



Application for Licence Amendment

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

Licence Number	L4328/1989/10
Licence Holder	MARBL Lithium Operations Pty Ltd
ACN	637 077 608
File Number	INS-0001138 APP-0029828
Premises	Wodgina Lithium Project M45/49, M45/50-I, M45/254, M45/353, M45/365-I, M45/381, M45/382, M45/383-I, M45/886, M45/887-I, M45/888, M45/950-I, M45/923-I, M45/924-I, M45/925-I, M45/949, M45/1188-I, M45/1252-I, G45/290, G45/291, G45/321 and L45/443 MARBLE BAR WA 6760 As depicted in Schedule 1 of the Revised Licence
Date of Report	31 October 2025
Decision	Revised licence granted

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

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1. Decision summary

Licence L4328/1989/10 is held by MARBL Lithium Operations Pty Ltd (licence holder, MARBL) for the Wodgina Lithium Project (the premises, Wodgina Mine), located on mining tenements M45/49, M45/50-I, M45/254, M45/353, M45/365-I, M45/381, M45/382, M45/383-I, M45/886, M45/887-I, M45/888, M45/950-I, M45/923-I, M45/924-I, M45/925-I, M45/949, M45/1188-I, M45/1252-I, G45/290, G45/291, G45/321 and L45/443, Marble Bar.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the premises. As a result of this assessment, revised licence L4328/1989/10 (L4328) 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 8 July 2025, the licence holder submitted an application to the department to amend licence L4328 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Proposal to deposit dry stack tailings within the newly proposed Eastern Waste Landform 2 (EWL2).
- Expansion of dry stack tailings usage for surface sheeting across the premises, including the proposed EWL2 area.
- Amendment to groundwater monitoring infrastructure, involving the removal of existing constructed wells and the inclusion of newly proposed installations under the licence.
- Introduction of a new licence condition requiring the submission of a Water Management Plan by a specified deadline.
- Streamlining of groundwater level monitoring for the Tailings Storage Facility (TSF) to eliminate duplication within process monitoring requirements.
- Addition of Anson C TSF Pit operations to the licence to enable continuous operation beyond the time-limited approval granted under Works Approval W6734/2022/1.

This amendment is limited only to changes to Category 5 activities from the existing licence. No changes to the aspects relating to categories 52, 54, 57, 64 or 85B have been requested by the licence holder.

2.2.1 Deposition of dry stack tailings into EWL2

The existing licence L4328 allows for deposition of dry stack tailings co-mingled with mine over-burden waste into the EWL1 within the premises.

The applicant has applied under the Mining Act with the Department of Mines, Petroleum and Exploration (DMPE) to construct a new waste landform, EWL2. EWL2 is northeast of the existing EWL1, where existing approvals for the deposition of co-mingled tailings have been granted. The applicant proposes that the operation continues into the new EWL2 utilising

existing control within the footprint with additional controls subject to the differences within the landform design recommendations (see section 2.5.1 for further details on landform design).

The licence holder requests the following changes within the existing licence L4328.

- Update Condition 3 Table 2 to include EWL1 and EWL2 facilities with the following additional process limits and /or specifications:
 - Increase the area of deposition from 209.2 ha to 363.8 ha (EWL1:208.8 ha, EWL2:155.2 ha).
- Add the following process limits and /or specifications to Condition 3 Table 2:
 - Dry stack tailings to be deposited in the EWL1 will not be placed within the approved cover system of the final embankments or underneath an embankment slope.
 - A compacted base layer of non-acid forming (NAF) material will be placed prior to deposition into the landforms in a progressive approach, with depths modelled based on natural ground conditions and potential hydrological ingress to the landform.
 - Landform designs require a NAF material cover layer and specific cover system requirements (e.g. rock armouring, growth media) to reduce oxygen ingress.

See Figure 1 for footprint areas of EWL1 and EWL2.

2.2.2 Dry stacking tailings for sheeting

The licence holder currently produces a dry stack/coarse rejects tailings stream, which is approved for disposal within EWL1. It is now proposed to co-mingle and dispose of this material within the proposed EWL2 and use the tailings for construction and operational activities. The licence holder considers the tailings material to be benign in nature (see section 2.5.2 for further details).

The construction would include bedding material for pipework, sheeting walkways and work areas, and sheeting for operational mining areas, run-of-mine (ROM) and haul routes. Dry stack tailings will be co-mingled with NAF waste rock material that is currently utilised to construct roads, mining area access and other infrastructure onsite. The properties of dry stack tailings are expected to enhance the quality and maintainability of roads and operational areas. Approximately 735,000 m³ per annum of dry stack tailings is proposed to be used within the premises for construction / sheeting purposes.

The licence holder's requested updates include changes to:

- Condition 3, Table 2: Management of Waste to include site-wide use of dry stack tailings with reference to Condition 9, Table 4
- Condition 9, Table 4: Infrastructure and equipment to include dry stack tailings and operational requirements.
- Condition 17, Table 8: Authorised discharge points to include dry stack tailings and site-wide discharge locations.
- Condition 27, Table 11: Monitoring of inputs and outputs to include monitoring of the input/output volumes of dry stack tailings for use of construction materials.

2.2.3 Removal of constructed infrastructure

The licence holder requests that Condition 12 Table 6 infrastructure requirements for groundwater monitoring wells be updated to remove the groundwater monitoring wells that

have been constructed and add the proposed monitoring wells to be constructed for the proposed EWL2.

Well Construction Logs and a statement of the design and construction / installation requirement compliance were submitted to the department for monitoring bores EWL5YPMB001, EWL5YPMB002, EWL5YPMB003, EWL5YPMB004, EWL5YPMB001_S, EWL5YPMB001_D, TSF EXT RB1, and have been requested to be removed.

The following groundwater monitoring wells have been proposed for inclusion, they are: EWL2MB01, EWL2MB02, EWL2MB03, EWL2MB04, EWL2MB05, EWL2MB06, EWL2MB07 and EWL2MB08, all these wells are associated with the proposed expansion of the EWL2.

2.2.4 Water Management Plan

The licence holder has requested an additional condition to allow time to complete a combined ecotoxicology/ water management / Trigger Action Management Plan (TARP). The proposed Water Management Plan will act to consolidate related monitoring, sampling, analysis and management response requirements into one holistic plan. Currently an ecotoxicology plan is due on the 31 August 2025 under existing Condition 33. The additional condition will provide the licence holder with additional time to prepared outstanding investigations and appropriate updates to the pending ecotoxicology plan.

The licence holder proposes the following new specified condition to ensure that a Water Management Plan is provided to the department within the specified timeframe:

“Condition X: The Licence Holder must provide an overarching Water Management Plan/TARP by 30 April 2026, which describes monitoring, sampling and analysis, and management response requirements.”

2.2.5 Process monitoring proposed changes

Condition 28 within the existing licence states that monitoring must be undertaken according to specifications in Table 12 of the instrument. Table 12 currently states that for EWL Dry Stack Tailings Disposal Area, groundwater monitoring bores should be monitored with a flow metering device for EWL23RMB001, EWL23RMB002, EWL23RMB003, EWL5YPMB001, EWL5YPMB002 and EWL5YPMB003.

The licence holder proposes that the specified EWL bores be removed entirely from Table 12, given Condition 29, Table 13 specifies monthly standing water level spot sample/data logger for the bores in addition to Table 12. Monthly standing water levels as collected during the monitoring program will continue to be reported on annually, as per the requirements of Condition 32 of the licence instrument. This administrative amendment will remove duplication within the instrument.

