assessment. The department has also considered dust monitoring data obtained to date to inform the risk assessment (as detailed in section 4.3). c) The department notes that no comparison was conducted between the two assessments as part of the review, and a comparison between different models is not considered useful in understanding potential dust emissions. It is noted that the dust emitting sources considered in the two assessments were different, particularly with the most recent assessment focussed on the operation of the infrastructure (as part of this expansion), and therefore could be one of the reasons attributed to the differences in results. d) Noted. The department has taken into consideration recent monitoring data as part of the assessment, along with complaint history and the information presented in the dust model. e) Noted. Modelling of dust was specific to PM_{10}, $PM_{2.5}$ and Total Suspended Particles (TSP). The assessment of dust composition and respirable crystalline silica are still under investigation through conditions of the premises licence L4247/1991/13 through dust composition monitoring and specified action for product sampling. These matters will continue to be assessed under the licence as they relate to activities at the premises and the department maintains that the regulation and management of this should be conducted in a holistic manner. f) Noted. To avoid duplication, the department will consider alterations to the monitoring program, including considerations for monitoring $PM_{2.5}$, as part of future amendments to the licence, in line with commitments for continual improvement to the monitoring and management suite on the premises licence.

	k) Reference to a 'vegetative screen' to provide dust mitigation that requires further detailed assessment regarding potential effectiveness; l) DMP does not include a detailed assessment on how these controls address predicted exceedances is lacking in their submission; m) Monitoring requirements and air quality limits in the DMP do not align with licence conditions (L4247/1991/13); n) DoH considers that the most suitable means of assessing the exposure risks to sensitive receptors is a human health risk assessment which considers all relevant contaminants of concern and their cumulative exposure risk; and o) With the comments above, DoH considers that the submission provided insufficient information to support the proposed works approval amendment.	g) Noted. Commentary on the dust model provided and its limitations is discussed in section 2.3.3. h) Advice from the department's air quality experts has considered that the model is generally acceptable. This discrepancy has been noted, however the department considers the value of the model and the derived conclusions (that dust levels are predicted to increase) are the same. i) As discussed in section 2.3.3, expert advice provided commentary on the model's justifications for the exceedances (relying on conservative inputs). The department has noted the limitations of dust models in general (given the variability of inputs) and the accuracy of the values produced, and instead has considered that comparisons between scenarios provide more beneficial and real-life application. j) The department has considered that the lack of discussion regarding exceedances is insufficient, and after consideration of the risk, has imposed additional regulatory controls regarding dust management onto the works approval. This detailed in section 4.3. k) Please see previous comments regarding the review of the dust model. The department has considered limitations of the dust model and maintains that the benefits of the model are in the comparisons between scenarios. l) The works approval holder advised that a revised DMP is still being prepared to incorporate aspects of the TARP. Whilst the department considers that a DMP may be appropriate in managing dust emissions, any controls or monitoring that are considered key to dust management have been conditioned within the works approval or will be considered for inclusion the premises licence. m) It is noted that the dust control and monitoring improvements are an ongoing process, as demonstrated by the inclusion of the additional regulatory controls as part of this amendment. Due to this, it is possible that the most recent version of the DMP is not up date, or entirely consistent with the requirements on the premises licence or works approvals. As noted in response to (l), the department has considered all proposed controls (including those in the DMP) and have conditioned those that are considered necessary to manage the risk. n) Agreed. It is the department's position that conducting a human health risk assessment will be beneficial, assist with the identification of contaminants of concern and assist with the assessment of risk that will influence the management of air quality at the premises. Further, the department notes that results from dust composition monitoring being undertaken will influence the development of more specific monitoring at the premises (should this be required). o) Noted. The delegated officer has sought further information from the works approval holder during the assessment phase to ensure that there is sufficient information to amend the works approval. In the decision making process of this amendment, the delegated officer has considered the controls proposed and monitoring and management requirements under the licence, when risk assessing the scope of this amendment.
Department of Education advised of proposal on 20 February 2024.	DoE provided a response on 12 March 2024 with the following comments: a) Dust modelling: ○ Model predicted significant exceedances of licence conditions for current and expanded operations; ○ Prediction of significant exceedances predicted in town, which appears to contradict the previous (2022, GHD) air quality assessment – which primarily identified exceedances to receptors southeast of the mine; ○ Current model does not appear to use recent monitoring data for validation and does not include licence requirements for metal and respirable crystalline silica monitoring; ○ Whilst modelling concludes that inputs were conservative, no attempt to input more accurate parameters or to conduct a sensitivity analysis were noted in the report;	a) Noted. Please refer to the response to comments made above (in response to comments from DoH – particularly response items a), b) and c)) regarding the works approval holder's dust model and the department's assessment in section 2.3.3. b) Noted. Please refer to the response to comments made above (in response to comments from DoH – particularly response item l)) regarding the works approval holder's DMP. c) Advice from the departments air quality branch to verify the suitability and accuracy of the modelling are discussed in section 2.3.3. The model was generally considered acceptable, noting the limitations of dust models and reiterating the value in the information that can be derived from a model. d) Impacts to human receptors for both health and amenity have been considered in this assessment (as detailed in section 4.3), and previously for activities conducted at the premises (via recent amendments to Licence L4247/1991/13, including Amendment Reports dated 1 August 24, 28 August 2023 and 12 July 2023. As detailed in section 4.3, the management of dust at the premises is considered and implemented via a number of

