Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L8495/2010/2
Licence Holder	Terra Mining Pty Ltd
ACN	605 732 518
File Number	DWERVT16395~1
Premises	Extension Hill Mine Site PAYNES FIND WA 6612 Legal description - Mining Tenements G59/33, G59/34, G59/62, L59/68, L59/69, L59/87, M59/338, M59/339, M59/526, M59/454, M59/455 and M59/609 As depicted in Schedule 1 As defined by the Premises maps attached to the Revised Licence
Date of Report	17 December 2024 (FINAL)
Decision	Revised licence granted

Table of Contents

1. Decision summary

Licence L8495/2010/2 is held by Terra Mining Pty Ltd (Licence Holder) for the Extension Hill Mine Site (the Premises), located at Mining Tenements G59/33, G59/34, G59/62, L59/68, L59/69, L59/87, M59/338, M59/339, M59/526, M59/454, M59/455 and M59/609, PAYNES FIND WA 6612.

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 L8495/2010/2 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 Application summary

On 23 October 2024, the Licence Holder submitted an application to the department to amend Licence L8495/2010/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Installation of a new Dry Magnetic Separator (DMS) unit to be used in conjunction with the existing approved crushing circuit.

This amendment is limited only to changes to Category 5 activities from the Existing Licence. No changes to the aspects of the existing Licence relating to Category 63, 64 and 85 have been requested by the Licence Holder. Table 1 below outlines the proposed changes to the existing Licence

Table 1: Proposed design or throughput capacity changes

Category	Current design throughput capacity	Proposed design throughput capacity	Description of proposed amendment
5	5 000 000 tonnes per annual period	5 000 000 tonnes per annual period	Installation of a new DMS unit to be used in conjunction with the existing approved crushing circuit

2.2.1 Dry Magnetic Separator (DMS)

Currently mined ore is dumped on the Run of Mine (ROM) Pad and is then loaded into the Crushing and Screening Plant, which can process lump (10 mm – 40 mm) and fines (<10 mm) product types.

The modification will enable magnetite fines (<10 mm) to be passed through the DMS unit directly from the Crushing and Screening Plant, which magnetically concentrates the highly magnetite ore separate to the non-magnetic waste material. Waste will then be trucked to the Waste Rock Dump (WRD) to be comingled.

The DMS consists of three prefabricated sections that will be craned into position. The DMS layout and surface water management controls are shown in Figure 1.