2.2.6 Addition of Anson C operations

The licence holder is currently operating Anson C pit (part of Combined Anson TSF) under works approval W6734/2022/1 within time limited operations. The licence holder requests that the continued operation of Anson C be assessed to allow for the operations to continue before the expiry of the time limited operations period under the works approval.

The licence holder proposes that the following Figure and conditions are revised within the licence to consider the addition of Anson C operations, including updating:

- Condition 9, Table 4: Infrastructure and equipment requirements.
- Condition 17, Table 8: Authorised discharge points.
- Condition 28, Table 12: Process Monitoring.
- Condition 29, Table 13: Monitoring of ambient groundwater quality.

- Condition 32, Table 14: Environmental reporting requirements.
- Figure 12: Location of Anson A and B Pits and Infrastructure suggesting changing caption to read “*Figure 12: Location of Combined Anson TSF and Infrastructure*”.
- Schedule 3: Monitoring bore location groups (Anson A & B Group).

2.3 Works approval and licence – compliance overview

2.3.1 Works approval W6734/2022/1

The licence holder was granted approval on 9 September 2024 to develop the western area of the Atlas IPTSF to combine existing Anson A, Anson B and proposed Anson C pits with an embankment, expanding the storage above ground. The embankment will be constructed to an elevation of RL 290 metres. The licence holder received a notification from the department on 16 June 2025, accepting the submission of the Anson Pit C (part of combined Anson TSF) environmental commissioning report. The department assessed the environmental commissioning report and determined that it met the requirements of existing Conditions 10 and 11 of works approval W6734/2022/1, authorising time limited operations for Anson Pit C under Condition 12 of the works approval. A time limited operations report has not been received yet.

2.3.2 Licence L4328/1989/10

The department received well construction reports and bore logs for EWL5YPMB001, EWL5YPMB002, EWL5YPMB003, EWL5YPMB004, EWL5YPMB001_S, EWL5YPMB001_D on the 22 April 2025. A confirmation memo of the construction and bore log for well TSF EXT RB1 was received on the 8 September 2025.

The delegated officer has assessed the documentation and determined that all monitoring wells installation meet the requirements of conditions 12 and 36 of licence L4328/1989/10.

However, the delegated officer notes that construction of the Eastern Waste Landform (EWL5YP) groundwater monitoring wells were completed on 21 February 2025, and that the licence holder acknowledges non-compliance with Condition 12, Table 6 – Timeframe, that the four (4) EWL5YP and EWL24 monitoring bores “*must be constructed, developed (purged), and determined to be operational prior to the progressive expansion of the EWL and resulting decommissioning of existing EWL monitoring wells (i.e. EWL-a, EWLb, EWL-h, EWL-i-i, EWL-j and EWL-k)*”. It was noted that the licence holder intends to report this non-compliance with condition 12 in the 2025 Annual Audit Compliance Report.

2.4 Other approvals

2.4.1 Department of Mines Petroleum and Energy

The Department of Mines Petroleum and Exploration (DMPE) advised the department that the licence holders amendments are consistent with a recent approval under the *Mining Act 1978*, (*Wodgina lithium Project Mining proposal (Version 4) and Wodgina Lithium Project Mine Clsoure Plan (Version 6) approved on 27 August 2025*).

The approved mining proposal considered:

- An increased depth of mining of the Cassiterite Pit with a revised PAF-NAF ratio and volumes that has necessitated the requirement for the new waste rock landform (EWL 2), and a review of the waste rock landform closure design.
- Use of co-mingled dry stack tailings/waste rock product for construction and sheeting material for operations mining areas.

The department was advised that the proposed EWL2 design requirements and controls met with DMPE environmental objectives, including for rehabilitation and mine closure to make them physically safe, geotechnical stable, geochemically non-polluting/non-contaminating, and capable of sustaining agreed post mining land use. Trigger action response plans (TARPs) for waste rock encapsulation and EWL1 and EWL2 seepage management have triggers for action in respect to pH and contaminants of potential concern with performance criteria in consideration of the waste rock landform design change.

The mining proposal considered the use of waste rock co-mingled with dry stack tailings for use as bedding material for pipework and sheeting walkways, run of mine and haul routes. DMPE advised that the geochemical and physical attributes of the dry stack tailings and the licence holders' control including segregation and separation of PAF waste rock material prior to co-mingling of dry stack tailing as appropriate.

DMPE acknowledge that they are the regulatory body responsible for the overseeing of Wodgina mines' closure and rehabilitation. Ensuring that the mining operations are closed out in a safe and environmentally sound manner. DMPE has requested the licence holder to submit a revised mine closure plan (MCP) in 2028. Where the revised MCP must include a revision of the AMD source – pathway - receptor conceptual model based on the revised PAF management and encapsulation strategies. DMPE acknowledges that the licence holder requires to undertake additional studies that can inform the proposed model and the likelihood of identifying risk pathways and mitigation strategies. The proposed revised MCP must identify and provide detailed corrective actions and contingencies against completion criteria that will include risk management and consideration for percolation, oxidation and material coverage depths.

Existing clearing permit CPS10346/1 currently covers a portion of the proposed EWL2 establishment area. A new clearing permit CPS11122/1 will cover the entirety of the proposed EWL2 area which is currently under assessment under the delegated powers under Section 20 of the EP Act.

The delegated officer notes this information and that DMPE acknowledge the risks associated with the EWL2 expansion and use of dry stack tailings for construction and sheeting and intend to manage the risk through a future revised MCP. Furthermore, the delegated officer has determined to condition the following:

- *Clearing permit CPS11122/1 must be granted before works can commence on EWL2.*

2.5 Review of EWL2 and tailings use

2.5.1 EWL 2 encapsulation design

The existing mining sequence at Wodgina Mine is delivering, a higher ratio of potential acid forming (PAF) to non-acid forming (NAF) material than was originally used to design the cover system for the landform. The licence holder has indicated that present longer-term planning for the EWL1 and EWL2 indicates that there will be insufficient future NAF material to implement both landform designs based on the current encapsulation approach.

The licence holder undertook three simulations to evaluate the performance of different encapsulation cover system options for net percolation and salt uptake. Each cover system option consisted of 2 metres of NAF cover material overlying either, 0 metres, 5 metres or 10 metres of additional fresh NAF rock material. The model results indicated that the thickness of the additional fresh NAF material layer did not materially influence net percolation into the landform. All modelled simulations showed that the net percolation was sufficient to flush salt downward through the waste rock, with no salt uptake observed, even without any additional NAF material present.

A further twelve simulations for the base layer were conducted to determine groundwater

mounding and oxygen ingress using the varying thickness of the NAF material cover system (including 0 metres, 1 metre, 5 metres and 10 metres). The design options included:

- A basal NAF material layer and internal co-mingled PAF with dry tailings.
- No basal NAF material layer and internal co-mingled PAF with dry tailings.
- A basal NAF material layer but no co-mingling of dry tailings.

The modelling determined that groundwater mounding in the landform occurred at a maximum height of 3.6 metres. It was determined that a minimum 4 metre thick NAF material-based layer would prevent the water table contacting the PAF material.

Furthermore, due to the coarse nature of the NAF waste rock material, oxygen ingress along the base can interact with co-mingled PAF materials, that enhances oxidation deeper within the landform. The level of oxygen ingress into the landform was modeled with and without the presence of the base layer. The modelling indicated that presence of co-mingled tailings in the PAF material layers throughout the landform provided greatest level of control for oxygen ingress into the EWL.

Two additional models were completed for EWL2 to test a base layer where catchments upstream of the landform were diverted, reducing the water accumulating at the toe of the landform. The model results simulating the EWL2 indicated that a NAF layer of 2 metres is sufficient to maintain the groundwater mounding within the NAF basal layer. Like EWL1, base layers should only be implemented at EWL2 in the drainage lines to reduce oxygen ingress.