	○ The submission described general default dust management controls, however there is insufficient detail on their efficiency (particularly in relation to the vegetative buffers), and fails to provide conclusions and recommendations to deal with the modelled exceedance; b) Dust Management Plan: ○ lacks a detailed assessment of how these controls will address predicted exceedances; ○ monitoring requirements and air quality limits in the DMP do not align with the licence conditions (L4247/1991/13) c) DoE would value commentary on DWER's review of the modelling and confirmation whether DWER has accepted the modelling, compliance and control measures as sufficient; d) DoE would appreciate DWER to consider the risks to sensitive receptors in town to have been appropriately addressed and evidence as to how this determination was made (for example, human health risk assessment) which considers all relevant contaminants of concern and their cumulative exposure risk).	regulatory instruments issued under Part V of the EP Act, in a holistic manner. Due to the nature of the activities and approvals for the premises, the risks associated with dust emissions and their impacts to sensitive receptors are considered to be high. As a result regulatory controls have been applied to recent amendments to the premises licence, including the: a. adoption of NEPM standards for air quality monitoring; b. installation of Australian Standard PM_{10} dust monitors; c. inclusion of a Trigger Action Response Plan to improve the management of dust events at the premises; and d. conditions requiring dust composition analysis and tailings product analysis. Additional controls conditioned under this works approval are considered to further improve dust control practices at the premises, in conjunction with those under the Licence. Information obtained from ambient air (ongoing) and dust composition monitoring (campaign based), as well as ongoing review requirements for dust control infrastructure and responses under the trigger action response plan will further inform the risk profile of activities conducted at the premises. Where risk is demonstrated to change, the department can change / impose additional conditions where necessary.
Greenbushes Primary School advised of proposal on 20 February 2024.	None received.	N/A.
Rural residential community members identified as direct interest stakeholders advised of proposal on 20 February 2024.	None received.	N/A.
Works Approval Holder was provided with draft amendment on 22 November 2024	The Works Approval Holder provided comment on the draft on 23 December 2024. Comments provided in Appendix 1.	Refer to Appendix 1.

6. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined that a Revised Works Approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

As noted in this assessment, and the assessment for the recent amendment to the premises licence, dust emissions from the premises are regulated via multiple approvals under Part V of the EP Act for prescribed activities. Dust management and control therefore needs to be considered holistically, particularly given activities under this works approval will form part a component of the overall emissions profile, and as modelling suggests increasing dust loads, activities associated with all premises activities, including those associated with this works approval will likely contribute to dust.

Given this, the delegated officer has determined that further improvements to dust management on the premises are appropriate via this work approval, with the outcomes contributing to improvements for dust control across the premises.

The controls implemented under this amended works approval are considered to improve oversight and delineation of dust sources and dust control effectiveness, which in turn will assist with improved and targeted dust control outcomes. These controls are also considered to compliment those recently conditioned via the premises licence (e.g. TARP, receptor monitoring, dust speciation analysis).

