



## Application for Licence Amendment

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

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<b>Licence Number</b>	L8234/2008/2
<b>Licence Holder</b>	Robe River Mining Co. Pty Ltd
<b>ACN</b>	008 694 246
<b>File Number</b>	DER2014/000868-1
<b>Premises</b>	Mesa A Warramboe Iron Ore Mine  ML248SA, G08/82, G08/85, G08/90, L08/166, L08/177 and L08/178  FORTESCUE WA 6716  As defined by the coordinates in Schedule 2 of the Revised Licence
<b>Date of Report</b>	04 December 2024 (FINAL)
<b>Decision</b>	Revised licence granted

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## 1. Decision summary

Licence L8234/2008/2 is held by Robe River Mining Co. Pty Ltd (Licence Holder) for the Mesa A Warramboe Iron Ore Mine (the Premises), located approximately 43 km west of Pannawonica in the Pilbara region of Western Australia.

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 Licence L8234/2008/2 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 Amendment summary

On 24 September 2024, the Licence Holder submitted an application (Rio Tinto 2024a) to the department to amend Licence L8234/2008/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Inclusion of Category 64 for the Mesa C Class II Inert Waste Dump Landfill (Mesa C Waste Dump Landfill) constructed under Works Approval W6284/2019/1 (refer to section 2.2.1);
- Provision for the construction and operation of subsequent landfills within the prescribed premises boundary (refer to section 2.2.1); and
- Change to the frequency of monitoring for the Tailings Storage Facility (TSF) 1 and TSF2 monitoring bores (refer to section 2.2.2).

This amendment is limited only to changes to Category 64 activities. Table 1 below outlines the proposed changes to the existing Licence.

**Table 1: Proposed design capacity changes**

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
5	35,000,000 tonnes per annual period	No change	N/A
6	7,000,000 tonnes per annual period	No change	N/A
12	10,000,000 tonnes per annual period	No change	N/A
54	341 cubic metres per day	No change	N/A
64	N/A	2,000 tonnes per annual period	Inclusion of Category 64 for the Mesa C Waste Dump Landfill and subsequent landfill facilities within the prescribed premises boundary

### 2.2.1 Category 64 activities

The Mesa C Waste Dump Landfill was constructed under W6284/2019/1 and approved to accept the following waste types as defined by the *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)* (DWER 2019):

- Inert Waste Type 1 (conveyor belts, concrete and steel);
- Inert Waste Type 2 (tyres and plastics); and
- Putrescible waste (wooden packaging and pallets only).

An Environmental Construction Report for the Mesa C Waste Dump Landfill was received by the department on 27 May 2024 (Rio Tinto 2024b).

W6284/2019/1 also assessed subsequent landfills that would allow ongoing disposal of up to 1,000 tonnes of wastes per annual period at the Premises. These subsequent landfill facilities could include waste dump landfills (to accept those waste types listed above); or putrescible landfills which would accept the following (Rio Tinto 2019):

- Clean Fill;
- Inert Waste Types 1 and 2;
- Putrescible Waste;
- Special Waste Type 1; and
- Other waste that comply with the Class II criteria as defined in the *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)* (DWER 2019).

The Licence Holder is proposing under this amendment application the inclusion of Category 64 with a design capacity of 2,000 tonnes of waste per annual period; and the provision to construct and operate subsequent landfills within the prescribed premises boundary.

The waste acceptance criteria for the waste dump landfills has not changed from W6284/2019/1.

The Licence Holder is now proposing that the putrescible landfills accept clean fill; inert waste types 1 and 2; putrescible waste; special waste types 1 and 2 (noting special waste type 2 was not assessed under W6284/2019/1); and other wastes that comply with the Class II criteria as defined in the *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)* (DWER 2019).

The department requested that the Licence Holder advise what the 'other wastes' types referenced related to. The Licence Holder has stated the request to include 'other wastes that comply with the Class II criteria as defined in Landfill Definitions' was to specifically allow the disposal of uncontaminated fill materials that do not meet the definition of 'Clean Fill' (excavated natural material) (Rio Tinto 2024c).

Based on the above, the department has included other waste types (such as uncontaminated fill) that complies with the Class II criteria as defined in the Landfill Definitions to Condition 6, Table 5 for the putrescible landfills.

Refer to section 3 for the department's risk assessment for both waste dump and putrescible landfill facilities within the prescribed premises boundary.

### 2.2.2 TSF1 and TSF2 monitoring bores

On the 04 July 2023, the Existing Licence was amended to include the operation of the Mesa A TSF1 and TSF2 (previously named Warramboe Waste Fines Storage Facility Pit 1/2 and Pit 3) which was constructed under W6284/2019/1.

