



Application for Licence Amendment

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

Licence Number	L9375/2023/1
Licence Holder	OZ Minerals Musgrave Operations Pty Ltd
ACN	640 213 341
File Number	DER2023/000114
Premises	West Musgrave Project Legal description – Mining Licences: M 69/149, L 69/56 and L 69/57 As indicated by the map in Schedule 1 and defined by the coordinates in Schedule 2
Date of Report	24 July 2024
Decision	Revised licence granted

MANAGER, PROCESS INDUSTRIES

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

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary	1
2.2.1 Landfill	1
2.2.2 Crushing and Screening	2
2.3 Part IV of the EP Act	2
3. Risk assessment	2
3.1 Source-pathways and receptors	2
3.1.1 Emissions and controls	2
3.1.2 Receptors	4
3.2 Risk ratings	4
4. Consultation	7
5. Conclusion	7
5.1 Summary of amendments	7
References	7
Table 1: Proposed design changes	1
Table 2: Licence Holder controls	3
Table 3: Sensitive human and environmental receptors and distance from prescribed activity	4
Table 4. Risk assessment of potential emissions and discharges from the Premises during operation	5
Table 5: Consultation	7
Table 6: Summary of licence amendments	7

1. Decision summary

Licence L9375/2023/1 (L9375) is held by OZ Minerals Musgrave Operations Pty Ltd (Licence Holder) for the West Musgrave Project (the Premises), located at M69/149, L69/56 and L69/57.

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 L9375 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 10 June 2024, the Licence Holder submitted an application to the department to amend Licence L9375 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Addition of Category 64 landfill (ongoing operations) to the licence (originally assessed and approved under works approval W6579/2021/1); and
- Addition of Category 12 crushing and screening plant (ongoing operations) to the licence with increased production capacity from 150,000 tpa (originally assessed and approved under works approval W6579/2021/1) to 1,560,000 tpa.

Table 1 below outlines the proposed changes to the existing Licence.

Table 1: Proposed design changes

Category	Current design capacity	Proposed design capacity
Category 12: Screening, etc. of material	150,000 tpa	1,500,000 tpa
Category 54: Sewage facility	275 m ³ /day	N/A
Category 64: Class II or III putrescible landfill site	2,300 tpa	No change
Category 77: Concrete batching and cement products manufacturing	150,000 tpa	N/A

2.2.1 Landfill

The landfill is proposed to receive domestic (putrescible and non-putrescible) and non-recyclable waste produced at the accommodation village, processing plant, workshops, offices, kitchen and medical clinic that are associated with the West Musgrave Project. Biosolids produced from the onsite WWTP sludge dewatering facility are also proposed to be disposed to the landfill.

An Environmental Compliance Report was submitted to the department on 1 May 2024 for the construction of the landfill, as constructed under works approval W6579/2021/1. The report detailed that the landfill was generally constructed as per design requirements, with some minor

deviations to surface trench dimensions. The changes were deemed acceptable by the department during the compliance assessment undertaken.

2.2.2 Crushing and Screening

An Environmental Compliance Report for the primary and secondary crushers was submitted 29 May 2024. The compliance report detailed non-compliances with works approval W6579/2021/1, whereby the assessed production limit of 150,000 tonnes per year was exceeded. During the partial annual period of April 2023 to 30 June 2023, 166,698 tonnes of material were produced by the crushing and screening circuit. In the next partial period from July 2023 to April 2024, 732,946 tonnes of material were produced and subsequently crushing activities were ceased upon realisation of the exceedances.

In addition to the production exceedance, time limited operations continued outside the authorised period, as well as a failure to submit an environmental compliance report within the specified timeframe.

The non-compliances were recorded in the department's Incident and Complaint Management System (ICMS), and should further investigation be required, the matter may be referred to the department's Environmental Assurance team. Initial assessment by the department noted that the investigation conducted by the Licence Holder did not identify any immediate or significant environmental impacts associated with screening activities undertaken. No complaints were reported and the department also noted that the infrastructure installed was otherwise compliant with the requirements of the works approvals, specifically the type of equipment and dust suppression sprays.

Due to the ongoing requirement for construction material at the premises, this application for licence amendment includes an increase to the authorised screening tonnage to 1,500,000 tonnes per year.