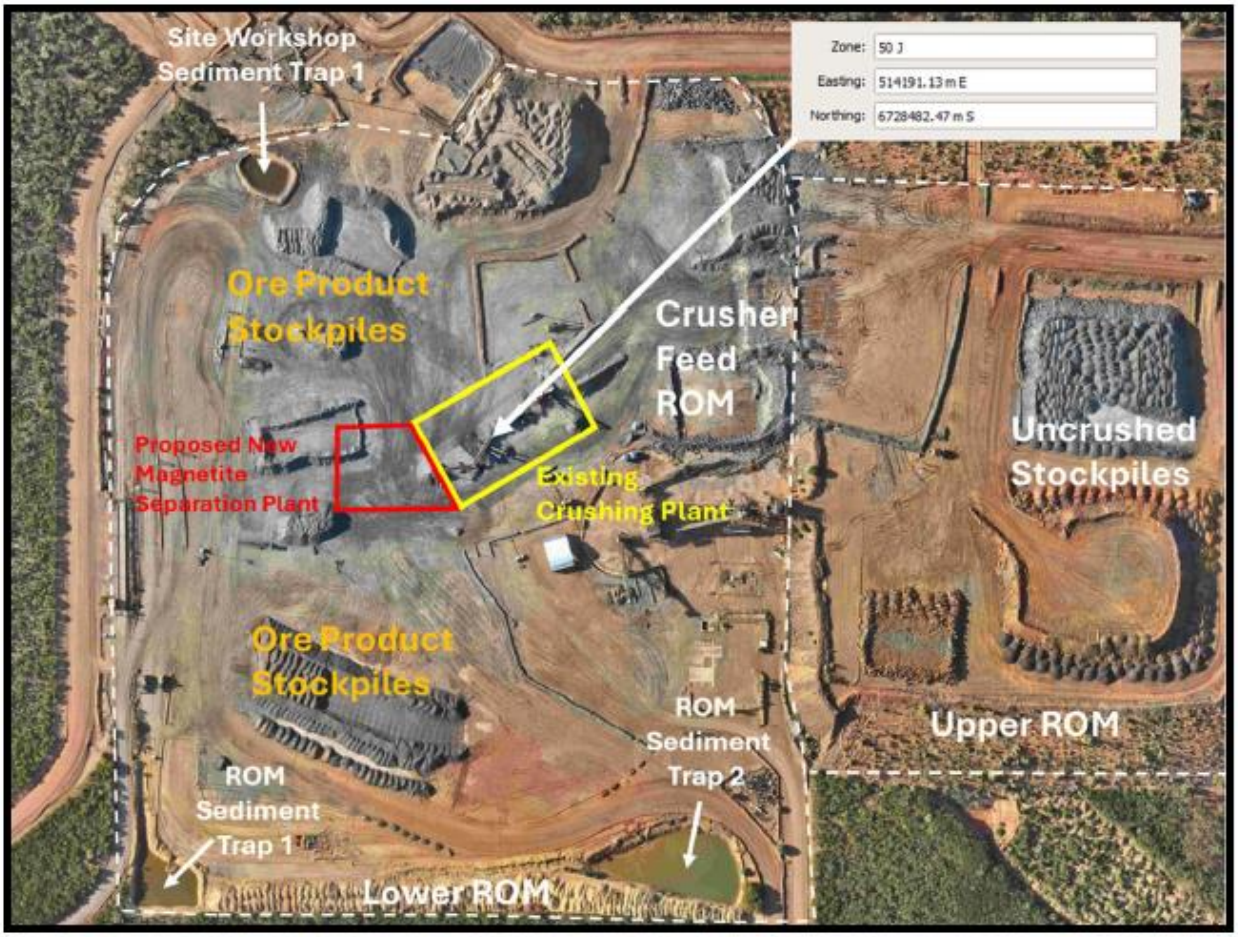

Figure 1: DMS layout and surface water management controls

The processing flow chart for the Crushing and Screening Plant and DMS is shown in Figure 2.