Under that amendment, Schedule 3: Monitoring requirements for the monthly monitoring of

TSF1 and TSF2 monitoring bores was added. The Licence Holder requested under the 21 day comment period that the frequency of monitoring for these bores be revised from monthly to quarterly to align with the 'medium' risk rating for the facility. Stating that if exceedances of baseline groundwater chemistry were observed, the frequency of monitoring at these bores could be increased to monthly.

The department accepted this request, but the licence was not updated with the change.

During this amendment, Schedule 3: Monitoring frequency for the TSF1 and TSF2 monitoring bores has been changed from monthly to quarterly.

### 2.3 Part IV of the EP Act

The Mesa A Hub – Revised Proposal was assessed by the Environmental Protection Authority (EPA) and approved under Ministerial Statement (MS) 1112.

- Condition 6 relates to implementing the *Mesa A Troglifauna Management Plan*.
- Condition 7 relates to Flora and Vegetation – Sand Sheet Vegetation (Robe Valley) Priority Ecological Community (PEC): ensuring there is no direct impact and/or minimising indirect impacts (as far as practicable) to the Sand Sheet Vegetation (Robe Valley) PEC so that the biological diversity and ecological integrity of the PEC is maintained.
- Condition 8 relates to Flora and Vegetation – Priority Flora: avoiding where possible and minimising direct and indirect impacts to *Abutilon* sp. Onslow (F.Smith s.n. 10/9/61).
- Condition 9 relates to Terrestrial Fauna Habitat – Conservation Significant Fauna Species; Ghost Bat (*Macroderma gigas*) and Northern Quoll (*Dasyurus hallucatus*): ensuring there is no irreversible impact to 'breakaways and gullies' habitat retained in the escarpments of Mesa A, Mesa B and Mesa C Mining Exclusion Zones, other than existing and authorised disturbance.
- Condition 10 relates to Subterranean Fauna – Troglifauna.
- Condition 11 relates to Inland Waters:
  - ensuring that groundwater levels are maintained to ensure no impact on riparian vegetation of the Robe River as a result of groundwater abstraction and/or Licence: L8234/2008/2 4 dewatering; and
  - ensuring there is no irreversible impact to the health of riparian vegetation of Warramboe Creek as a result of groundwater abstraction and/or dewatering and/or as a result surplus water discharge.
- Condition 12 relates to Aboriginal Heritage.
- Condition 13 relates to Rehabilitation and Decommissioning.

Requirements of MS 1112 are not re-assessed in this Amendment Report and are not duplicated as conditions in the existing Licence.

## 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 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Licence Holder controls (Rio Tinto 2024a)**

Emission	Sources	Potential pathways	Proposed controls
<b>Construction</b>			
Dust	Construction of new landfill facilities	Air/windborne pathway	Landfill facilities will be located within prescribed premises boundary.
<b>Operation</b>			
Dust	Earthmoving	Air/windborne pathway	Landfill facilities located within the prescribed premises boundary.
Odour associated with putrescible landfill	Operation of putrescible and waste dump landfills located within the prescribed premises boundary	Air/windborne pathway	Putrescible landfill to be fenced to an appropriate height, gated and locked. Fencing surrounding the perimeter of the putrescible landfill facilities regularly inspected for damage and cleared of waste.
Windblown waste		Air/windborne pathway	Tipping area of putrescible landfill is not to be greater than 30 m in length and 2 m above the ground height. Waste in the landfill facilities to be covered on an ad-hoc basis when required, to at least 200 mm at final landform design.
Fire		Air/windborne pathway	Putrescible landfill to have a firebreak at least 3 m in width around the boundary of the landfill.
Leachate from putrescible landfills		Surface water runoff, seepage to soils and groundwater	Landfill facilities to be located so that the vertical distance between the waste and the highest seasonal and expected post mining ground water level is no less than 3 m.
Contaminated stormwater		Surface water runoff	Landfill facilities to: <ul style="list-style-type: none"> <li>be located more than 500 m from the Robe River and Warramboe Creek.</li> <li>be located more than 100 m from any permanent or perennial watercourse.</li> <li>include surface water management structures to divert surface water flows away from the landfill.</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
			<ul style="list-style-type: none"> <li>include additional surface water management structures within the landfill to retain any surface water that has come into contact with waste.</li> </ul>

### 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 3 below provides a summary of potential 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 3: Environmental receptors and distance from prescribed activity**