Modelling demonstrated that oxygen ingress was reduced by including dry tailings as co-mingled layers within the landforms, as they disrupt airflow within the PAF material. Limiting or removing the basal NAF layer assisted reducing oxygen ingress, however, the base layers provide a conduit for airflow deep within the landform. To optimised against managing potential risks for groundwater mounding as a pathway for contaminants to leave the landform. The proposed updated design specification attempted to find a balance for these requirements. This included two scenarios for installing the cover system on slopes over the dumped PAF waste rock that could be applied to manage the available NAF material for execution of the cover system:

- Place sufficient NAF material over PAF material (as dumped) waste and regrade to a 20° batter slope to achieve a minimum 2.5 metre thickness (2 metre cover system and 0.5 metre rock armour); or
- Regrade the PAF material (as dumped) to a 20° batter slope and place a minimum 2.5 metre thick NAF material layer at the top (2 metre cover system and 0.5 metre rock armour).

2.5.2 Chemical analysis of dry stack tailings

The licence holder undertook tailings characterisation test of the coarse tailings fraction that is co disposed within the EWL1 including both pre and post column static testing and Leaching Environmental Assessment Framework (LEAF) Method 1313 (US EPA 2017).

Static Testing Summary

Based on pre-column total four-acid digest (static) test work the dry/coarse tailings are geochemically enriched in Beryllium (Be), Cesium (Cs), Fluorine (F), Lithium (Li), Rubidium (Rb), Tin (Sn), Tantalum (Ta), Thallium (Tl) and Tungsten (W). Despite these enrichments, less than 50% of the total concentration of these metals and metalloids were considered environmentally available (strong acid nitric/hydrochloric digestion), including only 7% of the total lithium. Arsenic content in the dry/coarse tailings was very low (0.2 mg/kg).

Hydroxylamine leaching analysis of the dry/coarse tailings as above indicated that most metals and metalloids remained as low solubility under reducing conditions. Only 0.6% of total lithium was considered soluble under reducing conditions. Arsenic was not detected in the reducing leach of dry/coarse tailings.

Leachate testing was also carried out using four molar hydrochloric acid to determine solubility under any highly acidic conditions, which could potentially occur with the strategy of co-mingling dry/coarse tailings with potentially acid forming (PAF) waste rock. Under such highly acidic conditions, all enriched metals and metalloids still reported low net release amounts (less than 7% of total). Only 3% of total lithium content was considered soluble under these conditions. Iron (6.9 mg/L) and aluminum (19 mg/L) were elevated, as would be expected due to increased solubility of these elements at low pH.

Kinetic Testing Summary

Leachate from the 12-month kinetic column trial conducted on the dry/coarse tailings was alkaline to circum neutral for the trial duration, ranging from pH 8.9 at month zero to 6.8 at month twelve. Arsenic concentrations in the leachates remained below the freshwater protection 90% default guideline value (DGV) of 0.042 mg/L from month one (month zero first flush was 0.05 mg/L) and well below livestock drinking water guidelines (0.5 mg/L) indicating low risk of long-term arsenic seepage from the dry/coarse tailings into the EWL.

Lithium concentrations in the leachates decreased from 33 mg/L (month zero, evapo-concentrated process water) to 3.9 mg/L at month one to 0.25 mg/L at month twelve. The concentration exceeded the long-term irrigation guideline of 2.5 mg/L for the first month and above the Interim Site-Specific guideline of 1.5 mg/L for the first two months only.

The dry/coarse tailings are not expected to produce acidic drainage. Concentrations of lithium release (and salinity in general) are significantly lower than wet/fine tailings and the tailings are expected to produce very low salinity drainage potential in the short term and have extremely low potential for saline drainage and lithium release in the long term

Leaching Environment Assessment Framework (LEAF) Testing Summary

The tailings matrix has a circum-neutral to slightly alkaline pH at which most potential metal and metalloid constituents are largely insoluble or present at concentrations well below relevant environmental criteria. Concentrations of aluminum exceeded the non-potable use of groundwater (NPUG) of 0.2 mg/L for the entire pH range, indicating the potential for aluminum to leach from the tailings above guidelines under any pH conditions.

If the tailings material is exposed to more acidic environmental conditions there is an increased risk of metalliferous drainage, particularly if the pH falls below 4.

Assessment on the two LEAF 1313 composite samples (neutral pH extracts and the pH 3.5 – 4 extracts) reported gross alpha and beta activities below screening values (0.5 Bq/L), and acrylamide below limit of reporting. The results indicate that the tailings leachates will not represent a radiation hazard and the potential environmental impact from acrylamide is very low.

The licence holder indicated that the chemical and physical properties of the tailings have been subject to various assessments and are well understood and determined the following.

- The acid forming potential of tailings is classified as NAF, with additional testing indicating no potential for net acid formation with circum-neutral conditions under oxidative conditions.
- No radiation risk to human health due to extremely low total activity concentrations of uranium, thorium and radium relative to applicable limits.
- Tailings are absent of asbestiform materials.
- Water soluble concentrations of lithium and fluoride were very low, with long-term leaching not expected to present any adverse risks to the surrounding environment.
- Dry/coarse tailings leachate may be elevated in fluoride and lithium under circum-neutral conditions.

- Under acidic conditions, enriched metals/metalloids within the dry/coarse tailings reported low net release amounts (less than 7% of total), indicating co-disposal with PAF materials is suitable.
- Very low concentrations or below reporting limits of environmentally significant metals and metalloids.
- Significant dust effects from dry/coarse tailings is not expected, with only 2% of the tailings volume in the very fine fraction (< 10 µm).

2.5.3 DWER technical review EWL2 design and dry stack tailings

The department reviewed the licences holders' technical documents design and construction for EWL2 and the use of dry tailings for construction and sheeting. Reports considered in this review were:

- MBS 2024, Dry/coarse production tailings geochemical analysis.
- MBS 2024, Kinetic tailings geochemical assessment.
- Okane 2025, PAF encapsulation assessment.
- BG&ER 2025 Surface water assessment.

In summary the department considered the proposed design for the merged Eastern Waste Landform includes a 2-metre non-acid forming (NAF) cover to limit oxidation of potentially acid forming (PAF) waste. However, this may be effective short-term but could degrade post closure due to vegetation and termite activity. The department has concerns about long-term seepage, metal release during rainfall and wildfires, and bioaccumulation risks from native plants. While coarse tailings may be used for construction, they are unsuitable for surface cover due to leachable contaminants. Monitoring bores should target key geological features and expand with the landform, and passive samplers are recommended to capture runoff during rainfall. Fencing is advised to restrict wildlife and livestock access post-closure.

Suitability of the Proposed Landform Design and Construction

The documents submitted by the licence holder indicate that O'Kane Consultants Pty Ltd developed the proposed strategy for managing water movement and salt transport within EWL2 and the proposed merged landform. This involved placing a minimum 2-metre-thick cover of non-acid forming (NAF) material over the landform to reduce net percolation (NP) and prevent salt uptake, rather than to control oxygen ingress.

The department considers that this strategy will be effective for a few decades but considers that the NAF cover will progressively become less effective over time. After mine closure, deep-rooted vegetation and termites will progressively create pathways for the ingress of oxygen into material buried within the waste landform and that PAF material would over time be brought up to the surface of the merged waste landform and would undergo oxidation.

The department does not assert that O'Kane Consultants have claimed the primary purpose of the basal layer is to reduce seepage. However, the department considers that O'Kane Consultants may have overestimated the effectiveness of the proposed basal layer of EWL2 in restricting seepage from the landform into nearby waterways. While it may take several decades for a wetting front to penetrate the landform under Pilbara climate conditions (Williams, 2008), it is likely that seepage containing elevated concentrations of certain metals and metalloids will eventually discharge to nearby waterways.

The department considers that much of the acidity that is released from the oxidation of PAF within the mine waste landform will be stored within soluble iron- and aluminium- sulfate minerals that will form in shallow soils near the landform due to the high rate of evaporation in the region. This acidity would then be released into runoff from the dissolution and decomposition of these minerals during periodic intense rainfall events.

In addition, the department does not agree that the NAF cover on the final landform will be geochemically benign. This is due to the following reasons.

- **Metal Uptake by Native Plants:** Some native Australian plants, especially certain Acacia species, release organic acids from their roots that mobilise metals from non-sulfidic mine waste. These metals are absorbed and stored in plant tissues, potentially entering local food webs through insects, grazing wildlife, and livestock.
- **Impact of Fire on Mine Wastes:** Wildfires can heat non-sulfidic mine wastes, releasing toxic metals like hexavalent chromium and arsenic. These metals may then be transported via surface runoff or leachate into groundwater, especially during the first rainfall after a fire. Ash from burnt vegetation can also contribute to metal mobilisation, and this process may recur with future fires.

Based on the information that was provided above, the department considers that the merged Eastern Waste Landform will have the potential to cause adverse environmental and water quality impacts after mine closure. The department considers that these impacts would generally be localised to the vicinity of the Wodgina mine site, except after intense wildfire events when the first-flush runoff during subsequent rainfall could transport metals in soluble and particulates for many kilometres downstream of the Wodgina mine site.

Suitability of the dry-stack tailings for construction purposes during the operational life of the mine

The department considers the coarse tailings material would be suitable for some construction purposes during the life of the Wodgina mining operation.

It is noted that there is high content of acid-leachable lithium, fluoride and some metals in the coarse tailings. The department suggests that this material is not used for surface cover on the mine waste landforms. This is necessary to limit the uptake of some metals by vegetation that can produce acidic root exudates capable of releasing compounds by plant roots to the soil. Noting however, that DMPE will manage and assess the risk further within future revised MCPs.

Location of construction monitoring wells

The department agrees with the licence holder that monitoring bores should be spaced uniformly around EWL2. However, it is more important that the bores are located on significant bedrock fractures which are likely to be important conduits for groundwater flow. Consequently, it is recommended that bore sites are selected using site-specific geological information to ensure that drilling intersects important bedrock fractures.

The delegated officer has reviewed the technical information provided by the licence holder, along with advice from the Department of Mines, Petroleum and Exploration (DMPE) (refer to Section 2.4.1). Recognising DMPE's role in assessing and managing risks associated with mining activities and mine closure, and that DMPE intend to review the licence holders MCP in consideration of the proposed amendments, the delegated officer has determined that the following controls are necessary:

- *Groundwater Monitoring: Monitoring bores should be constructed with short screened intervals (no longer than 6 metres), positioned near the interface between highly weathered regolith (saprolite) and partially weathered bedrock (saprock), where groundwater flow is most likely to occur.*

The department acknowledges that mine closure is overseen by DMPE. DMPE has identified inherent risks associated with the licence holder's proposed EWL2 design and the use of dry stack tailings for construction and sheeting. Accordingly, the department provides the following additional advice:

- **Expansion Monitoring:** As the merged landform expands, additional monitoring bores should be installed. If water level data indicates significant groundwater mounding,

shallow bores should be placed in the upper regolith to assess the potential formation of a perched aquifer near the landform.

- **Surface Water Sampling:** Post-closure, it is expected that contaminant release from the mine waste landform will occur primarily during initial rainfall events (“first-flush” discharges). These events may not be adequately captured by standard surface water monitoring programs. Therefore, the department recommends installing passive rising-stage water samplers in ephemeral waterways adjacent to the completed Eastern Waste Landform.
- **Vegetation and Wildlife Risk Management:** Due to the high risk of lithium and potentially other metals bioaccumulating in vegetation growing on the waste landform post-closure, the department advises that the completed landform be fenced to restrict access by livestock and certain wildlife. Ongoing monitoring of fence integrity is also recommended to ensure continued effectiveness.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Dry stack tailings for sheeting			
Dust	Loading, unloading mixing, screening and placement of material	Air/windborne pathway	The assessment of dry stack material stated that the coarse nature of the tailings meant dust generation would be limited. The moisture content at time of deposition will also be unlikely to facilitate dust generation. Dust suppression as required via watercarts. In the event dry stack tailings are left for an extended period of time on the pad, the material will be sprayed with water to limit dust generation.
Contaminated surface water and seepage	Tailings sheeting	Surface water runoff	Dry/ coarse tailings are expected to remain circumneutral and not produce acidic drainage. Dry stack tailings do not exceed 735,000 m ³ per annum. Low moisture content in the dry stack tailings poses low risk of seepage. Dry stack tailings will be co-mingled with NAF mine waste, reducing erosion potential. Material will not be placed within drainage lines, and sufficient surface water controls will be implemented to avoid potential run-off into surrounding vegetation and

Emission	Sources	Potential pathways	Proposed controls
			drainage lines. Record keeping and reporting of the locations where dry stack tailings are utilised as construction / sheeting material.
EWL2 dry stack tailings			
Contaminated and sediment laden stormwater water	Large flood events over EWL2	Surface water runoff	Design specifications and controls to ensure interactions with hydrogeological conditions and associated risks are mitigated: • A minimum 2-metre-thick base layer over drainage lines and low relief topography, as cross section valley fill. • Topography with a vertical relief exceeding 2 m above the neighboring drainage line does not require a base layer. • Along the southern creek line, the base layer should have a minimum depth of 3 m, decreasing as the topography rises out of the creek. • Assessment and management of the diversion infrastructure in relation to the disturbance footprint and landforms will be subject to DEMIRS' assessment of the submitted Mining Proposal application (Reg ID 500604). All contaminated water contained and treated onsite before returning to downstream systems. All clean water should be diverted around disturbance footprints to downstream environments. The EWL outer slopes (and upper surface) retain the wide back sloping berms. The berms have been sized to retain surface water runoff from the uphill slopes (the 1 in 2000 annual exceedance probability rainfall event) and accumulated sediments deposited into the berm. The 10 m high, 20-degree face slopes retain the 0.5 m thick armouring specification, which minimises erosion risk. The EWL2 preferred design requirements are summarised as follows: • Base Layer: minimum 2 m thick base layer over drainage lines and low relief topography, as cross-section valley fill. • Base Layer: 3 m thick base layer required at the toe of the southern landform and decreases in thickness into elevated natural ground. • Base Layer: Longitudinally along drainage lines, the depth of fill remains a 2 m thick base layer towards the headwaters of definable drainage lines. • Base Layer: No base layer required on slopes or areas of high topographic relief. • Cover System – Flat Areas: Minimum 2 m NAF material • Cover layer over PAF material. No rock armour. Growth media layer. • Cover System – Slopes: Minimum 2 m of NAF material cover layer over PAF material, excluding erosion protection layer. 0.5 m of NAF rock armour on batter slopes. • Dry tailings – Co-mingled layers within the PAF material for each lift. • Place sufficient NAF material over PAF material (as dumped) waste and regrade to a 20° batter slope to
Contaminated seepage	Groundwater mounding under EWL2	Seepage to soils and groundwater and surface water runoff	

Emission	Sources	Potential pathways	Proposed controls
			achieve a minimum 2.5 metre thickness (2 metre cover system and 0.5 metre rock armour); or • Regrade the PAF material (as dumped) to a 20° batter slope and place a minimum 2.5 metre thick NAF material layer at the top (2 metre cover system and 0.5 metre rock armour). • Addition of eight groundwater monitoring wells monitored in two stages, (installing three wells within nine months of approval and the remaining five prior to deposition within the southern section of EWL2).
Acid leachate	Oxidation of PAF materials within EWL2	Seepage to soils and ground and surface waters	The finer particle size of the coarse tailings will cause the encapsulation cells to have lower permeability reducing potential for ingress of air and water and reducing the potential for sulfide oxidation of PAF materials. Lowering of seepage volume from the encapsulation cells. The 2 metre thick store and release cover system is retained. Notably, no PAF materials or tailings should be placed within the cover system to ensure long term encapsulation of these materials. A final 2 metre (minimum) thick store and release type cover system is specified, constructed from NAF oxide waste. PAF waste material is scheduled for deposition in the EWL expansion, so the moisture store and release capacity of the cover system maximises water availability for vegetation and limits rainfall percolating into the underlying co-disposed (NAF/PAF) waste present in the existing EWL.
Anson C TSF			
Anson C TSF supernatant	Operation of Anson C	Seepage and infiltration of supernatant water, groundwater mounding, overtopping of TSF	Hydrogeological assessment and seepage models undertaken to determine potential seepage points. Groundwater seepage recovery system in place for existing and proposed tailings deposition Implementation of a TARP and Operational Monitoring and Mitigation Plan to monitor and manage seepage, including all contaminated water contained and treated onsite before returning to downstream systems. All clean water should be diverted around disturbance footprints to downstream environments.
Spillage of tailings and decant return water	Pipeline ruptures	Direct discharges to land and infiltration to soil	As per works approval W6734/2022/1 HDPE Pipe (adequate pipe class) Pressure gauges and pump shutdown switches fitted Minimise flow velocity. Bunding and catchpits to pipeline route. Periodic replacement of pipeline bends. Pipe design by specialist. Operations manual detailing deposition method. Training of operators
Dust	Dry tailings (particulates) on exposed beaches potentially containing concentrations of elements with environmental significance	Air / windborne pathway	As per works approval W6734/2022/1 Cyclic deposition maintaining a wet beach. Location within pit will provide natural protection to wind when compared to above ground TSF. Dust monitoring of surrounding environment down wind. Progressive capping to TSF beach as a maximum level is approached. Self-shedding gradient to capping. Dust suppression techniques.

Emission	Sources	Potential pathways	Proposed controls
			Low levels of naturally occurring radioactivity in tailings. Tailings were not considered radioactive as per WA Radiation Safety Regulations 1983 (in accordance with the Wodgina Radiation Management plan - D700701-SAF-PLN-0014). Regulation of radiation safety on mining operations is the responsibility of DMIRS under the Work Health and Safety (WHS) laws.

3.1.2 Receptors

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

Table 2 below provides a summary of potential human and environmental receptors that may be impacted because of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

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

Environmental receptors	Distance from prescribed activity
Threatened and/or priority flora	Six conservation significant species are found within the premises boundary: <i>Abutilon aff. Hannii</i> (Potentially undescribed) <i>Euphorbia clementii</i> (P3) <i>Heliotropium muticum</i> (P3) <i>Terminalia supranitifolia</i> (P3) <i>Triodia chichesterensis</i> (P3) <i>Vigna triodiophila</i> (P3)
Priority Ecological Communities (PEC) and Threatened Ecological Communities (TEC)	The nearest PEC is more than 6 km from the premises boundary.
Threatened and/or priority fauna	Numerous Threatened and Priority Fauna are located within the premises boundary.
Threatened and/or priority fauna	The premises is located within the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act) Proclaimed Pilbara Groundwater Area. There are no nearby stock bores. The closest bore (not operated by the licence holder) that is for camp use is more than 10 km from the premises. Groundwater levels at the Atlas In-Pit TSF area range from 10 metres below ground level (mBGL) in areas surrounding the greenstone belt to 55 – 95 mBGL within the greenstone belt located on the high ridges. This is below the base of the Atlas pits where base elevations range from 40 to 80 mbgl. Groundwater quality: generally alkaline (pH 7.4 to 8.4), fresh to brackish salinity (510 to 3,200 mg/L total dissolved solids) and very hard (406 to 1,600 mg CaCO₃/L). Low environmentally significant metals and metalloids including arsenic, cadmium, cobalt, lead, mercury, selenium and thallium were detected; and Variable in lithium content, ranging from 0.08 mg/L (groundwater in non-lithium bearing

	ultramafic rocks) to 9.5 mg/L (groundwater associated with pegmatite dykes).
Major watercourses/ waterbodies	The premises is located within the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act) Proclaimed Pilbara Surface Water Area. No permanent surface water systems intersect the Anson/EWL2 areas, although semi-permanent and permanent pools are located within the premises boundary (approximately 1km south west of Atlas in-pit TSF). The premises (entire EWL2) is predominantly situated within the western sub-catchment of the Turner River that drains generally in a north-east direction towards the Turner River approximately 9 km downstream of the premises. Ephemeral drainages located within premises. As the Anson pits do not have a large catchment of water flowing towards them, no surface water diversions were proposed. EWL2 has proposed surface water drainage towards the Turner River to reduce erosion.
Aboriginal heritage site	A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Cultural Heritage Inquiry System (AHIS) was undertaken in August 2023 found there to be seventeen (17) ACH places in the ACH Directory that relate to the Prescribed Premises. One place, GULINDJINA YAMBARA, is a registered site and overlaps with the Train 4 development area. No sites will be impacted or disturbed due to construction of infrastructure proposed.

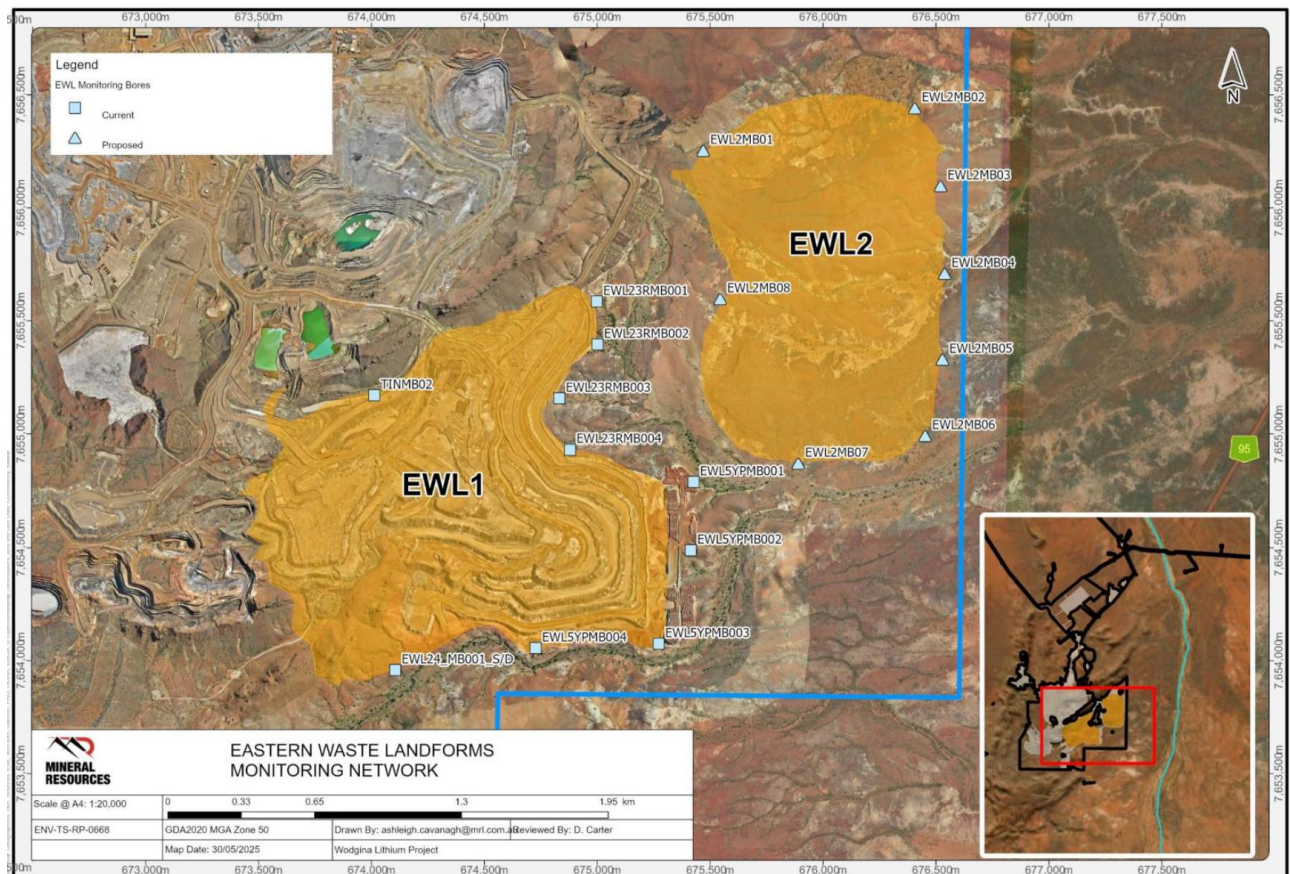


Figure 1: EWL1 and EWL2 deposition footprints.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and consider potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section

3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the licence holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holders' controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The revised licence L4328/1998/10 that accompanies this Amendment Report authorises emissions associated with the operation of the premises i.e. mining activities.

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

Table 3. Risk assessment of potential emissions and discharges from the premises during operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence holder's controls				
Operation								
Operation of Anson C as part of the combined TSF infrastructure including deposition of tailings into Atlas in-pit TSF	Dust	Air/windborne pathway causing impacts to vegetation health due to dust deposition leading to reduced ability for photosynthesis and smothering	Surrounding vegetation	As per works approval W6734/2022/1, cyclic deposition maintaining a wet beach, location within pit will provide natural protection to wind when compared to above ground SF, dust monitoring of surrounding environment down wind, progressive capping to TSF beach as a maximum level is approached, self-shedding gradient to capping, dust suppression techniques. Refer to Section 3.1.1	Minimal impact onsite. C = Slight The risk event will probably not occur in most circumstances L = Unlikely Low Risk	Y	Licence holders' controls	No additional regulatory controls, existing licence controls will manage the risk.
	TSF supernatant containing concentrations of elements with environmental significance	Seepage and infiltration of supernatant water through pit walls and base contaminating soil and reduced groundwater. Groundwater mounding resulting in seepage expression on surface impacting vegetation and reducing surface water quality. Overtopping tailings resulting in direct discharge to land and infiltration to soil reducing soil and surface water quality and impacting health of surrounding vegetation.	Groundwater (>5 mbgl) with flow to the northeast toward the existing Cassiterite Pit mine void, to the west southwest towards the Yule River and to the east- southeast towards Turner River West). Land/soils Surrounding Vegetation, including Priority Flora (P3) Surface water located south/south east of proposed in-pit TSF, including its potential hyporheic community Aboriginal Heritage Site	Hydrogeological and seepage modelling, TARP/operational and monitoring mitigation plan, groundwater recovery bores. Refer to Section 3.1.1	Mid level onsite impacts, low level local offsite impacts. C = Moderate The risk event could occur at some time. L = Possible Medium Risk	Y	Licence holders' controls	The delegated officer considered the licence holder's compliance with construction and commissioning requirements under Works Approval W6734/2022/1, the existing controls for time-limited operations under W6734, and the current management measures for the TSF facilities. Based on this assessment, the officer determined that the risk to receptors is medium. The existing licence operational controls, along with the time-limited operational controls in W6734, were deemed sufficient to manage this risk and will be regulated through conditions in the licence. DWER notes that any potential direct impact on Aboriginal Heritage Sites is regulated under <i>Aboriginal Heritage Act 1972</i> . The applicant is reminded of its obligations under the AH Act and requirement for continued engagement with the Aboriginal Corporation, and DPLH and requirements (existing and new) under the Aboriginal Heritage Act 1972 and any related legislation.
	Spillage of tailings and decant return water through leaks, pipeline ruptures or failure	Direct discharges to land and infiltration to soil resulting in reduced soil and surface water quality and impacting health of surrounding vegetation.	Land/soils Surrounding Vegetation Surface water Aboriginal Heritage Site	As per works approval W6734/2022/1, HDPE Pipe (adequate pipe class), pressure gauges and pump shutdown switches fitted, minimise flow velocity, bunding and catchpits to pipeline route, periodic replacement of pipeline bends, pipe design by specialist, operations manual detailing deposition method, training of operators. Refer to Section 3.1.1	Mid-level onsite impacts, low level local offsite impacts. C = Moderate The risk event could occur at some time. L = Possible Medium Risk	Y	Licence holders' controls	Licence holder controls to manage risk related to new tailings delivery and return water infrastructure, that are consistent with existing licence requirements and licence holders' commitments are imposed as conditions. Existing pipelines and infrastructure within the processing plant continue to be managed as per the existing licence.
Storage, transport, and use of dry stack tailings for sheeting and construction materials.	Dust	Air/windborne pathway causing impacts to vegetation health due to dust deposition leading to reduced ability for photosynthesis and smothering	Surrounding vegetation	Water carts, to limit dust as required on stockpiles and dry stack material, Refer to Section 3.1.1	Minimal impact onsite. C = Slight The risk event will probably not occur in most circumstances L = Unlikely Low Risk	Y	Licence holders' controls	No additional regulatory controls, licence holders' control considered suitable to manage the risk.
	Contaminated stormwater, seepage and	Overland runoff and infiltration to groundwater leading to	Surrounding soils, vegetation. RIWI groundwater and surface water.	Dry stack tailings are commingled with NAF mine waste. Material not placed in drainage lines, water	C = High level onsite impact, mid-level local scale impact, low level	Y	Licence holders'	The delegated officer reviewed the licence holder's proposed controls alongside the department's technical assessment of dry stack tailings use. Based on this review, the delegated officer determined that the risk to downstream surface water, groundwater and surrounding vegetation is