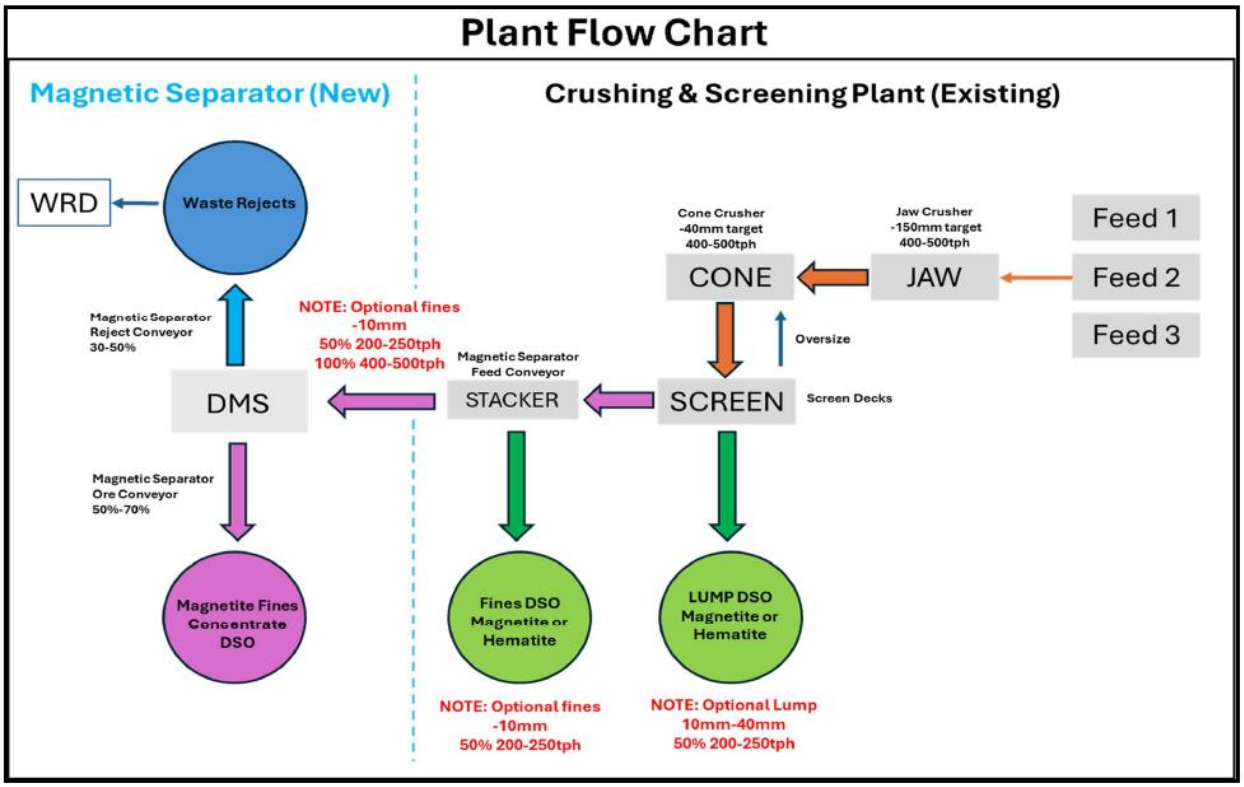

Figure 2: Crushing and Screening Plant and DMS Plant Flow Chart

The DMS dust suppression system is shown in Figure 3 and examples of the Crushing and Screening Plant and DMS circuit sprayers are shown in Figure 4.