Environmental receptors	Distance from prescribed activity
PECs: <ul style="list-style-type: none"> <li>Priority 1 Subterranean invertebrate communities of mesas in the Robe Valley region</li> <li>Priority 1 Subterranean invertebrate communities of pisolitic hills in the Pilbara</li> <li>Priority 1 Sand sheet vegetation (Robe Valley)</li> </ul>	Located within the Premises. <b>Subterranean Fauna – Troglifauna is managed under MS 1112.</b> <b>Sand sheet vegetation (Robe Valley) is managed under MS 1112.</b>
Threatened and Priority Fauna: <ul style="list-style-type: none"> <li>Northern quoll (<i>Dasyurus hallucatus</i>) - Endangered</li> <li>Pilbara Leaf-nosed Bat (<i>Rhinionicteris aurantia</i> (Pilbara form)) - Vulnerable</li> <li>Ghost Bat (<i>Macroderma gigas</i>) - Vulnerable</li> <li>Mesa A Paradraculoides (<i>Paradraculoides anachoretus</i>) - Vulnerable</li> <li>Mesa A Lagynochthonius pseudoscorpion (<i>Lagynochthonius asema</i>) - Priority 1</li> <li>Linnaeus/ pseudoscorpion (Mesa A) (<i>Ideoblothrus linnaei</i>) – Priority 1</li> <li>Mesa B/C Paradraculoides (<i>Paradraculoides blythius</i>) – Vulnerable</li> <li>Fortescue grunter (<i>Leiopotherapon aheneus</i>) - Priority 4</li> </ul>	Located within the Premises. <b>Northern quoll (<i>Dasyurus hallucatus</i>) and Ghost Bat (<i>Macroderma gigas</i>) is managed under MS 1112.</b>
<u>Priority Flora</u> <i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) Priority 1	Approximately 4 km west of the prescribed premises boundary. <b><i>Abutilon</i> sp. Onslow (F. Smith s.n. 10/9/61) is managed under MS 1112.</b>
<u>Riparian communities</u> The locally significant riparian communities of the Robe River and Warrambo Creek	Located within and adjacent to the Premises. <b>Riparian vegetation of the Robe River and Warrambo Creek is</b>

Environmental receptors	Distance from prescribed activity
	managed under MS 1112.
<p><u>Surface water</u></p> <p>Robe River</p>	<p>Passes adjacent to the east and intersects the eastern boundary of the Premises.</p>
<p>Warrambo Creek</p> <p>Other minor ephemeral tributaries</p>	<p>Intersects the south-western portion of the Premises.</p> <p>Located within the Premises.</p>
<p><u>Groundwater</u></p> <p>Regional groundwater flow is to the north / north-west towards the coast</p> <p>Groundwater is recharged predominantly via rainfall and infiltration beneath ephemeral creeks following rainfall events</p> <p>Baseline groundwater quality at Warrambo is considered fresh to brackish (depending on location), with neutral pH; Total Dissolved Solids (TDS) concentrations ranging from 8 mg/L to 7,000 mg/L; Chloride concentrations ranging from 48 mg/L to 3,170 mg/L; and Nitrate concentrations ranging from 0.05 mg/L to 130 mg/L</p>	<p>Groundwater typically occurs at depths of 15-20 m below ground level (mbgl) but has been recorded as shallow as 7 mbgl on the coastal plain to the north (Warrambo Creek) and as deep as 25 mbgl to the south.</p>
<p><u>Rights in Water and Irrigation Act 1914</u></p> <p>Proclaimed Pilbara Groundwater and Surface Water Areas</p>	<p>The Premises is located within the Proclaimed Pilbara Groundwater and Surface Water Areas.</p>
<p><u>Aboriginal heritage sites</u></p> <p>Rio Tinto 2019 states <i>The identification and management of cultural heritage within the traditional lands of the Robe River Kuruma People is in accordance with the principles and practices outlined within Rio Tinto's Communities and Social Performance Guidelines, the Rio Tinto Cultural Heritage Group Procedure, and the heritage protocols within the Participation Agreement and Indigenous Land Use Agreement.</i></p>	<p>Numerous registered sites within the Premises.</p>



## 3.2 Risk ratings

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

Where the Licence Holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Licence L8234/2008/2 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises.

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

Table 4. Risk assessment of potential emissions and discharges from the Premises during construction and operation