2.3 Part IV of the EP Act

Ministerial Statement 1188 (MS 1188) was issued to Oz Minerals Musgrave Operations Pty Ltd (Oz Minerals) on 20 April 2022. The proposal includes the development of two copper and nickel deposits, a processing facility and supporting infrastructure, with the purpose of minimising impacts to the environment. The crushing and screening circuit and landfill operations are consistent with MS 1188.

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 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
Dust	Screening, crushing, unloading, loading and storage of material. Vehicle movements	Air/windborne pathway causing impacts to health and amenity	Dust to be managed by watering exposed areas with a water cart or fixed sprays. Increased frequency of water carts within screening yard. Additional dust suppression on stockpiles. Installation of dust curtains on screening equipment Screening activity adjusted, based on monthly deposition data collected from numerous locations.
Noise			Screening activities will only be conducted in daylight hours.
Sediment laden stormwater		Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Uncontaminated stormwater diverted away from operational areas to natural downstream drainage
Leachate seeping into groundwater	Landfill operation and tyre storage	Leachate generated by waste material seeping to groundwater resulting in contamination	Directing rainfall run-off around the facility. Regular covering of waste. Deepest point of landfill to be maintained at a distance of more than 2 metres from standing water level. Standing water level to be measured monthly.
Contaminated or potentially contaminated stormwater		Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Bunds around each trench to divert clean stormwater around the trench and contain potentially contaminated stormwater in the trench. Cut-off drain and bund constructed on the southern boundary of landfill to intercept and retain any contaminated water that may originate from the site.
Odour from putrescible wastes and xanthate flocculant packaging Flyaway litter		Air/windborne pathway causing impacts to health and amenity	Minimising the active disposal face and applying daily and interim covers Perimeter fence installed to prevent fauna interactions and flyaway litter. Max height of waste will not be within 500mm of the tip of the trench.
Particulate and noxious emissions from tyre or landfill fire	Perimeter fence installed to prevent public access and fauna interactions.		
Dust generated through earth moving and vehicle movement during waste deposition and capping	Where required, dust generation on the landfill access road and internal trafficable surfaces will be managed by use of a water cart. During covering of waste, dust will be minimised by avoiding during periods of high wind, with wet suppression utilised, where appropriate.		

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
Residential receptor – Jameson community (Mantamaru)	26 km north of the premises
Groundwater users (bores)	Jameson Bore – 29 km north Linton Bore – 17 km Southeast of premises Not in PDWSA
Heritage sites, Visitors	Pilypiriny – artefacts, scatter, camp, plant and water resources
Environmental receptors	Distance from prescribed activity
Terrestrial Fauna Threatened/Priority fauna	Great Desert Skink (<i>Egernia kintorei</i>) listed as vulnerable Priority fauna species in the development envelope
Native vegetation TEC	No TEC/PEC within 100 km of premises No threatened flora identified
Surface waters	No surface waters nearby
Groundwater	Depth to groundwater ranges from 2.7 to 14.5 metres below ground level (mbgl) – average 6.5 mbgl Gradients of 0.1% running N-S

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 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. screening and landfilling 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 operation.

Risk Event					Risk rating ¹ C = consequence L = likelihood	Conditions ² of Licence	Justification for additional controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls			
Operation							
Screening, crushing, unloading, loading and storage of material. Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity	Nearest residential receptors 26 km away – Jameson Community Visitors to area Heritage Sites 5 km away	Dust to be managed by watering exposed areas with a water cart or fixed sprays. Increased frequency of water carts within screening yard. Additional dust suppression on stockpiles. Installation of dust curtains on screening equipment Screening activity adjusted, based on monthly deposition data collected from numerous locations.	C = Minor L = Unlikely Medium Risk	Condition 1, Table 1	The delegated officer considers that, due to the distance to nearby sensitive receptors impacts associated with dust from screening operations are likely to be minimal. Potential impacts to visitor amenity at nearby heritage sites are regulated through Part IV Ministerial conditions. Additional controls proposed by the applicant have been included in the licence to manage the ongoing screening activities proposed.
	Noise	Air/windborne pathway causing impacts to health and amenity	N/A no nearby receptors				
	Sediment laden stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	Adjacent vegetation associations. Depth to groundwater approximately within 6.5 mbgl. No human groundwater users in the area	Uncontaminated stormwater diverted away from operational areas to natural downstream drainage.	C = Minor L = Unlikely Low Risk	N/A	Nearby vegetation expected to be well represented in the region. Applicants' controls deemed suitable for minimising the risk of erosion and contamination of stormwater flows. No additional regulatory controls for the management of stormwater are considered necessary. Controls applied are consistent with commitments made by applicant.
Landfill operation and tyre disposal	Leachate seeping into groundwater	Leachate generated by waste material seeping to groundwater resulting in contamination	Adjacent vegetation associations. Depth to groundwater approximately within 6.5 mbgl.	The deepest point of the landfill will maintain more than 2m from standing water level. The standing water level measured regularly.	C = Slight L = Unlikely Low Risk	Condition 1, Table 1	Due to the nature and volume of waste, in addition to the applicants' controls, the delegated officer considers that the activity presents a low level of risk to the environment. Controls specified within the works approval are carried over the licence for ongoing operations.