Conditions recently placed on the premises licence, and as included on the works approval, form part of the departments iterative approach to improving dust controls at the premises, to ensure that dust sources are identified and risks are managed to acceptable levels. The works approval holder will be required to submit a program of works that identifies what improvements can be made for the purposes of reducing dust emissions at key sources within the Premises and address the 'High' risk determined through this assessment.

Following the outcome of ongoing dust monitoring, particularly where investigations determine a change in risk profile, the department will initiate any changes to the licence or works approval in accordance with the risk which may mean additional regulatory controls.

6.1 Summary of amendments

Table 10 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Works Approval as part of the amendment process.

Table 10: Summary of works approval amendments

Condition no.	Proposed amendments
Throughout instrument	• Updated Figure numbering and associated referencing due to addition of new figures; ands • Updated condition numbering and associated referencing due to addition of new conditions.
Premises instrument history	Amendments to premises instrument history table to: • Updated '19 December 2022' amendment date to '14 December 2022' to reflect correct granting date of that amendment; • Inclusion of all undocumented licence L4247/1991/13 amendments; and • Inclusion of this amendment.
1	Following updates to include construction requirements for:

	• New item 3 – CGP4 Ore Sorter; • New item 4 – Crusher 4 • Updating item 5 (Crusher 3) as it will no longer be connect to the overhead conveyor; • New item 6 – CGP2 Ore Sorter; • New item 7 – Standalone Ore Sorter; and • New item 8 – ROM pad extension.
4	New condition for the requirement to conduct improvement works.
5	New condition for the requirements to review dust monitoring network.
6	New condition for items of infrastructure authorised for TLO.
7	New condition to specify the commencement and duration for TLO.
8	New condition for operational requirements during TLO.
9	New condition for submission of TLO report.
10	New condition to include reporting requirements for the TLO report.

Definitions	• Definitions for the following terms have been included:
	  ○ mAHD; and
	  ○ time limited operations;

Figure 1	Updated Figure to show prescribed premises boundary only.
Figure 2	New figure to represent location of all infrastructure referenced in the works approval.
Figure 4	Updated Figure to correctly show the location of infrastructure.
Figure 8	Updated Figure to correctly demonstrate the surface / stormwater drainage at CGP4.
Figure 10	New figure to show the surface / stormwater drainage infrastructure to be constructed to support the new equipment.
Figure 11	New figure to show the overall drainage.
Figure 12	New figure to demonstrate the drainage at the ROM pad.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Premier and Cabinet (DPC) 2024, *Whole of Government Parallel Decision-Making Policy*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Herring Storer Acoustics 2023, *Talison Lithium Ltd Proposed Expansion Greenbushes Acoustic Assessment Ref: 31341-3-23047*, Perth, Western Australia.
6. Talison Lithium Australia Pty Ltd (Talison) 2024, *Annual Noise Report 01 March 2023 – 29 February 2024*, Perth Western Australia.

Appendix 1: Summary of Works Approval Holder's comments on risk assessment and draft conditions (Draft 1)