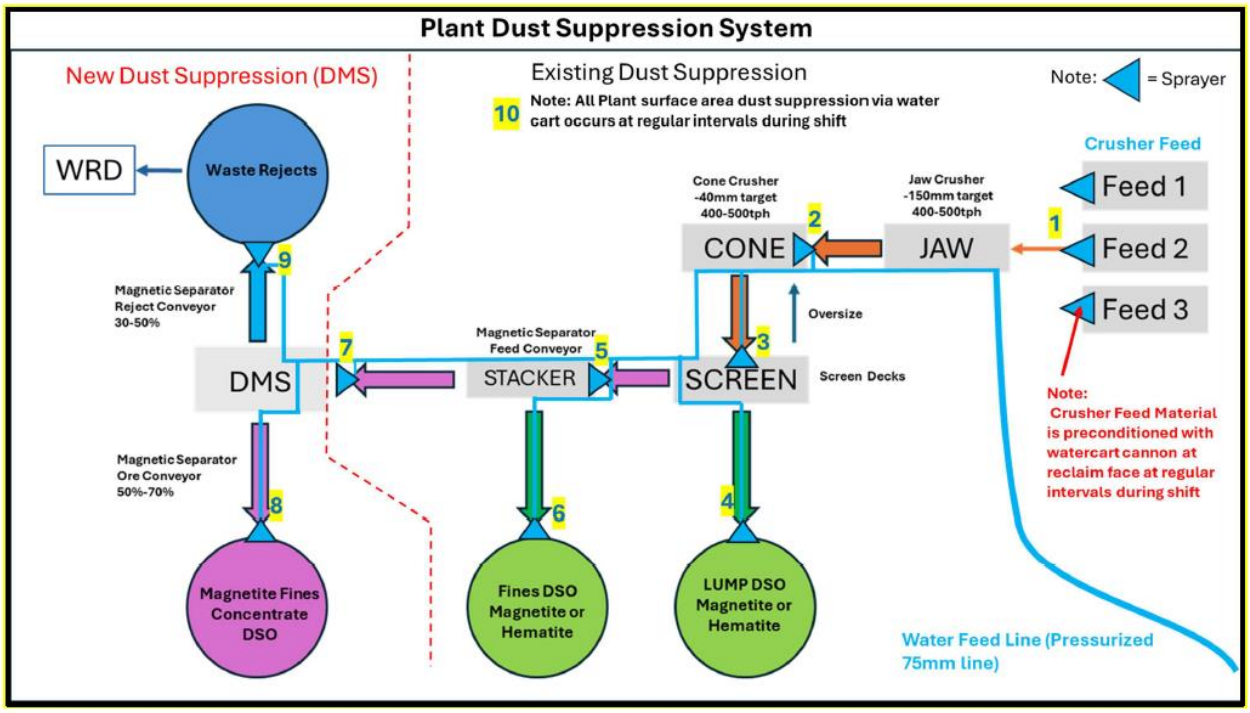

Figure 3: DMS Dust Suppression System

Figure 4: Crushing and Screening and DMS circuit sprayer examples

2.3 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

EPBC 2005/2381 has relevant controlling provisions for listed threatened specials and communities (Mason's darwinia, *Darwinia masonii*) and listed migratory species (Malleefowl, *Leipoa ocellata*).

2.4 Part IV of the EP Act

Extension Hill Mine Site has a corresponding Ministerial Statement (MS) 753, approved on 24 October 2007. Related ongoing management plans include: Research and Recovery Plans for *Darwinia masonii*, and *Lepidosperma sp.*; Significant Flora Species and Communities Management Plan; Weed Management Plan; Bush Fire Management Plan; Mine Site Fauna Management Plan; Malleefowl Conservation Plan; Preliminary and Final Closure Plans. Dust is regulated to ensure dust generation does not lead to a further decline in significant native flora species and communities.

MS 889 was issued on 28 February 2012 to amend MS 753 conditions relating to a performance bond and fauna management along the services corridor.

On 08 December 2016, MS 1045 was issued and approved Mount Gibson Mining Ltd to construct two mine pits, a waste rock landform and support infrastructure at the Iron Hill and Iron Hill South Deposits. Ore mined at the Iron Hill deposits will be processed at the Extension Hill Mine Site premises. Condition 6-1 requires the proponent to submit a Flora and Vegetation Outcome-based Condition Environmental Management Plan, with monitoring, trigger criteria and threshold contingency actions. Condition 6-4 requires implementation of this Plan.

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

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Movement of infrastructure and machinery during installation of the DMS	Air/windborne pathway	Use of water carts.
Noise	Movement of infrastructure and machinery during installation of the DMS	Air/windborne pathway	The DMS is to be installed, rather than constructed, so construction noise emissions are expected to be minimal, in already disturbed area and for a minimal duration.
Operations			
Dust	Operation of the DMS as material is transferred and processed	Air/windborne pathway	Target Dust Extension Moisture (DEM) for handling the DSO ore at the Geraldton Port varies depending on the product size distribution but generally the lab results average between 2.5-3% moisture. The crushing circuit and DMS unit target this moisture range to ensure the product meets the export need which benefits the process as targeting the DEM significantly reduces

Emission	Sources	Potential pathways	Proposed controls
			dust emissions during crushing. Dust suppression controls will be located at the following points: • ROM Reclaim (Uncrushed Jaw Feed) Water Cart Cannon pre-conditioning; • Transfer point between Jaw crusher and Cone Crusher; • Transfer point between Cone Crusher and Screen; • Discharge Point of Lump Product Belt (Option when producing 50% Lump); • Transfer Point from Screen to Stacker; • 6a - Discharge point for DMS feed conveyor; • 6b - Discharge point of Fines (Option when producing 50% lump); • Discharge Point for DMS Ore Concentrate; • Discharge Point for DMS Waste Rejects; and • Surface dust Water Suppression Water Cart Rear Pressure Sprayer. Any additional dust mitigation for the waste or reject product resultant from the operation of the DMS unit will be addressed with the water cart, applying the same method as adopted for preconditioning of the ROM feed to the Jaw. Specific dust management measures to be implemented for the crushing and screening circuit will include the following: • Using water sprays (where appropriate); • Using covered and skirted conveyors at ore transfer points; • Sealing of relevant joints and installation of a dust collection system; • Ensuring correct equipment design, operational procedures and adequate operator training occurs; • Containment apparatus on conveyor transfer points; • Belt scrapers on the conveyor belt; • Collection trays under the belt plough on the return belt; • Dust suppression sprinklers at transfer

Emission	Sources	Potential pathways	Proposed controls
			points and stockpiles; • Deluge sprays at the ROM area and the hopper; and • If any infrastructure is required to be moved from its original position once the Project is operational, then dust control equipment will be reinstalled and operated according to the original plant specifications.
Noise	Operation of the DMS	Air/windborne pathway	• Conduct regular and effective maintenance of plant and equipment to maintain noise levels; • Vibration from machinery with rotating parts are reduced by attention to proper balancing; and • Frictional noise in machines, conveyor rollers and trolleys are reduced by proper lubrication.
Sediment laden potentially contaminated stormwater	Rainfall flowing through processing area of the DMS	Direct discharges	Pre-existing haul roads and access tracks will be used to minimise interference to natural drainage. • During high rainfall events the effect of stormwater discharge from the site will be controlled. Adequate drainage will be assured through site structures, stockpiles and roadways. This will negate the possibility of project enhanced flooding, erosion and sedimentation; • In terms of physical water flow, the project will be implemented to have little impact on surface water runoff in the region, however if proven necessary, a sediment trap system will be incorporated into the site design; • The support infrastructure will be designed to ensure the safe storage and handling of all hazardous and waste materials to prevent contamination to the project area; • Appropriate design standards will be applied to allow for the provision of scour protection measures; • Drainage areas will be suitably designed to minimise contamination of surface water; • Cleared vegetation and topsoil will be stockpiled away from watercourses and in discrete stockpiles to avoid any

Emission	Sources	Potential pathways	Proposed controls
			interference to surface flows; • Contaminated water from work areas will be kept separate from clean storm water; and • Water interfacing with work areas will be directed to oil water separators.
Hydrocarbons / chemicals	Leaks and spills Diesel fuel and other hydrocarbons stored in two 120,000 litre self-bunded fuel tanks that will be connected to fuel bowsers for truck and light vehicle refuelling	Direct discharges	• Hydrocarbon High Density Polyethylene (HDPE) containment; • Lubricants and waste oil will be contained within portable bunding; • All refuelling and vehicle maintenance will occur within a bunded area sufficiently large enough to prevent uncontrolled releases into drainage lines; • Spill kits will be placed at the refuelling area and in-service vehicles and staff will be trained in the proper use of the kits; • The fuel tank (double skinned) will be protected against collision by equipment and/or vehicles by the placement of appropriate barriers or bollards; • Areas adjacent to secondary storage facilities will be contoured to drain away from the facilities to prevent impact and flooding; • Water or other liquids that collect in the storage facilities will be removed and treated; • All hazardous materials will be stored as directed on the Safety Data Sheet (SDS); and • A copy of the SDS will be kept in close proximity to the storage tank and on file, on site.

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 human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
White Wells Homestead	Approximately 15km west of the premises
Ninghan Station	Approximately 20km north of the premises
Aboriginal Sites and Heritage: Extension Hill (Place ID: 25293)	Within the prescribed premises boundary, 2km east of the landfill pit
Environmental receptors	**Distance from prescribed activity**
Groundwater	Aquifers encountered were in banded iron formation, at depths commencing at 48 - 78 m below ground level (mBGL) and extending to depths in the range 85-135 mBGL. Groundwater is brackish to saline, with total dissolved solids (TDS) of 1,600 - 11,000 mg/L. pH ranged from 7.1 - 8.5 (neutral to alkaline). The groundwater is of a sodium chloride type with moderately high concentrations of sulphate. TDS, chloride and nitrate values exceeding applicable guidelines were variously reported, indicating groundwater may be unsuitable for pastoral use.
Threatened Ecological Communities (TEC): 1. Mount Gibson Range vegetation complexes (banded ironstone formation) (priority 1) 2. Eucalypt woodlands of the Western Australian Wheatbelt (priority 3)	1. Within the prescribed premises boundary, 2.1km north-east of the landfill pit 2. Within the prescribed premises boundary, 500m east of the landfill pit These TECs are managed in accordance with Ministerial Statement 753 and EPBC 2005/2381
Threatened fauna: *Leipoa ocellata* (Malleefowl) *Egernia stokesii badia* (Western spiny-tailed skink) *Falco peregrinus* (Peregrine falcon) *Idiosoma kopejtkaorum* (Lake Goorly shieldbacked trapdoor spider)	Within the premises boundary Applicant stated “There is no clearing associated with this proposal and, therefore, no impact to any habitat. These species will be managed in accordance with Ministerial Statement 753 and EPBC 2005/2381”.
Threatened flora: *Darwinia masonii* *Lepidosperma gibsonii*	Applicant stated “On the Banded Iron formations there is no impact to either species as the habitat is not near proposed landfill location and there is no clearing required. These species will be managed in accordance with Ministerial Statement 753 and EPBC 2005/2381”.

