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	L9013/2016/1
Licence Holder	Spartan Resources Limited
ACN	139 522 900
File Number	DER2016/002214-1 / APP-0028622
Premises	Dalgaranga Gold Project Legal Description: Mining Lease M59/749 and Miscellaneous Licence L59/151 DAGGAR HILLS WA 6638
Date of Report	26 June 2025 (FINAL)
Decision	Revised licence granted

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1. Decision summary

Licence L9013/2016/1 is held by Spartan Resourced Limited (Licence Holder) for the Dalgaranga Gold Project (the Premises), located at Mining Lease M59/749 and Miscellaneous Licence L59/151 Daggar Hills WA 6638.

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 L9013/2016/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Amendment scope

This amendment is limited only to changes to Category 5 activities from the existing Licence (L9013/2016/1) detailed in **Error! Reference source not found.**. There are no changes to the remaining aspects of the existing Licence categories. There are no proposed changes to the controls to manage the previously assessed identified risks, and no new risks were identified during this assessment as nothing to the process had changed, only the volume.

Table 1 - Proposed throughput changes

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
5	Processing or beneficiation of metallic or non-metallic ore (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed - 3.0 million tonnes per annum (Mtpa) (b) tailings from metallic or non-metallic ore are reprocessed - 1.0 Mtpa	(b) tailings from metallic or non-metallic ore are reprocessed – **Proposed increase to 2.0 Mtpa**	Increase the Licence limits to allow tailings remining of up to 2 Mtpa and paste fill production of **4.1 Mtpa** based on the paste plant operating on both day and night shift (24 hours/day).

2.3 Amendment summary

On 16 April 2025, the Licence Holder submitted an application to the department to amend Licence L9013/2016/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The application was for amendment to increase tailings remining and paste fill production based on the paste plant operating 24 hours, with a day and night shift.

The backfill paste plant approved under the existing operating Licence allows for remining of 1 million tonnes per annum (Mtpa) of tailings and production of 1 Mtpa of paste fill transferred to the Never Never underground void. These volumes were based on the paste plant operating on day shift only (note the volume of paste fill being 1 Mtpa is an error as it does not consider the inclusion of the binder and water added to the remined tailings).

The proposed amendment accounts for a larger amount of tailings to be reclaimed and used in the paste plant, operating on a 24 hour basis and includes an increase to the operating

licence limits to allow tailings remining of up to 2 Mtpa and paste fill production of 4.1 Mtpa based on the paste plant operating on both day and night shift (24 hours/day). The paste will be transferred to the Never Never/Pepper underground void (Pepper void is an extension of the Never Never void).

The Licence Holder previously advised that geochemical testing concluded that the pasted tailings will be Non-Acid Forming (NAF) and the caustic characteristics of the paste fill will provide added alkalinity to groundwater that contacts the paste fill. The Tailings Paste Product is relatively geochemically benign. There is no expected change to the backfill paste composition (manufactured from tailings excavated from the (historic) Gilbeys Main Tailings Storage Facility (TSF), site water and Low Heat cement) or paste transfer method (transferred under gravity alone, steel reinforced composite polyethylene (SRCP) pipe utilised in the reticulation system).

Known hydrogeological properties of the Dalgaranga Site identified that the aquifer where the Tailings Paste Product will be discharged provides no viable Pathway for any contamination to migrate because the host rock is highly impermeable. Figure 1 depicts modelled particle tracking from the proposal.

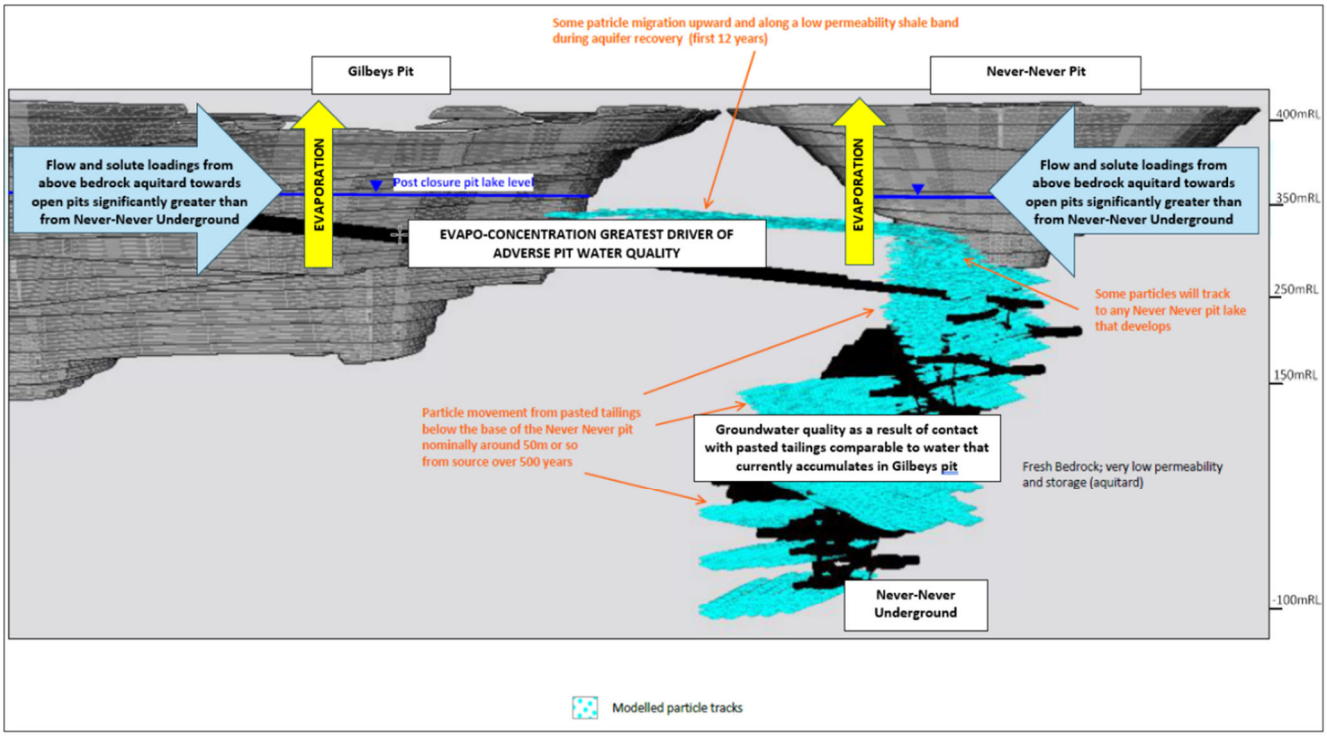

Figure 1 - Modelled particle tracking results

2.3.1 Tailing reclamation

Spartan intends to continue to use old tailings from Gilbeys TSF for backfilling underground mining voids. Spartan have indicated that that a minimum of 3,500,000m³ will be mined, at a dry density of 1.45t/m³ equating to approximately 5,000,000t. This is an increase from 945 000m³ according to the original reclamation design, the rest of the reclamation design remains the same. Remining has previously been undertaken under the licence and this amendment is only to increase the tailings reclamation and paste plant production.

The last deposition of tailings at Gilbeys TSF concluded in 2022. This means that the facility has had ample time to drain water and lower the phreatic level sufficiently to allow for a 25m offset from the embankment upstream toe. An offset of 25m is allowed for around the decant

facility and causeway. This off-set maximises the quantity of tailings for harvesting whilst maintaining adequate slope stability for a safe mining operation.

Tailings remining will occur using a staged approach of six cells, completed in three ~5m deep cuts, allowing the TSF to further dry out and ensuring phreatic surface water lowers sufficiently. The remining process will begin sequentially from Cell 1 in the south corner and proceed to Cell 6 in the northeast corner. The design slopes of each cell will be 1V:3H (Vertical: Horizontal) and final excavation level will be at 430 RL (15m below the bottom of the first cut). A 25 m off-set from the TSF south-eastern embankment upstream toe, 10 m off-set from upstream embankment toes on all other sides of the TSF, and 25m off-set around the decant facility and causeway are included in the design to ensure slope stability and integrity of the TSF.

Figure 2 – DGM Gilbeys TSF Remining Plan

2.3.2 Maintaining Gilbeys TSF stability

To ensure stability of the tailings and existing embankments during the remining of the facility, a slope stability assessment was conducted at the critical sections. The geotechnical stability assessment was undertaken to assess the factor of safety (FoS) at two sections. The FoS for all assessed scenarios is greater than the recommended values, indicating that no slope stability issues are expected during the mining of the TSF. The Part 1 Mining Proposal (MP) Reg ID 500501 for the site is currently under assessment by DEMIRS, which will include a review of the ongoing stability of the Gilbeys TSF.

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(s) during premises operation which have been considered in this Amendment Report are detailed in Table 2 below. Tailings reclamation and paste production is previously approved under the existing licence and this amendment seeks only to increase previously assessed volumes. Table 2 details the control measures the Licence Holder has previously proposed to assist in controlling these emissions.

Table 2: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Excavation of dry tailings from the Gilbeys TSF Operation of the paste plant Vehicle movements Loading and unloading of dry tailings material Lift-off from stockpiled tailings at the paste plant	Air/windborne pathway	Water cart will be used on unsealed roads, in the pit, on the ROM and other open areas to minimise dust generation. Tailings reclamation will be avoided in windy conditions as far as practical. Tailings material will be wet down, covered, or of sufficient moisture content, during handling and transport to minimise dust generation. Size of tailings stockpile will be limited to one weeks feed for the paste fill plant. If paste production is not required for more than seven days, the stockpiled reclaimed tailings will be returned to the Gilbey's TSF. Vehicle speed restrictions.
Contaminated stormwater containing dissolved solids, metals and metalloids	Recovery of tailings at Gilbeys TSF	Surface water run-off to land resulting in seepage to groundwater	V-drains and collection sumps installed and operated at each cell for the collection and removal of surface water. Collected surface water transferred to the process water pond
	Reclaimed tailings stockpile and screening area	Surface water run-off to land resulting in seepage to groundwater	A clay lining layer will be installed, conditioned and then roller compacted. The lining layer will be covered with a 0.5 metre thick free draining oxide waste rock for protection. A 3% gradient will be achieved on the laydown areas towards drive-in collection sumps. A 1.0 meter high earthen windrow will be installed around the perimeter of the laydown area.
Tailings seepage containing	Increased water storage at Gilbeys TSF caused from	Seepage through TSF embankments	Use of v-drains and sumps for the collection of surface water runoff. Collected surface water is pumped back to

Emission	Sources	Potential pathways	Proposed controls
dissolved solids, metals and metalloids	the recovery of tailings material	and floor to groundwater	the process plant for reuse.
Solute containing salts (sulphate, calcium) and some heavy metals	Pasted tailings material in underground mine voids	Fractured rock aquifer following post mine closure	All pasted tailings will occur within the low permeable bedrock aquitard. No other controls proposed

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

Environmental receptors	Distance from prescribed activity
Groundwater The groundwater is brackish with salinities ranging between 1,870mg/L and 2,390mg/L TDS. Groundwater is considered suitable for stockwatering purposes.	Distance to groundwater 8.7 to 15 metres below ground level (mBGL) (pre mining). Recovery of aquifer expected 12-16 years post closure
Paddy Well	4.9km northwest of Premises **Screened out due to distance – No further assessment required**
Yower Tharra Well	5.7km southeast of Premises **Screened out due to distance – No further assessment required**
Native vegetation	The area is predominantly with Acacia shrublands. There is a permit (Purpose Permit 7240/5) for this site, but given the assessment of increasing tailings mining which is an activity already undertaken with already constructed infrastructure, there is no clearing expected to occur for this amendment. **No further assessment required**
Threatened and/or priority fauna	Peregrine Falcon occurs within the area

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 L9013/2016/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Category 5(b) 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 operation

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls / DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operations								
Tailings screening area and associated stockpiles Paste Plant	Potentially contaminated stormwater from storage and handling of tailings	Seepage to land impacting groundwater quality	Groundwater (refer to Table 3 for additional details)	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	**Condition 1 – General conditions** Condition 3 – Infrastructure and equipment (operation) **Conditions 4 –infrastructure and equipment (operation)** **Condition 8 – inspection of infrastructure** Condition 11 and 14 – groundwater monitoring and management actions Conditions 18 and 19 – notification requirements Conditions 20 and 21 – requirement to maintain accurate and auditable books Condition 22 – recording and reporting of received complaints Conditions 23 and 24 - auditing and reporting requirements	The general provisions of the EP Act also apply relating to pollution or unreasonable emissions (section 49), environmental harm (sections 50A, 50B and 50C), and notification of certain discharges of waste (section 72 of the EP Act).
Gilbeys TSF	Increased seepage at the TSF due to surface water ponding within excavated cells	Seepage through embankments and TSF floor impacting groundwater quality	Groundwater (refer to Table 3 for additional details)	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 3 – Infrastructure and equipment (operation) **Conditions 4 – infrastructure and equipment (operation)** **Condition 8 – inspection of infrastructure** Condition 11 and 14 – groundwater monitoring and management actions Conditions 18 and 19 –	The general provisions of the EP Act also apply (see above)

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls / DWER comments
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
							notification requirements Conditions 20 and 21 – requirement to maintain accurate and auditable books Condition 22 – recording and reporting of received complaints Conditions 23 and 24 - auditing and reporting requirements	
Use of pasted reclaimed tailings material to backfill underground mine voids	Solute from pasted tailings containing salts (sulphate, calcium) and some heavy metals	Solute released from pasted tailings impacting water quality within the mining voids (and pits) and surrounding groundwater quality	Fauna (Peregrine Falcon) utilising pit lakes as a drinking water source Groundwater (refer to Table 3 for additional details)	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	**Condition 1 – General conditions** Condition 2 – Infrastructure and equipment (construction) Condition 3 – Infrastructure and equipment (operation) Condition 5 – Emission and discharges Condition 11 and 14 – groundwater monitoring and management actions	Refer to L9013 November 2024 Decision Report – Section 3.3, for Detailed Risk Assessment

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
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advised of proposal (22 May 2025)	Comment was provided from DEMIRS on 20 June 2025 advising that they are currently assessing a revised Mining Proposal (MP) Reg ID 500501. The scope of the MP confirms an approximate 3 Mt increase in remining of historical dry tailings from the Gilbeys TSF for use in the backfill paste plant (total paste fill to underground voids as 4.1 Mt).	Noted. DWER understands that the 2 Mtpa of reclaimed tailings in the Part V licence amendment application is the maximum annual production capacity for the proposed paste plant and that the 3 Mt equates to the overall remining volume.
Licence Holder was provided with draft amendment on 25 June 2025	No comments were received by the applicant and an email was received 25 June 2025 waiving the 21-day consultation period.	Noted.

5. Decision

The delegated officer decided to amend the licence L9013/2016/1 in accordance with section 59(2) of the EP Act by increasing the volume of remined tailings and paste production as per the Licence Holder's application. In determining to this increase in volume on the licence, the following matters were considered:

- the risks posed by emissions and discharges for tailings remining and paste production from the premises were assessed for the November 2024 amendment of the licence which added the recovery of historical tailings material and construction/installation of a paste plant. Operational controls were added to the licence based on this assessment;
- There is no requirement for any infrastructure changes to the paste plant to allow the extra processing of tailings, the volume increase is based on the paste plant operating on both day and night shift;
- the premises will continue to be subject to the conditions of the licence during this period of increasing production to operating on both day and night shift; and
- in the event that risk issues arise in relation to the premises, the CEO may;
    a. amend the licence conditions at any point; and
    b. in the event of an alleged offence, exercise enforcement powers under the provisions of the EP Act.

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 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
Cover page	Prescribed premises category description table updated to include remining up to 2,000,000 tpa of tailings material for use (reprocessing) in the manufacturing of paste fill.
1, Table 1	Table updated to include proposed production limit for reprocessing of reclaimed tailings material.
2. Table 2	Table updated for the paste plant design capacity
4. Table 3	Table updated for the paste fill volume to 4.1Mtpa.

References

1. Department of Environment Regulation 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. Department of Water and Environmental Regulation 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Department of Water and Environmental Regulation 2019, *Guideline: Industry Regulation Guide to Licensing*, Perth, Western Australia.
5. Department of Water and Environmental Regulation 2024, Decision Report November 2024 - L9013/2016/1
6. Spartan Resources Ltd, *Dalgaranga Gold Project Licence Amendment Application*, Attachment 3B Activity Detail, April 2025
7. Tetra Tech Coffey, *Updated Gilbeys TSF Tailings Reclamation Design*, Attachment 8, March 2025