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
1.	Cover Page: Duration	The Works Approval holder is requesting an extension to the duration of the instrument for an additional 5 years due to the projected delays to CGP4 and Crusher 4.	The department has accepted an extension until 01 April 2031 (3-year extension). Noting that the updated schedule of works provided by the Works Approval Holder as part of the comments provided on the draft works approval indicates that all infrastructure will be constructed by 2029, an extension to the duration for 3 years is considered reasonable to allow for the construction and TLO of infrastructure within Table 1, and will allow adequate timing under TLO whilst a licence amendment is assessed.
2.	Notes on Crusher 4	The Works Approval Holder has noted the pending internal advice from DWER regarding Crusher 4. As the operational priority for the Works Approval Holder is CGP3, Crusher 3 and all associated components, with construction of Crusher 4 notionally scheduled to commence 2027, the Works Approval Holder has advised, if needs be, Crusher 4 construction can be excluded from this amendment and pursed separately at a later date.	As discussed in section 2.2 and 3.2, the department has determined that the assessment and authorisation of Crusher 4 can be conducted under the department's parallel decision-making pathway. In this instance it is noted that the Works Approval Holder will also be required to obtain approvals under Part IV of the EP Act for this item of infrastructure.
3.	Condition 1, Table 1	Due to delays in the projected timeframes for the expansion works and *ensure alignment with the proposed amendment*, the Works Approval Holder is requesting to update the timeframes in Table 1 and is correcting the throughput capacity for some of the items of infrastructure: 1. CGP3 timeframe to update from 31 March 2025 to 2026; 2. Correct the CGP4 capacity from 2.4 to 2.7 Mtpa and update timeframe from 31 March 2027 to 2031; 3. Correct Crusher 3 capacity from 4.8 to 2.4 Mtpa and update timeframe from 31 March 2025 up to 30 September 2025.	1. The department accepts this request and has considered that this doesn't change the original risk rating / assessment; 2. The department accepts this request to update the throughput and has updated the timeframe to match the end of the WA duration; and 3. The department accepts the request to push back the timeframe to the end of the WA duration (as discussed in item 1) noting that this doesn't change the original risk rating / assessment. The department accepts the change to capacity, noting that Crusher 3 was originally proposed to service both CGP3 and CGP4, but now will only service CGP3.

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
4.	Condition 1, Table 1 & Condition 2	The Works Approval Holder advised that the ROM pad extension (item 8 of Table 1) will be constructed in stages to broadly align with the construction of CGP3/Cr3, CGP4/Cr4 and the Standalone Ore Sorter individually. Due to this the Works Approval Holder is requesting to submit separate compliance report to demonstrate compliance for each section of the ROM as follows: 1. Section of ROM constructed for CGP3/Cr3; 2. Section of ROM constructed for CGP4/Cr4; and 3. Final addition of ROM constructed for Standalone Ore Sorter.	The department accepts this change and has amended the construction table so the separate sections of the ROM pad to be constructed, as advised by the Works Approval Holder, are now separate items in Table 1 and therefore can be constructed in stages, with separate compliance reports submitted for each section.
5.	Condition 4 and Condition 5	1. The Works Approval Holder has advised that they will continue to drive toward reducing dust emissions as evidenced in the implementation of the TARP (Trigger Action Response Plan) which is scheduled to be reviewed soon. The Works Approval Holder considers that the TARP (implementation under the L4247/1991/13) is the key action plan to deliver continuous improvement in managing dust emissions. Draft conditions prescribe a number of initiatives in some detail seeking to improve dust management in specific areas of the operations. Whilst the Works Approval Holder acknowledges the need to continue to improve dust management, the proposed approach specified in draft conditions 3 and 4 are considered problematic. The Works Approval Holder does not consider that sufficient information will be available within 12 months of the issue of the amended Works Approval to enable meaningful examination of the matters covered in conditions 4 and 5. Considering that the amended Works Approval is issued in February 2024, the key reasons include: • The data collection period will only cover part of the 2024/2025 high dust period of summer and early autumn; and • CGP3 is not expected to commence commissioning and operation until Q3/4 of 2025 and therefore will not contribute any meaningful information regarding its emissions profile and relative contribution. For the reasons above, the Works Approval Holder recommends that in order to provide meaningful information to inform improvement actions, the data collection period should cover the 2025/2026 high dust period (until April 2026). This will allow for analysis and reporting a more appropriate delivery date for such review is end of June 2026. 2. As noted above, the Works Approval Holder considers the implementation of the TARP as the key action plan to delivery improvements to managing	1. The department accepts the Works Approval Holder's request that additional time is required to enable meaningful examination of matters covered in draft condition 4 and will increase the timeframe to 18 months. The department does not however, accept the request to increase the timeframe for draft condition 5, noting that review of the dust monitoring network, and the addition of new boundary and source monitors are independent to existing monitoring data, identified during this assessment to be required to improve dust source attribution. As observed in the review of reported exceedances, while dust can be attributed to premises at large, current monitoring and analysis does not allow further characterisation of the location or cause of the exceedance, which will be improved with additional source monitoring as specified by condition 5. 2. Whilst the department acknowledges the ongoing review of the TARP under condition 36 of L4247/1991/13, it is noted that the requirements of that condition are specific to that in the TARP (i.e. trigger values, wind arcs/speeds) and providing an assessment on the TARP's efficiency, noting that until this is provided to the department, there is limited evidence of the TARP's ability to maintain / reduce dust exceedances at the premises. Condition 4 and 5 aim to clarify existing infrastructure controls (which are not specifically listed in L4247/1991/13) and to increase and improve the current monitoring network of two receptor monitors. The department does not agree that condition 4 and 5 will be duplication to condition 36 (in L4247/1991/13) and whilst all conditions are related to dust improvements, they focus on