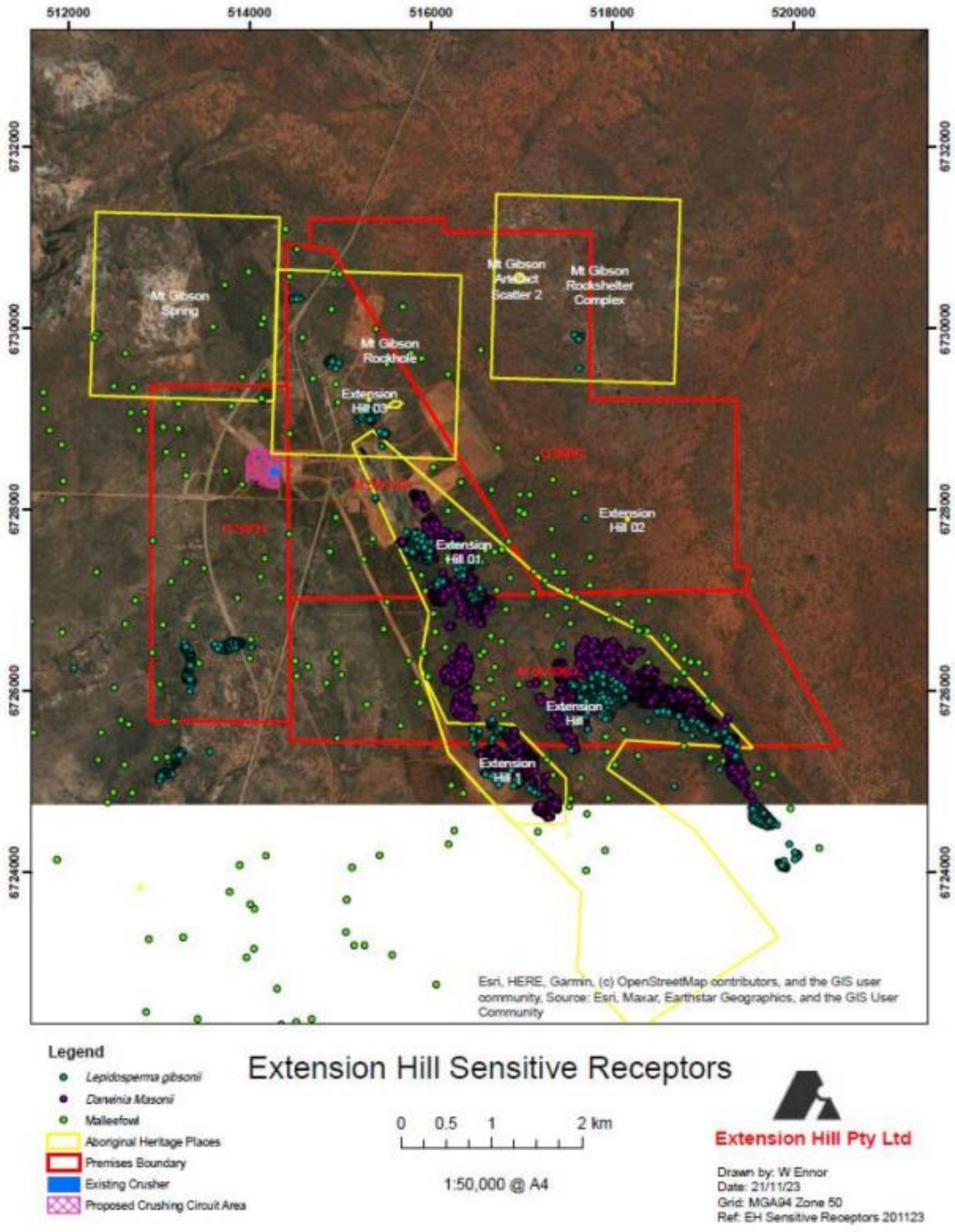

Figure 5: Distance to sensitive receptors

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 L8495/2010/2 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 5 activities.

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[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**				
Construction								
Movement of infrastructure and machinery during installation of the DMS	Dust	Air/windborne pathway causing impacts to health and amenity	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	N//A	N/A
	Noise	Air/windborne pathway causing impacts to health and amenity	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	N/A	N/A
Operation								
Operation of the DMS	Dust	Air/windborne pathway causing impacts to health and amenity	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	Y	Condition 1, Table 1 Design and construction / installation requirements, requires dust suppression controls on DMS Condition 5, Table 2 Infrastructure and equipment requirements, requires dust controls to be used during operation of the DMS	N/A

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**				
	Noise	Air/windborne pathway causing impacts to health and amenity	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	N/A	N/A
	Sediment laden potentially contaminated stormwater	Rainfall flowing through processing area of the DMS causing direct discharges	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	Condition 1, Table 1 Design and construction / installation requirements, requires DMS location within preexisting ROM area. Condition 2 and 3: Compliance reporting requirements for infrastructure specified in Condition 1. Condition 5, Table 2 Infrastructure and equipment requirements, requires stormwater controls to be used during operation of the DMS.	N/A
	Hydrocarbons / chemicals	Leaks and spills causing direct discharges	Heritage Sites (within premises boundary) TEC – Flora (700m) Fauna (within premises boundary)	Refer to Section 3.1	C = Slight L = Unlikely **Low Risk**	Y	Condition 1, Table 1 Design and construction / installation requirements, requires DMS location within preexisting ROM area. Condition 2 and 3: Compliance reporting requirements for infrastructure specified in Condition 1.	N/A

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**				
							Condition 5, Table 2 Infrastructure and equipment requirements, requires hydrocarbons / chemicals controls to be used during operation of the DMS.	

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
Local Government Authority advised of proposal (18 November 2024)	No comments received	N/A
Department of Mines, Industry Regulation and Safety (DEMIRS) advised of proposal (18 November 2024)	DMIRS replied on 04 December 2024 stating/advising that: A Mining Proposal titled "*Extension Hill Iron Ore Project Mining Proposal, Version 1 Revision 1, Dated 26 July* 2024" (REG ID 128088), which is currently under assessment by DEMIRS, was submitted by the proponent to meet requirements under the *Mining Act 1978*. Within that document it is proposed to install a dry magnetic separator, with an annual throughput capacity of 5.5 Mt of ore. The dry magnetic separator is proposed to be located on General Purpose Lease G 59/34, adjacent to the existing crusher plant. Part V licence L8495/2010/2 that is subject to this request is cross referenced. There are no objections to the grant of licence amendment L8495/2010/2 on the basis that risks associated with these new activities can be suitably managed under the *Environmental Protection Act 1986.*	Noted
Licence Holder was provided with draft amendment on (10 December 2024)	Licence Holder replied on 11 December 2024 requesting to waive the consultation period.	Licence Holder replied on 11 December 2024 requesting to waive the consultation period.

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
1, Table 1	Addition of Dry Magnetic Separator for dust, stormwater and hydrocarbons/chemicals controls.
2 and 3	Compliance reporting requirements for infrastructure specified in Condition 1.
4	General condition requiring the Licence Holder to operate infrastructure specified in Condition 1, following the submission of reporting requirements stated in condition 2 and 3.
Schedule 1: Maps, Schedule 1	Updated Premises Map.

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. Terra Mining Pty Ltd, Terra Mining - Application to Amend Existing Licence L8495/2010/2 23/10/2024, West Perth, Western Australia (DWERDT1026358 – Application Form and Supporting Documentation).
5. Terra Mining Pty Ltd, RE: APP-0026229 - PROPOSED AMENDMENT TO LICENCE L8495/2010/2 11/12/2024, West Perth, Western Australia (APP-0026229 – reply waiving 21 days letter).