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
<b>Construction</b>								
Construction of putrescible and waste dump landfills located within the prescribed premises boundary	Dust	Air/windborne pathway Dust deposition on vegetation affecting photosynthesis	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 9 on the Existing Licence relates to a dust monitoring programme at the Premises  The general provisions of the EP Act applies	N/A
<b>Operation</b>								
Earthmoving	Dust	Air/windborne pathway Dust deposition on vegetation affecting photosynthesis	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	Y	Condition 9 on the Existing Licence relates to a dust monitoring programme at the Premises  The general provisions of the EP Act applies	N/A
Operation of putrescible and waste dump landfills located within the prescribed premises boundary	Odour associated with putrescible waste	Air/windborne pathway causing impacts to amenity	Scavengers and indirect receptors – vegetation and fauna	Refer to Section 3.1	C = Slight L = Unlikely <b>Low Risk</b>	N	<b>Condition 6</b>	Licence Holder's controls have been conditioned, which has lowered the risk rating  A regulatory control has been imposed to ensure that putrescible waste in the putrescible landfill is covered weekly
	Windblown waste	Increase in scavengers/vermin						
	Fire	Air/windborne pathway causing impacts to health, amenity and environmental receptors	Surrounding vegetation Fauna	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 6 for the putrescible landfill	Licence Holder's control for a firebreak around the perimeter of the putrescible landfill conditioned  Noting that the requirements for landfilling tyres are set out in Part 6 of the <i>Environmental</i>

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								<i>Protection Regulations 1987</i>
	Leachate from the putrescible landfills	Seepage to soils and groundwater with potential impact to groundwater and alteration to sensitive surface water ecosystems	Premises located within the Pilbara Groundwater and Surface Water Area  Groundwater  Sensitive surface water ecosystems (Robe River and Warrambo Creek)	Refer to Section 3.1	C = Moderate L = Unlikely <b>Medium Risk</b>	N	<b>Condition 6</b>	<p>Licence Holder's controls have been conditioned, which has lowered the risk rating</p> <p>Additional regulatory controls have been imposed to ensure the following:</p> <ul style="list-style-type: none"> <li>Putrescible landfills are located so that the vertical distance between waste and the highest seasonal and expected post mining groundwater level is no less than 10 m</li> <li>Special Waste Types 1 and 2 are required to be disposed of within a dedicated trench, the location of disposed wastes is recorded, and the waste is immediately covered with a minimum depth of 300 mm of inert and incombustible material</li> </ul> <p>Noting that requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the <i>Environmental Protection (Controlled Waste) Regulations 2004</i></p>
	Contaminated stormwater	Surface water runoff with potential contamination of soils and alteration to sensitive surface water ecosystems	Soil  Sensitive surface water ecosystems (Robe River and Warrambo)	Refer to Section 3.1	C = Minor L = Possible <b>Medium Risk</b>	Y	Condition 6	Licence Holder's controls for stormwater management at the landfill facilities conditioned

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
			Creek)					

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 5 provides a summary of the consultation undertaken by the department.

**Table 5: Consultation**

Consultation method	Comments received	Department response
Licence Holder was provided with draft amendment on 07 November 2024	The Licence Holder responded on 02 December 2024 stating that they do not submit any comments for consideration or request any further changes	N/A

## 5. 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.

### 5.1 Summary of amendments

Table 6 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 6: Summary of licence amendments**

Condition no.	Proposed amendments
Prescribed premises category description	Inclusion of Category 64 with a design capacity of 2,000 tonnes per annual period.
Condition 1, Table 1	Inclusion of Category 64 with a design capacity of 2,000 tonnes per annual period.
Figure numbering	Updated throughout Licence as applicable.
Condition 6, Table 5	Inclusion of construction and operational requirements for the waste dump landfills and putrescible landfills to be located within the prescribed premises boundary (refer to section 2.2.1).
Condition 17, Table 7	Inclusion of reporting requirements for the waste dump landfill and putrescible landfills within the prescribed premises boundary.
Definitions	Updated as applicable.
Schedule 1: Maps	Inclusion of Figure 4 to show the location of the Mesa C Waste Dump Landfill.
Schedule 3: Monitoring	Monitoring frequency for the TSF1 and TSF2 monitoring bores changed from monthly to quarterly (refer to section 2.2.2).

## References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2019, *Landfill Waste Classification and Waste Definitions 1996 (as amended 2019)*, Joondalup, Western Australia.
5. Rio Tinto 2019, *Works Approval Supporting Documentation Mesa A / Warrambo Iron Ore Mine (L8234/2008) Mesa A Hub Proposal (RTIO-HSE-0335094)*, dated August 2019 (DWER reference: within DWERDT188273).
6. Rio Tinto 2024a, *Application for a Licence Amendment under the Environmental Protection Act 1986 (WA) – L8234/2008*, dated 20 September 2024 (DWER reference: DWERDT1010027).
7. Rio Tinto 2024b, *Environmental Compliance Report Works Approval W6284/2019/1: Mesa A/Warrambo Iron Ore Mine Project (RTIO-1051791)*, dated 27 May 2024 (DWER reference: DWERDT954622).
8. Rio Tinto 2024c, *Notice under Section 59(B) of the Environmental Protection Act 1986 Regarding Proposed Amendment to Licence L8234/2008*, dated 30 November 2024 (DWER reference: A2328995).