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
		dust emissions (noting that the TARP document includes dust management of all premises activities, not just those that are within scope of category 5 activities and conditioned in L4247/1991/13. The Works Approval Holder considers that the requirements under the Condition 4 and 5 will place undue focus on processing sources of dust emissions and risks distracting efforts from other, more important improvement opportunities for control of dust emissions. The Works Approval Holder also notes that L4247/1991/13 requires the submission of air quality and meteorological data. The Works Approval Holder is seeking to avoid any duplication across regulatory system and prefers that the existing condition 36 (in L4247/1991/13) will be relied on in place of the draft conditions 4 and 5. They note that the current active licence amendment application presents an opportunity to clarify the scope of condition 36, if necessary 3. A) In regard to condition 4, the Works Approval Holder considers the specifications in order to comply with condition 4 are, onerous, poorly defined and unlikely to significantly improve dust management. They would like to note that a significant proportion of dust sources are area based, or related to material movements, where control methods for these do not fit within concepts of availability and reliability. B) In particular, it is unclear the benefit of a dust control equipment inventory and what is meant by "specific operational requirements" and is unlikely lead to reduced emissions. The Works Approval Holder considers that any review and corresponding plan should target key sources of dust based on risk and opportunity assessment, to assess relative contribution of dust and opportunity to improve. The focus of improvement actions should be where the most significant improvements can be made. 4. The Works Approval Holder considers that the inclusion of condition 4 and 5 appear based on the presumption that without improvement, the emissions at the premises will exceed acceptable limits, based on the model predictions. The Work Approval Holder considers that this does not take into account the implementation of the TARP that requires escalation of dust control. The application this nature of controls cannot be accounted for in modelling. As such, the modelling is considered conservative in that it does not consider management escalation.	different components and are expected to provide useful information on dust control infrastructure and dust management independently. 3. A) The department accepts the Works Approval Holder's comments regarding the drafted specifications of condition 4 and have amended the requirements accordingly whilst still maintaining the intent of the condition. B) The department considers that the benefit of the dust control equipment inventory will ensure that there is a record of all the dust control infrastructure at the site which may not be currently captured in L4247/1991/13. The 'specific operational requirement' refers to how that dust control equipment is being utilised, i.e. only during high winds or whenever the equipment is operational. Notwithstanding, the department has updated the wording of the condition to address some of these concerns, while maintaining their intent. For the purpose of improving dust management in process areas (scope of this assessment) the department considers the listed infrastructure in condition 4(b) and those approved to be constructed under this works approval, to be the significant dust sources. 4. As discussed below to address item 9, the department has considered a number of factors, in addition to the dust model in determining the risks associated with the proposed activities. The department has considered that the addition of dust emitting activities (TLO of the infrastructure under this works approval) and overall increase to throughput will lead to possible increases in dust emissions at the premises which have already been shown to exceed dust guideline values. Noting that the review of the TARP (to be conducted under condition 24 of L4247/1991/13) is yet to be conducted, the department does not sufficient evidence to suggest that the implementation of the TARP (December 2023) has significantly decreased the number of dust exceedances at this time. The department does acknowledge however, the importance of the TARP and is role in managing dust emissions across the premises. The intention of condition 4 and 5 is to support the holistic management of dust, and assist with improved source identification, and improved dust control

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
			strategies in conjunction with the management measures implemented through the TARP. Following the submission of the review (under L4247/1991/13 Condition 24) should evidence suggest that dust exceedances have reduced (and dust management actions under the TARP are demonstrated to be effective at reducing dust emissions), a review can be conducted on the collective requirements established under this works approval and licence as part of the ongoing review of dust management at the premises.
6.	Table 2, Row 1(g), Row 2(f) and Row 4(b)	The Works Approval Holder has advised they currently use a mix of water carts or suitable dust suppression coatings (e.g. gluon that is not always applied via water cards) to achieve similar dust suppression outcomes, and request to reword these requirements to state "water cart *or suitable dust suppression coating* to service all areas of the processing area (including roads, exposed surfaces and infrastructure), particularly the stockpiles to minimise lift off; and" or similar.	The department accepts this change noting that the intent of the condition remains the same. The department has also amended this wording for row 5(a) where the use of water carts for dust suppression purposes was also conditioned.
7.	AR Table 1	As with item 2, the Works Approval Holder is requesting to update the dates aligned with the current project timeframes as below:	The department accepts this change noting that it is administrative in nature.
8.	AR Table 2 and Table 3	The Works Approval Holder commented on the reference to trigger value exceedances from the Osiris dust monitoring, noting that these do not indicate poor dust management performance and instead used as a preventative tool to trigger escalation of dust management actions. The Works Approval Holder queries whether a level of performance against the Osiris triggers are of concern, considering they are designed as an early warning system.	Whilst the department acknowledges that the Osiris triggers are used as a management tool at the premises, the comparison of historical trigger exceedances numbers provides information on the dust profile overtime at the premises. The department confirms that the level of performance is not being assessed against Osiris triggers, noting that information provided in exceedance reports regarding management actions are considered more of an indicator of performance. Further, the comparison of historical trigger exceedances indicates the dust load recorded at receptor monitors prior to the initiation of management under the previous licence conditions. The department has considered multiple indicators to assess the dust profile from the premises, including trends in Osiris exceedances (i.e. levels of dust load at the receptor monitors) and the number of NEPM level exceedances (particularly those attributed by the Works Approval Holder to originate from the premises activities), dust modelling results and forecasting, and complaint information.

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
9.	AR Section 2.3	The Works Approval Holder disputes the comments made in section 2.3 that advises the department has limited the scope of this assessment to only category 5 processing facilities, noting that the current emissions profile (demonstrated by dust monitoring data) and the dust model presents information for the entire operations, and in order to assess only category 5 activities requires modelling specific to those activities and to only consider dust exceedances related to those activities. The Works Approval Holder notes that the analysis of the dust model which assessed the change in emissions includes the increase in intensity and spatial extent of both category 5 and non-category 5 activities undertaken at the premises. They advised, that in terms of relative contribution, the ratio of ore to waste is currently 1:5 and will reduce to 1:2 in future years. They advised that the potential relative contribution of dust from non-Part V regulated mining activities (such as the movement of waste rock) is far greater than from processing facilities and associated feeding activities. Therefore, to focus dust management measures more heavily on processing is unlikely to yield good improvement in dust emissions reductions and is not supported by the Works Approval Holder.	The department did note that the dust emission profile discussed in this section encompasses all premises activities and has amended the wording to clearly state this message. In addition to the review of historical dust exceedances, complaints reported and the dust model, the department considered the possible increase to emissions through increase to category 5 throughput and the approval of time-limited operations for category 5 infrastructure. The department acknowledges the gaps in the understanding of dust sources within the premises and considers the additional regulatory controls requiring source specific monitoring will identify high dust emission activities and locations. This information will support the future assessment for dust emissions from category 5 activities, and also inform the extent of, and requirement for dust management relating to non-prescribed activities at the premises that may require involvement from other regulatory agencies or management measures.
10.	AR Section 2.4	The Works Approval Holder has confirmed that it is their intent that the Regulation 17 renewal will cover all the current and proposed expansion activities.	Noted.
11.	AR Section 4.3.5	The Works Approval Holder advised that the risk rating of "severe" on a precautionary basis is not considered appropriate for the following reasons: • Works Approval Holder has analysed the dust, including composition, fibres, respirable dust, and a-quartz monitoring; • Potential dust sources have been analysed (dry tailings, product, waste); and • Given the above studies, DWER (and DoH) therefore have a sound a sufficient understanding of the composition of dust emitted from the operations. The Works Approval Holder notes, that whilst trace amounts were identified in TSF1 tailings, monitoring undertaken at Greenbushes Primary School since January 2024 has not reported RCS or any asbestiform material above practical detection levels. As there is no evidence of pathway or impacts, there is no health risk and this risk event should therefore be removed from the risk assessment.	The department acknowledges there are outstanding data that will better characterise the risk of the dust at receptor. However, at the time of the assessment and these comments, the department is yet to receive the results from the dust compositional monitoring required under the premises licence. Until these results are received and the necessary analysis undertaken, the department does not have the justification to change the existing risk rating of 'severe'. The department also notes that whilst the Works Approval Holder requests this risk event be removed, it should be noted that this would not impact the assessed and determined condition setting in the Works Approval.

Appendix 2: Summary of Works Approval Holder's comments on risk assessment and draft conditions (Draft 2)

Item	Condition / Section	Summary of Works Approval Holder's comment	Department's response
1.	Appendix 1, Item 2	The Works Approval Holder acknowledges and supports the exclusion of Crusher 4 from this amendment should the approval for Parallel Approval be delayed. The Works Approval Holder requests to be updated in the event that this approval is holding up the granting of this works approval amendment.	Noted. The department's determination on Crusher 4 is discussed in section 3.2.
2.	Appendix 1, item 3	In response to the department's request, the Works Approval Holder has provided the throughput for each item of infrastructure listed in Table 1, items 1-7 of the works approval.	These throughputs were included/amended in Table 1 for clarity purposes. The detail of the combined throughputs is discussed in section 2.2.3.
3.	Appendix 1, item 11	In support of the comments made in item 11 of Appendix 1, the Works Approval Holder has provided available information obtained in accordance with L4247/1991/13, condition 27 Table 13, for PM_{10} high-volume sampler dust monitoring.	Acknowledged. The department will proceed with the analysis of this data noting that the dust compositional monitoring that is also required by condition 27 has not been provided. As advised in response to item 11 of Appendix 1, until the necessary analysis is undertaken for the provided results (and future outstanding results for dust metal compositional monitoring), the department does not have the justification to change the existing risk rating at this time. The department will consider the analysis of the results provided and any future data results to further inform the risk rating of future assessments of dust at the premises.

Appendix 3: Application validation summary

SECTION 1: APPLICATION SUMMARY			
Application type			
Amendment to works approval	☒	Current works approval number:	W6283/2019/1
		Relevant licence number:	L4247/1991/13
Date application received		29 November 2023	
Applicant and Premises details			
Applicant name/s (full legal name/s)		Talison Lithium Australia Pty Ltd	
Premises name		Talison Lithium Mine	
Premises location		Mining Tenements: M01/3, M01/6, M01/7, M01/8, M01/9, M01/16 General Purpose Lease: G01/1, G01/04 Maranup Ford Road, Greenbushes WA 6254	
Local Government Authority		Shire of Bridgetown - Greenbushes	
Application documents			
HPCM file reference number:		DER2019/000216~5 - Application form: A2233631 - Supporting document: A2233633	
Key application documents (additional to application form):		a) Air Quality Assessment (pg90 of supporting document)	
Scope of application/assessment			
Summary of proposed activities or changes to existing operations.		As per section 2.2 of this Amendment Report.	

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5: processing or beneficiation of metallic or non-metallic ore	11.6 Mtpa	12.5 Mtpa

Legislative context and other approvals		
Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☒ No ☐	Ministerial statement No: 1111 EPA Report No: 1636
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☒ No ☐	Reference No: 2018/8206 – approved 14 November 2019
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	No changes to premises boundary through this amendment – scope is within existing footprint.
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	*Mining Act 1978 applies.*
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☒	*No clearing is proposed.*

Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	*No clearing is proposed.*
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☐ No ☒	
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☒ No ☐	*Aboriginal Heritage Act 1972* *Biodiversity Conservation Act 2016* *Conservation and Land Management Act 1984* *Contaminated Sites Act 2003* *EPBC Act 1999* *Dangerous Goods Safety Act 2004* *EP (Unauthorised Discharge) Regulations 2004* *EP (Talison Lithium Australia Greenbushes Operation Noise Emissions) Approval 2015*
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☒ No ☐	Classification: Contaminated – restricted use (C–RU) Date of classification: 7 October 2020