Licence: L4328/1989/10

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence holder's controls				
	acid mine drainage (AMD)	contamination of soil, ground and surface water ecosystem disturbance and /or impact to surface and ground water quality.		controls to prevent runoff into vegetation. Refer to Section 3.1.1	wide scale impact. C= High The risk event could occur in most circumstances L = Possible High Risk		controls Condition 3 Table 4 Condition 9 Table 4 Condition 17 Table 8 Condition 27 Table 11	high. In making this determination, the delegated officer considered advice from the DMPE (refer to Section 2.4.1) and acknowledges its regulatory role in assessing and managing risks associated with mining activities and mine closure. As such, the licence holder's controls are considered critical for risk management and have been formalised as regulatory conditions. The officer also notes that the department's technical review identified risks associated with using dry stack tailings for construction and sheeting. These risks have been acknowledged by the DMPE and will be addressed in future revision of the MCP. The delegated officer provides the following advice to the licence holder: There is high content of acid-leachable lithium, fluoride and some metals in the coarse tailings. The department suggests that this material is not used for surface cover on the mine waste landforms. This is necessary to limit the uptake of some metals by vegetation that can produce acidic root exudates capable of releasing compounds by plant roots to the soil (see Section 2.5.3).
Storage, transport and deposition of dry stack tailings into EWL2 including tailings delivery and return water pipelines.	Dust	Air/windborne pathway causing impacts to vegetation health due to dust deposition leading to reduced ability for photosynthesis and smothering	Surrounding vegetation	Water carts, to limit dust as required on stockpiles and dry stack material, Refer to Section 3.1.1	Minimal impact onsite. C = Slight The risk event will probably not occur in most circumstances L = Unlikely Low Risk	Y	Licence holders' controls	No additional regulatory controls, licence holders' control considered suitable to manage the risk.
	Groundwater seepage. Surface water runoff in large rainfall events of AMD/PAF. Contaminated surface/ground water. Oxidation of PAF materials within EWL2	Contamination of underlying soil and groundwater, impacting water quality and dependent ecosystem health. Downstream impact on surface water dependent ecosystems. Acidic groundwater mounding and oxidation of PAF materials seeping and impacting water quality and dependent ecosystem.	Surrounding soils, vegetation. RIWI groundwater and surface water.	Design specifications and requirements for the development of EWL2. Addition of 8 groundwater monitoring wells. Refer to Section 3.1.1	C = High level onsite impact, mid-level local scale impact, low level wide scale impact. C= High The risk event could occur in most circumstances L = Possible High Risk	N	Licence holders' controls Condition 3 Table 2 Condition 3 Table 2 Condition 12 Table 6 Condition 37	The delegated officer assessed the licence holder's proposed controls in conjunction with the Department's technical evaluation of the dry stack tailings within EWL2. Based on this assessment, the delegated officer determined that the risk to downstream surface water, groundwater, and surrounding vegetation is high. In reaching this conclusion, the delegated officer considered advice from the DMPE (refer to Section 2.4.1) and acknowledges its regulatory responsibility for assessing and managing risks associated with mining activities and mine closure. Accordingly, the licence holder's proposed controls are deemed critical for risk mitigation and have been formalised as regulatory conditions. Furthermore, considering the site's hydrogeology and the fact that a clearing permit for the EWL2 area has not yet been granted, the delegated officer has determined that the following requirements apply: - Monitoring bores proposed by the licence holder must be constructed with short screened intervals (no longer than 6 metres) and positioned near the interface between highly weathered regolith (saprolite) and partially weathered bedrock (saprock), where groundwater flow is most likely to occur. - Clearing Permit CPS11122/1 must be granted prior to the commencement of works on EWL2. The delegated officer also notes that the department's technical review identified risks associated with the suitability of the proposed landform design and construction of the EWL2. These risks have been acknowledged by the DMPE and will be addressed in future revision of the MCP. The delegated officer provides the following advice to the licence holder (see Section 2.5.3). - PAF Oxidation Strategy: - O'Kane Consultants proposed a strategy to limit oxidation of potentially acid forming (PAF) material using a ≥2m thick non-acid forming (NAF) cover. The department considers this strategy effective for several decades but expects its effectiveness to decline over time due to biological activity (e.g., vegetation, termites). - Long-Term Risks: - Over time, oxygen ingress and surface exposure of PAF material may lead to oxidation and environmental impacts. The basal layer of EWL2 is likely less effective than claimed in preventing seepage into nearby waterways. - Concerns with NAF Cover: The department disagrees that the NAF cover is geochemically benign due to: - Metal Uptake by Native Plants: Certain species (e.g., Acacia) can mobilise and

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence holder's controls				
								accumulate metals, potentially entering food webs. • Impact of Fire: Wildfires can release toxic metals (e.g., hexavalent chromium, arsenic) from mine waste, which may be mobilised during post-fire rainfall events. ➤ Overall Environmental Risk: • The merged Eastern Waste Landform poses potential long-term environmental and water quality risks. • Impacts are expected to be localised but could extend downstream following intense wildfires and subsequent rainfall.

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

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

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Town of Port Hedland advised of proposal on 25 July 2025	The Town of Port Hedland replied on 19 August 2025 outlining that The Town's Local Planning Strategy highlights the Great Northern Highway's surrounding landscape as a key visual corridor, recommending a standard 200m setback to protect its scenic value. However, due to the scale and nature of the proposed Eastern Waste Landform (EWL2), which reduces the setback to approximately one kilometre, a minimum one-kilometre buffer is advised to maintain visual amenity. Alternatively, a reduced setback may be considered if supported by a Visual Landscape Assessment Strategy. Additional recommended conditions include restoring native vegetation on EWL2, implementing stormwater and dust management measures, and clearly demarcating operational boundaries.	The delegated officer notes this information and considers that the expansion of the EWL2 area is setback roughly 1 kilometre from the Great Northern Highway.
Department of Mines, Petroleum and Exploration (DMPE) advised of proposal 25 July 2025.	DMPE replied on 28 August 2025 see section 2.4.1 for details.	The delegated officer notes this information.
DWER Water Source Protection Planning (WSPP) advised of the proposal on 25 July 2025.	WSPP replied on the 28 July 2025 and advised that the proposed tailings storage area / Anson pits partially lies within the Yule River Catchment (upstream of the catchment of the Yule River Water Reserve) and noting there are multiple surface water runoff sites there are no monitoring of the Yule river catchment and the downstream drinking water source. Additional monitoring sites downstream of the tailing's facility including one groundwater monitoring bore and a second surface water monitoring site is recommended.	The delegated officer notes this information and agrees there is the possibility that a small level of drainage from the combined Anson pits could externally drain to the Yule River. The licence holder has requested additional time to submit an overarching Water Management Plan/TARP by 30 April 2026, which describes monitoring, sampling and analysis, and management response requirements. The delegated officer will advise that downstream monitoring of the Yule River to include downstream monitoring sites for the detection and management of impacts to the

		Yule River Water Reserve is included.
Licence holder was provided with draft amendment on 25 September 2025	The licence holder responded on 17 October 2025, Refer to Appendix 1	Refer to Appendix 1

5. Decision

The delegated officer has determined to grant an amendment to Licence L4328/1989/10. In making this decision, the officer considered advice from DMPE, including the acknowledged risks associated with the Eastern Waste Landform 2 (EWL2) expansion and the use of dry stack tailings for construction and sheeting.

It was noted that DMPE will further assess these risks in the revised Mine Closure Plan (MCP), due in 2028. Given DMPE's responsibility for overseeing mine closure, rehabilitation, and ensuring environmentally sound outcomes, the delegated officer considered that DMPE ultimately bears the risk associated with the proposed landform design and construction by the licence holder.

The following amendments have been granted:

- Dry Stack Tailings Deposition into EWL2**
 Approval has been granted to increase the deposition area for co-mingled tailings from 209.2 ha to 363.8 ha.
- Use of Dry Stack Tailings for Sheeting and Construction**
 The licence now authorises the use of up to 735,000 m³ per annum of co-mingled dry stack tailings for sheeting and construction purposes.
- Removal and Inclusion of Groundwater Infrastructure**
 The following constructed wells have been removed from the licence:
 EWL5YPMB001, EWL5YPMB002, EWL5YPMB003, EWL5YPMB004,
 EWL5YPMB001_S, EWL5YPMB001_D, TSF EXT RB1.
 The following proposed wells have been added:
 EWL2MB01, EWL2MB02, EWL2MB03, EWL2MB04, EWL2MB05, EWL2MB06,
 EWL2MB07, EWL2MB08.
- Addition of Water Management Plan Condition**
 The delegated officer has approved the inclusion of a combined surface water management, ecotoxicology, and Trigger Action Response Plan (TARP). The licence holder is advised to incorporate downstream monitoring of both surface and groundwater to detect and mitigate environmental impacts on the Yule River Water Reserve.
- Process Monitoring Method Changes**
 Approval has been granted to remove duplicated requirements for groundwater standing water level monitoring.
- Continuation of Anson C Operations**
 The delegated officer has authorised the continued operation of Anson C beyond the time-limited operations under Works Approval W6734/2022/1. These operations will now be incorporated into the revised licence as part of the combined Anson Tailings Storage Facility (TSF).

6. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined

that a revised licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

6.1 Summary of amendments

Table 5 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 5: Summary of licence amendments

Condition no.	Proposed amendments
Licence History	Additional of EO application column and licence amendment summary
Condition 3 Table 2	New condition for clearing permit to be granted before works on EWL2. Update area deposition for EWL1 and 2 to 363.8 ha Addition of EWL2 design specifications. Inclusion of the use of dry stack tailings across the disturbance footprint.
Condition 9 Table 4	Addition of Anson C Pit and conditions for operation, and renaming of Anson A, B and C Pits to Combined Anson TSF. Addition of operational conditions for dry stack tailings for construction and sheeting material.
Condition 12 Table 6	Update of monitoring wells installation requirements and update of monitoring wells to be installed.
Condition 17 Table 8	Update of, and inclusion of Anson C Pit and rename to Combined Anson Pits. Inclusion of dry stack tailings.
Condition 27 Table 11	Inclusion of dry stack tailings for input and outputs.
Condition 28 Table 12	Removal of EWL groundwater monitoring bores to measure water level to remove duplication. Update of, and inclusion of Anson C Pit and rename to Combined Anson Pits.
Condition 29 Table 13	Update of, and inclusion of Anson C Pit and rename to Combined Anson Pits.
Condition 32 Table 14	Update of, and inclusion of Anson C Pit and rename to Combined Anson Pits.
Condition 37	New condition for the requirement of an overarching Water Management Plan.
Schedule 1 Figures	Relabeled Figures 12 and 16
Schedule 3 Table 13	Update of, and inclusion of Anson C Pit and rename to Combined Anson Pits.

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Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Summary of licence holder's comment	Department's response
Licence		
Condition 3 Table 2 Management of waste	Licence holder requested to remove the condition requiring CPS11122/1 to be approved prior to dry stack tailing, as clearing can occur within existing CPS10346/1 and under exemptions to the Environmental protection (Clearing of Native Vegetation) Regulations 2004.	The condition will be retained but updated to reflect the use of EWL2 under the existing Clearing Permit CPS10346/1 and applicable exemptions provided by the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i> .
	Licence holder noted two administrative typo's.	Typo's have been updated.
	Licence holder requested that condition on dry stack tailings EWL1 be removed, and combine EWL1 and EWL2 cover system conditions, as cover system EWL1 and EWL2 are the same in MP REG ID 500604, noting that the cover system for EWL1 was amended in this MP revision.	The delegated officer will retain the condition. This amendment relates to EWL 2 and any further changes to EWL1 will require a separate amendment.
	Licence holder requested revising the wording for "site-wide use for construction/sheeting within approved disturbance footprint" to not be confused with Table 8 "construction and sheeting use within the premises boundary".	The delegated officer agrees that the wording is similar, but there are clear differences in area references, this is, <i>approved disturbance footprint</i> verses <i>premises boundary</i> . Where an approved disturbance footprint refers to a portion of the premises area, whereas the premises boundary refers to the entire premises area. No changes to condition.
Condition 9 Table 4 Infrastructure and equipment requirements	The licence holder requested that the maximum limit for dry stack tailings is removed as the volume is arbitrary and will not have a tangible impact on environmental management	The delegated officer has assessed the licence changes based on the maximum volume provided by the licence holder. An uncapped volume is considered unreasonable and has not been subject to risk assessment. Therefore, the volume limit will remain in place, noting that it may be revised through a future licence amendment.
Condition 12 Table 6	The licence holder has provided an additional Figure 17 that includes all EWL1 and EWL2 groundwater monitoring bores.	References and Figure 17 have been updated.
	The licence holder has requested that monitoring well construction and operation is within 9 months of the issue of amendment for EWL2MB01, EWL2MB02, EWL2MB03, and before disposal of dry stack tailings in the southern half for EWL2MB04 – 08 (inclusive), This will be in line with	The delegated officer agrees and has updated the condition to demonstrate progressive construction of monitoring wells.

Condition	Summary of licence holder's comment	Department's response
	clearing permit conditions and allows for progressive installation.	
Condition 17, Table 8 Authorised discharge points	The licence holder provided an updated Figure 17 to demonstrate the location of the EWL from Figure 2.	References and Figure 17 have been updated.
Schedule 3, Table 13 Monitoring bore location groups.	The licence holder provided EWL2 bores and Figure 17 for inclusion for bores to be monitored once installed.	References and Figure 17 have been updated.
Decision Report		
Section 2.5.1	The licence holder indicated that there is inconsistent use of "current" in the first paragraph, i.e. " <i>current mining sequence</i> " and " <i>current encapsulation approach</i> " are referring to different timeframes. The licence holder provided rewritten paragraphs.	The delegated officer notes this and will change: (A) " <i>current mining sequence</i> " to " <i>existing mining sequence</i> ". • " <i>current longer term planning</i> " to " <i>present longer term planning</i> " to remove any ambiguity.
Section 2.5.3	The licence holder requests that the statement " <i>that coarse tailings are unsuitable for surface cover is removed</i> " as this has not been planned or proposed.	The licence holder acknowledges this however the text " <i>While coarse tailings may be used for construction, they are unsuitable for surface cover due to leachable contaminants</i> ", does not explicitly imply that the licence holder has proposed this, it simply states a technical limitation or a fact about the coarse tailings. Statement will not be removed.
Section 2.5.3	The licence holder clarified that the purpose of the cover is not to manage oxygen ingress. However, a reduction in oxygen ingress does occur as a secondary effect of co-mingling dry stack tailings with PAF waste rock. The licence holder requested that the section be revised to reflect the actual intended function of the cover, which is to manage net percolation by promoting downward water movement and reducing salt uptake.	The delegated officer has updated the section.
Section 2.5.3	The licence holder disputed the credibility the departments technical review on the EWL2 design and dry stack tailings and requested that the following be removed from the risk assessment, including: - that termite or rodent activity could result in oxygen ingress pathways and PAF material being brought to the surface; - that metals maybe mobilised by organic acids produced by tree roots, and	The delegated officer acknowledges the licence holder's views. The information provided was intended as advice and, while referenced in the risk assessment, was not considered in the final risk determination. The delegated officer notes that the potential risk will be addressed by DMPE in future revisions of the Mine Closure Plan (MCP). The advice will not be removed.

Condition	Summary of licence holder's comment	Department's response
	that the impact of wildfire on mine wastes resulting in release and transport of hexavalent chromium and arsenic via surface runoff or leachate,	
Section 2.5.3	The licence holder has indicated that Okane (2025), nor MARBL have claimed that the aim of the base layer is to reduce seepage and requests that this claim is removed.	The delegated notes this and has reworded the paragraph removing any claim.