OFFICIAL

Risk Event					Risk rating ¹	Conditions ² of Licence	Justification for additional controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls	C = consequence L = likelihood		
	Contaminated or potentially contaminated stormwater	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality	No human groundwater users in the area 6.5 mbgl.	Bunds around each trench to divert clean stormwater and contain potentially contaminated stormwater in the trench. Cut-off drain and bund constructed on the southern boundary of landfill to intercept and retain any contaminated water that may originate from the site.	C = Slight L = Unlikely Low Risk		Nearby vegetation expected to be well represented in the region. Applicants' controls deemed suitable for minimising the risk of erosion and contamination of stormwater flows. Proposed controls are consistent with existing commitments. Controls specified within the works approval are carried over the licence for ongoing operations.
	Odour from putrescible wastes and xanthate flocculant packaging Flyaway litter	Air/windborne pathway causing impacts to health and amenity	Nearest residential receptors 26km away – Jameson Community Visitors to area Heritage Sites 5km away	Minimising the active disposal face and applying daily and interim covers Perimeter fence installed to prevent fauna interactions and flyaway litter. Max height of waste will not be within 500mm of the tip of the trench.	C = Minor L = Rare Low Risk	N/A	No reasonable pathway to residential receptors or cultural heritage locations due to distance. Controls specified within the works approval are carried over the licence for ongoing operations.
	Particulate and noxious emissions from tyre or landfill fire			Tyre storage area capable of storing up to 500 tyres in compliance with AS 1940 in an area not accessible by public. Tyres disposed on site in batches separated by soil and not consisting of more than 1,000 whole tyres. Landfill fenced to prevent public access.	C = Slight L = Rare Low Risk	Condition 1, Table 1	Landfill fencing and proposed capping frequencies reduce the risk of fires at the landfill. In addition, tyre disposal is consistent with Part 6, regulation 14(2) of the EP Regulations. Controls specified within the works approval are carried over the licence for ongoing operations.
	Dust generated through earthmoving and vehicle movement during waste deposition and capping			Landfill access road and internal trafficable surfaces will be managed by water cart. During covering of waste, dust will be minimised by avoiding during high wind, with wet suppression utilised, where appropriate	C = Slight L = Rare Low Risk	Condition 1, Table 1	No reasonable pathway to residential receptors or cultural heritage locations due to distance.

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.

Licence: L9375/2023/1

IR-T15 Amendment report template v3.0 (May 2021)

4. Consultation

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

Table 5: Consultation

Consultation method	Comments received	Department response
The applicant was provided the draft amendment report and draft licence on 16 July 2024 and responded on 17 July 2024.	<p>Comments received were limited to the following;</p> <ul style="list-style-type: none"> • updating the landfill dimensions specified in Table 1 to align with original design; • inclusion of the separation distance (landfill cell to groundwater level) as originally conditioned in the work approval; and • altering the frequency of monitoring for standing water level (SWL) (Table 4) and include provisions for monitoring during periods of care and maintenance. 	The department accepts the proposed changes and has updated the licence accordingly.

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
Condition 1 (Table 1)	Addition of Category 12 Screening plant and Category 64 Landfill operations.
Condition 7 (Table 4)	Addition of groundwater monitoring requirements for the premises landfill.
Condition 11 (Table 5)	Addition of reporting requirements for landfill groundwater monitoring.
Definitions	Addition of definitions for Inert Waste Type(s) 1, 2 and 3, Putrescible Waste and Special Waste Type(s) 1, 2 and 3, quarterly period, care and maintenance.

References

Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.

1. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
2. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia