



Application for Licence Amendment

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

Licence Number	L9247/2020/1
Licence Holder	Beacon Mining Pty Ltd
ACN	603 853 916
File Number	DER2020/000120
Premises	Jaurdi Gold Project Mining tenements: M16/115, M16/529, M16/34, L16/120, M16/365 and part of M16/204 SHIRE OF COOLGARDIE WA As defined by the Premises maps in Schedule 1 attached to the Revised Licence
Date of Report	19/10/2023
Decision	Revised licence granted

A/Manager, Resource Industries

REGULATORY SERVICES

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

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1. Decision summary

Licence L9247/2020/1 is held by Beacon Mining Pty Ltd (Licence Holder) for the Jaurdi Gold Project (the Premises), located within mining tenements M16/115, M16/529, M16/34, L16/120, M16/365 and part of M16/204, Shire of Coolgardie.

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 L9247/2020/1 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 Application summary

On 16 May 2023, the Licence Holder submitted an application to the department to amend Licence L9247/2020/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The Licence Holder has constructed the Lost Dog in-pit Tailings Storage Facility (TSF) (Panel 2/4) at the premises in accordance with Works Approval W6702/2022/1. As construction and commissioning work has now been completed, the Licence Holder seeks an amendment to the existing licence. The following amendments are being sought:

- To authorise operation of the Lost dog in-pit TSF (panel 2/4), tailings and return water pipelines;
- To include surface water management infrastructure and to remove the previously licenced stormwater dam which has been replaced by the surface drainage infrastructure; and
- Inclusion of a network of eight monitoring/recovery bores established around the Lost dog in-pit TSF as well as another eight shallow groundwater monitoring bores.

The compliance documentation received by the Department for the construction of the Jaurdi in-pit TSF (panel 2/4), monitoring/recovery bores and pipeline infrastructure are as follows:

- Well construction compliance Report (received 12 January 2023; Compliance demonstrated 20 January 2023);
- Second phase Environmental Compliance Report (received 03 March 2023; Compliance demonstrated 17 March 2023);
- Environmental Commissioning Report (received 20 April 2023; Compliance demonstrated 26 April 2023).

2.3 Operation of the Lost Dog TSF Panel 2/4

The Lost Dog In-Pit TSF panel 2/4 (LDTSF24) incorporates a pontoon mounted decant pump, tailings pipelines and return water pipelines, spigots, and a network of 8 monitoring/recovery bores and another 8 shallow monitoring bores along the perimeter of the TSF. LDTSF24 has a usable storage volume of 2,800,000 cubic meters (m³) and it is proposed to store 2,100,000 tonnes of tailings over 2.7 years out of the 6-year project life. The pit has been design to have a minimum total freeboard of 0.7m at the end of the life of the pit, which includes 0.2 m to store the design storm event of 1% annual exceedance probability (AEP), 72-hour storm event.

The initial tailings will be deposited from the northwestern end of the facility, sub-aerially in the

form of slurry from a single open-ended pipe. The pipe will be of a sufficient length to allow deposition without eroding the sides of the pit. Other similar single pipe discharge points will be deployed from western and southern ends of the pit to allow the tailings to direct the supernatant pond and the pontoon- mounted decant pump towards the haul ramp at the northeastern end of the pit as the level of tailings rises. Water will be continually removed from the supernatant pond which maximises the in-situ dry density of the deposited tailings.

A network of 8 monitoring bores is located along the perimeter of the TSF which also has the capacity to act as recovery bores if required. An additional 8 shallow monitoring bores also have been established to act as monitoring bores only (Figure 1).

2.3.1 Tailings Characteristics

Geochemical assessment of the tailings was completed as a part of the TSF design study. It has indicated that the tailings will comprise of ore that dominates dolomite with traces of quartz, halite and smectite clay, some illite with traces of talc, chlorite and kaolin. The ore to be processed and deposited in the LDTSFP24 is the same as for other TSFs at the site. Based on the geochemical tests performed, it is indicated that the tailings are non-acid forming and contain negligible sulphides. Tailings will be discharged as approximately 35% solids slurry with annual production rate of 0.75 million tonnes per annum (Mtpa). Key composition characteristics of the tailing slurry are summarised in Table 1 below.

Table 1: Lost dog in-pit TSF (panel 2/4) tailings properties

Source	Parameter	Value
Tailings Slurry	pH	8.3 – 8.4
	TDS	51,210 mg/L
	Total Cyanide (Total CN)	117 mg/L
	WAD CN	117 mg/L
	Free CN	95 mg/L
	Acid Forming Potential	Non- acid forming (NAF)
	Arsenic	<0.01 mg/L
	Selenium	<0.05 mg/L
	Copper	1.3 mg/L
	Nickel	0.1 mg/L
	Zinc	0.3 mg/L
	Cobalt	0.12 mg/L

The hydraulic conductivity of the tailings is considered to be similar to Lost dog TSF panel 1 and is estimated to be 1×10^{-8} to 10^{-9} m/s. This is equal to 0.00691 m/day which will estimates a seepage rate of 402 m³/day.

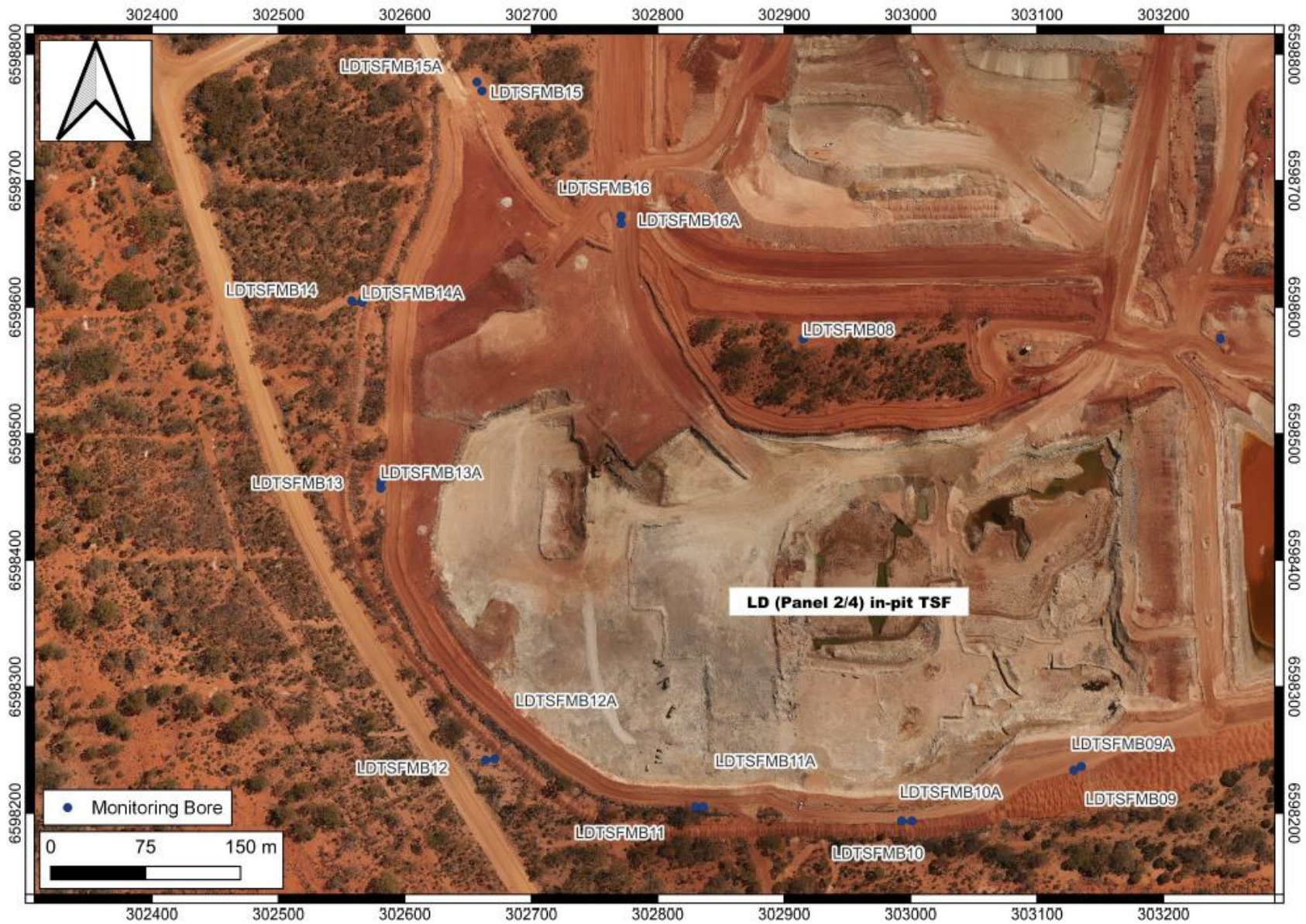


Figure 1: Lost Dog in-pit TSF (Panel 2/4) monitoring bore

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2.3.2 Groundwater Standing levels and Quality

A baseline groundwater analysis has been completed for the LDTSF24 monitoring bores which have been installed around the perimeter of the facility. Groundwater around the project area is considered saline. Underlying groundwater at the TSF area has recorded a total dissolved solids (TDS) concentration of between 43,000 and 68,000 mg/L. The main use of this groundwater is for mining purposes such as onsite processing activities and for dust suppression. Current groundwater standing water levels around the TSF range between 17.82 meters below ground level (mbgl) (bore LDTSFMB13) and 24.45mbgl (bore LDTSFMB13) (Figure 1).

pH of the deep bores surrounding the TSF ranges widely from acidic at LDTSFMB11, LDTSFMB12, LDTSFMB15 and LDTSFMB16 (approximately 4.1 – 4.9) to near-neutral at LDTSFMB09 and LDTSFMB10 (approximately 6.4 – 6.5). WAD cyanide concentrations in groundwater around the TSF has also been monitored and recorded at or less than 0.02 mg/L.

2.4 Surface water management

Stormwater passing through the site takes the form of shallow overland or sheet flow in a broad northwest to southeast direction. There are no perennial or ephemeral drainage lines within the Lost Dog Panel 2/4 pit area however, one minor ephemeral drainage line intersects the proposed pipeline corridor.

East and West Diversion Drains in the premises diverts the shallow stormwater away from the site infrastructure. The Licence Holder has committed to backfill approximately the first 600 m of the East diversion drain, so that any seepage from the TSF is not intercepted by the drain. In addition to those two diversion drains, 2 diversion drains, and 2 associated levees (Figure 2) were constructed as a part of the Jaurdi TSF development.

Diversion 1 drain intercepts stormwater intersecting the north and western side of the site and the Lost Dog Panel 4 Pit. This drain will take some of the flow reporting to the Eastern Diversion Drain and most of the flow reporting to the Western Diversion Drain. A levee (Levee 1) alongside the drain will prevent flooding in the 1% AEP event, both from overland flow and from the drainage line to the south of the site.

Diversion 2 will join Diversion 1 north of the Jaurdi TSF and drain toward the east, discharging into the existing flow path on the edge of the mine tenement. A levee (Levee 2) alongside Diversion 2 will follow the tenement boundary down to the East Diversion Drain, preventing shallow overland flow from moving toward the TSF and the closed section of the East Diversion Drain.

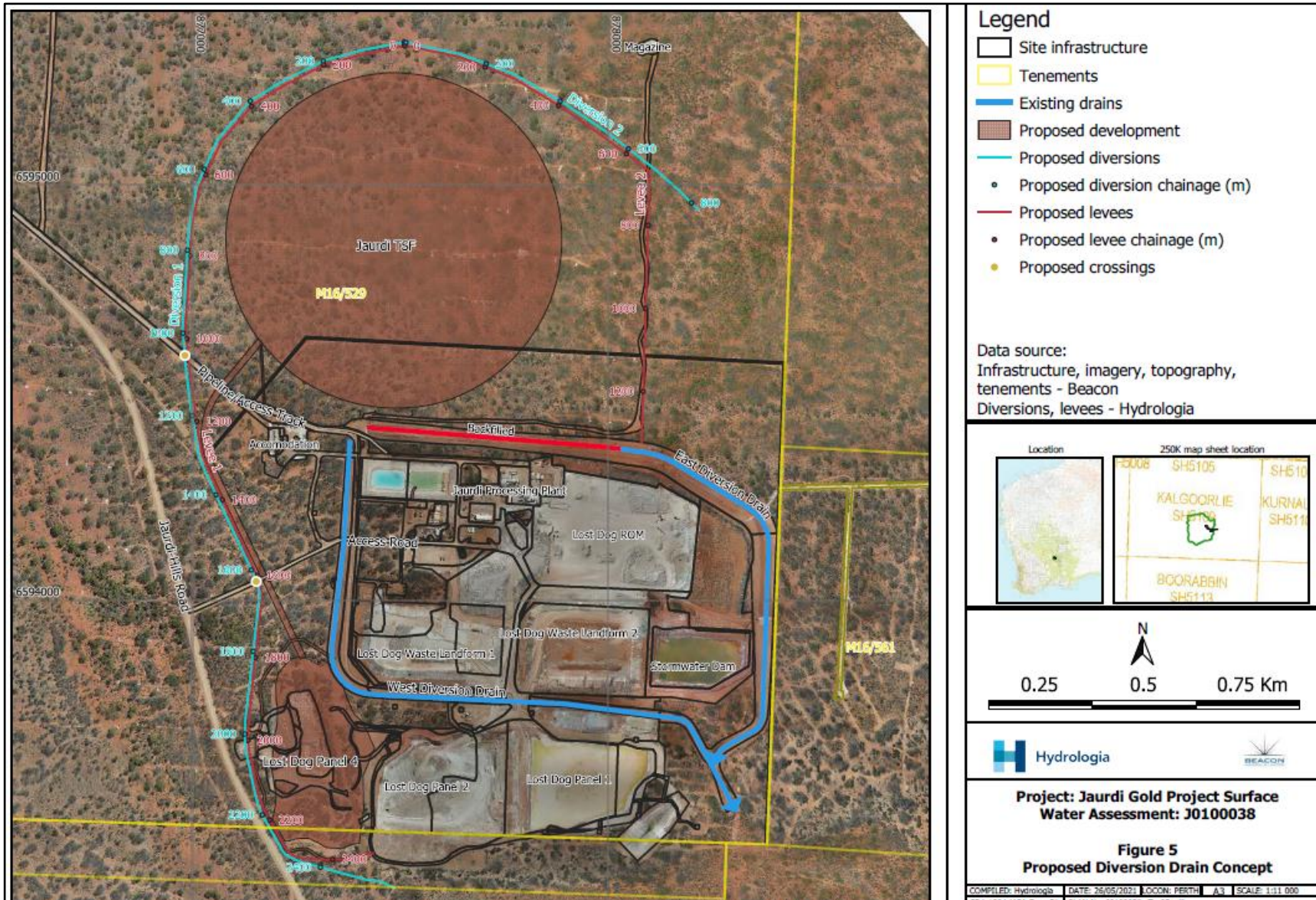


Figure 2: Surface drainage design at Jaurdi Project

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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	Deposition of tailings	Air / windborne pathway causing impacts to vegetation health	<ul style="list-style-type: none"> • Manage tails deposition to ensure the conditions of the TSF beach minimise dust (i.e. moisture conditions), the tailings will be below ground surface and will incur less winds.
TSF supernatant	Deposition of tailings to the pit	Seepage – Groundwater mounding	<ul style="list-style-type: none"> • Baseline and operations sampling from TSF monitoring bores; • Return and operations sampling from TSF monitoring bores; • Maintenance of a minimum operating freeboard of 700mm from top of pit crest; • A Tailings operating manual has been produced containing information on operating practices, maintenance requirements and reporting procedures; • Scheduled inspections are to be undertaken at least once per shift by TSF management to ensure the facility is being run as per the Tailings operating manual; • A TSF inspection log will be completed for each inspection and be available to regulators for auditing purposes; • Commission recovery bores if required and mounding is detected; • Implement vegetation monitoring when seepage is detected;

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			<ul style="list-style-type: none"> • Geotechnical assessment of the TSF by a third-party auditor will be undertaken annually.
		Overtopping of tailings	<ul style="list-style-type: none"> • Maintenance of a minimum freeboard of 700mm from top of pit crest; • A Tailings operating manual has been produced containing information on operating practices, maintenance requirements and reporting procedures; • Scheduled inspections are to be undertaken at least once per shift by TSF management to ensure the facility is being run as per the Tailings operating manual; • Geotechnical assessment of the TSF by a third-party auditor will be undertaken annually.
Spillage of tailings and decant return water	Tailings delivery and return water pipelines	Direct discharge due to pipeline rupture or failure	<ul style="list-style-type: none"> • Tailings delivery and return water lines to be laid above ground within a bunded, corridor to capture any potential spills resulting from leaks or lines that burst during operation; • This containment has the capacity to hold 6 hours of spillage up to 29% of the maximum tailings pumping capacity; • Twice daily inspections of TSF pipeline during operation; • Leak detection measure have incorporated within the pipeline system; • Continuous process control monitoring of flow meters at either end of the delivery lines with automatic shut off triggers. In the event flow meter readings indicate pipeline failure, the affected pipeline will be shut down until repaired and spilled material is collected and/or pumped, as appropriate, and deposited in the TSF; • Annual calibration of pipeline telemetry systems; • Annual pipeline corridor audit to ensure pipeline bunding capacity is maintained.

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
Pastoral Lease – Mt Burges Station	Prescribed premises boundary within Mt Burges Station pastoral lease. Homestead is greater than 5km away from the premises. Screened out as a sensitive receptor
Environmental receptors	Distance from prescribed activity
Aboriginal Heritage Sites	There are no recorded Heritage Sites within ~2km of the LDTSFP24
Groundwater – Proclaimed Groundwater Area - Goldfields	Groundwater has been encountered at 7 mbgl – 12 mbgl and is saline, ranging from 12,000mg/L to 77,000mg/L TDS.
Surface Water	A minor non-perennial watercourse (located ~110m north to the LDTSFP24) runs through the prescribed premises boundary, flowing from west to the east and draining to an un-named surface water body approximately 15.5 km to the east.
Threatened Flora – <i>Eucalyptus educta</i> (P2) <i>Eremophila praecox</i> (P2)	1 record in 2014 located approximately 4.1 km north-west of the prescribed premises boundary. 4 records in 2017 located within the vicinity of the prescribed premises (Figure 3). (Two closest plants are 419 m west of the LDTSFP24).
Native Vegetation	Within the prescribed premises boundary are six groups of native vegetation which surround the Pit (Figure 4).
Threatened Fauna Mallefowl (<i>Leipoa ocellata</i>) (VU)	1 recording reported in 1985 located approx. 1.44 km west of prescribed premises boundary, no active nesting mounds.

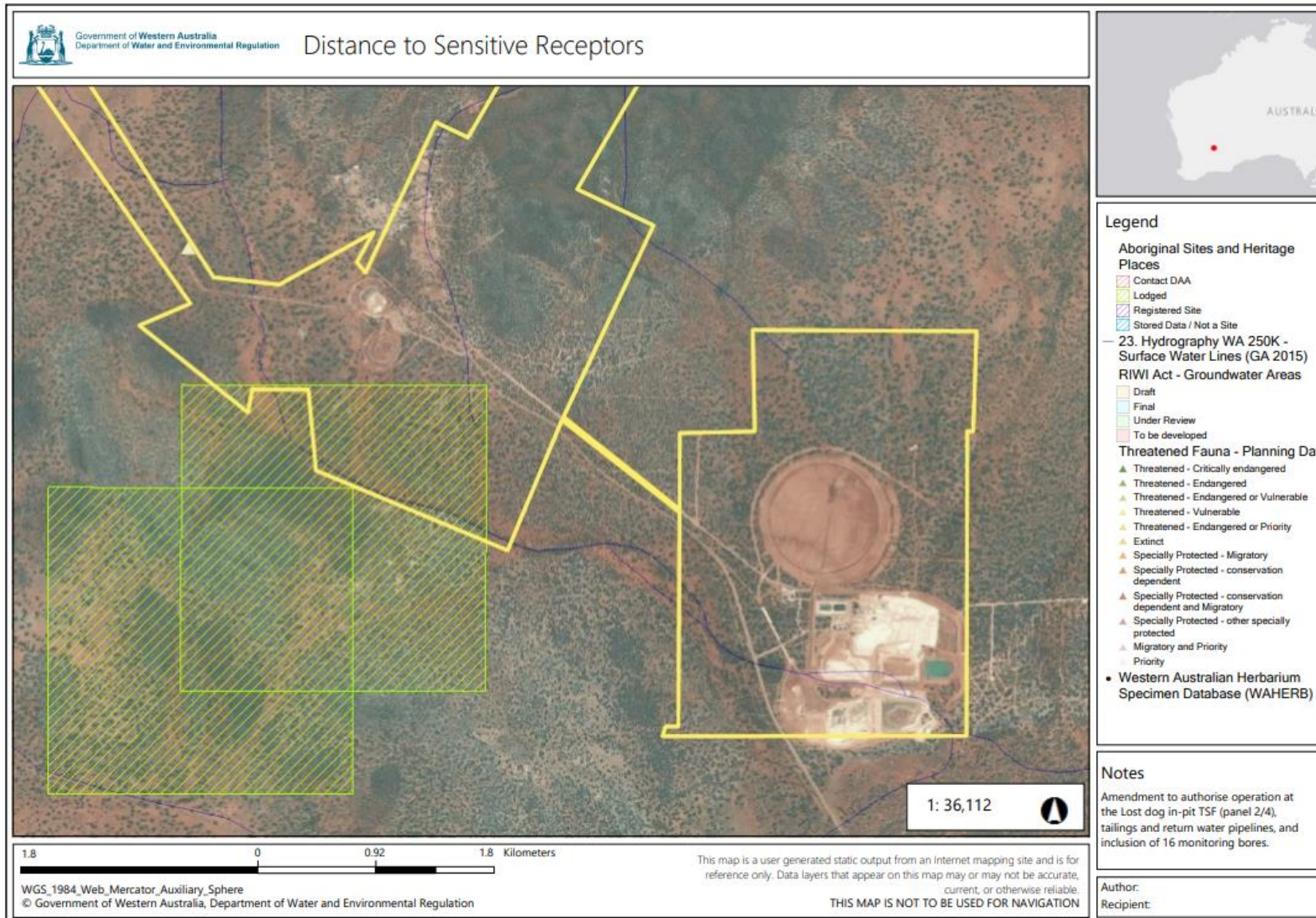


Figure 3: Distance to Sensitive receptors at Jaurdi Gold mine

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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 0. 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 0), 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 L9247/2020/1 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 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								
Discharge of tailings into the Lost dog in-pit TSF panel 2/4	TSF leachate containing concentrations of elements with environmental significance (cyanide-metal complexes)	Seepage / Infiltration of supernatant water through pit walls and base resulting in reduced groundwater quality.	Groundwater	Refer to Section 3.1.1	C = Minor L = Possible Medium Risk	N	Condition 1: Infrastructure requirement Updated Condition 6: Monitoring ambient groundwater quality – added requirement to monitor WAD and Total Cyanide quarterly.	See section 3.3 for further information.
		Groundwater mounding resulting in seepage expression on surface, impacting vegetation and reducing surface water quality.	Priority flora, native vegetation in vicinity of the pit Minor ephemeral surface watercourse within premises boundary	Refer to Section 3.1.1	C = Moderate L = Possible Medium Risk	N	Condition 1: Infrastructure requirement Condition 8: standing water level trigger values Condition 10: Management actions	
	Tailings	Overtopping of tailings resulting in direct discharges to land and infiltration to soil resulting in reduced soil and surface water quality and impacting health of surrounding vegetation	Priority flora, native vegetation in vicinity of the pit Minor ephemeral surface watercourse within premises boundary	Refer to Section 3.1.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1: Freeboard requirement Condition 4: Authorised discharge points	The Delegated Officer considers that the applicant controls, summarised in section 3.1.1, are sufficient to manage the risk of overtopping of tailings from LDTSFP24. The Licence holder is required to maintain a minimum freeboard of 700 mm and daily inspection of the supernatant pond level is also required. No additional regulatory controls are required

	Dust liftoff from tailings	Air / windborne pathway causing impacts to vegetation health due to dust deposition leading to reduced ability for photosynthesis and smothering	Surrounding Vegetation	Refer to Section 3.1.1	C = Minor L = Rare Low Risk	Y	N/A	The Licence Holder has proposed to deposit the tailings in a manner that minimize dust generation by maintaining adequate moisture in the tailings. Therefore, the Delegated Officer has determined that additional regulatory controls are not required.
Tailings delivery and return water pipelines	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	Priority flora, native vegetation in vicinity of the pit Minor ephemeral surface watercourse within premises boundary	Refer to Section 3.1.1	C = Minor L = Unlikely Medium Risk	Y	Condition 1: Infrastructure requirement	The current operating licence has existing conditions relating to the regulation of spills and leaks from the tailings and return water delivery pipelines. These include the requirement that all the pipelines need to be equipped with telemetry, pressure sensors and automatic cut-outs. Also, these pipelines are located within a bunded corridor, which will contain any potential leak or spillage of tailings. However, this existing control has not been included in the licence and therefore has been added into the revised licence in accordance with <i>Guidance statement: Risk Assessments</i> (DER 2017). According to the current licence conditions, the Licence Holder also committed to inspect tailings and return water pipelines and associated containment structures once per shift to detect any spills or leakage. No additional regulatory controls are required.

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.

3.3 Detailed risk assessment for seepage and mounding impacts

3.3.1 Seepage and mounding risks during operation of LDTSP24

The tailing slurry will be deposited into the LDTSP24 with 35% solid content. Water will be continually removed from the supernatant pond to maximise the in-situ dry density. However, a portion of water, which entrained in the tailings, will still be accumulate within the TSF. It is assumed that the water loading rate into the LDTSP24 will not be different to the water loading rates into the other TSFs in the project. A portion of this water will be released from the storage and considered to be the seepage from the facility which is 402 m³ per day (4.7 lps) and this assumption of the seepage rate has been used for the seepage modelling.

Within the tailings storage facility, the lateral hydraulic conductivity is considered to be low, whereas the vertical conductivity is considered to be extremely low. It is assumed that there is vertical leakage from the base of the storage facility, which can be resulted tailings seepage and mounding impacts around the LDTSP24.

A seepage model was run to predict the seepage path, rates and the directions. Initial steady state seepage prediction model showed lateral seepage of 20m after 10 years at a rate of 2.0 m/year. The TSF then modelled in transient mode and the hydraulic loading of 4.7 lps was added over a period of 10 years. The model then resulted up to 55m of mound and 115m of lateral seepage in 10 years. These mounding results appeared to be excessive.

When the model was re-run without the loadings from LDTSP24 Pit, the results were similar to the models of the other TSF and mounding reduced to 20 m. And when the loadings to the LDTSP24 are included in the model, the mounding around lost dog pit increases from 20m to 55 m. It is considered that this increase resulted due to the combined effects of loading multiple facilities.

3.3.2 Potential Impacts to the environment

Key potential impact from tailings seepage is inundation of the rootzone of surrounding native vegetation by rising groundwater levels. It is mentioned that the pre-mining water level in the vicinity of the TSF were approximately at 10 mgbl and the pumping from the supply bores have dropped the water levels around 20 mgbl. Baseline monitoring of standing water levels around the LDTSP24 also confirms that the surrounding groundwater levels range between 17.5mgbl to 25mgbl. Additionally, the vegetation surrounding the TSF is not regarded as a ground-water dependent ecosystem. However, as the seepage model indicated, due to the hydraulic loading into the LDTSP24, it can be considered that the seepage impact and any potential groundwater mounding impacts are possible.

Technical review of the modelling noted that the model used is classified as having the lowest level of confidence for predicting changes to the groundwater flow regime that are caused by an imposed stress on an aquifer. This is because the model was largely calibrated using estimated values of aquifer parameters rather than from measurements of these parameters that were obtained by testing at the site.

The height of the groundwater mound was independently assessed using aquifer parameters that were provided in the seepage study report. The predicted elevation of the mound (about 45 metres) was similar to that produced by the Licence holder's model, that is, the predicted elevation of the groundwater mound caused by tailings disposal in the Lost Dog pit is plausible.

However, the independent assessment of mounding indicated that the elevation of the mound was very sensitive to changes to aquifer parameters like hydraulic conductivity and storage coefficient, and to the thickness of the aquifer. The predicted height of the groundwater mound was particularly sensitive to the initial saturated thickness of the aquifer, and mounding increases where the aquifer is at its thinnest. This could be a significant issue for the area near the Lost Dog pit, where a silcrete unit forms a local perched aquifer. If this unit is laterally

extensive near this pit, water perching on this unit could further increase the elevation of the mound that is produced by seepage from tailings disposal.

The seepage report suggested that the groundwater mound beneath the Lost Dog pit would progressively develop over about a ten-year period. However, this assessment does not consider the effects that tailings consolidation can have on groundwater mounding. As tailings consolidate, the pore-water they contain can be “squeezed out” into regolith or rocks surrounding the pit, which can increase the rate of seepage from the pit. Consequently, if tailings consolidation takes place quickly, the rate at which a groundwater mound can develop may also increase.

Technical review of the use of bores for groundwater recovery (a control proposed by the applicant) also noted that this can be problematic for the following reasons:

- Monitoring bores are constructed with a diameter smaller than required for optimal groundwater recovery, which restricts the volume of water which can be pumped to develop a significant cone of depression;
- Screening intervals are also not compatible. Monitoring bores are often 3-6 m long to enable monitoring to take place at a discrete depth within an aquifer, while recovery bores are often indiscrete at more than 10 m long; and
- The remaining monitoring bores cannot accurately measure standing water level trends for the region if a significant number of monitoring bores are repurposed.

Hydraulic conductivity directly influences pumping efficiency. At the Lost Dog In-Pit TSF, the sediments in the paleochannel are largely clayey and have a low hydraulic conductivity. Although sand and gravel beds occur within the paleochannel, these appear to be poorly interconnected. Consequently, it is likely that many pumping bores would need to be installed in these sediments to control groundwater mounding near the Lost Dog pit.

There is a large degree of uncertainty in the magnitude and timing of groundwater mounding that would take place as a result of tailings disposal in the Lost Dog pit. Additionally, it is not clear that the proposed groundwater recovery plan would be effective in controlling groundwater mounding. This is due to the generally low hydraulic conductivity of the paleochannel and bedrock aquifers in the area. However, on review of the monthly bore monitoring data for the other TSFs on site (Panther, Black Cat and Lost Dog in-pits) from the Annual Environmental Reports (AER) for the premises, it shows that Standing water levels did not breach the licence limit of 6 m below ground level (bgl). Spikes in WAD cyanide did occur during late 2020 and early 2021 but these are likely associated with the topping up of the pits, more acceptable levels were reached by late 2021. By nature of in-pit TSFs, seepage generally occurs below the vegetation root zone and despite the clayey soils promoting lateral seepage, to date, no vegetation degradation has been observed in relation to TSF seepage at the premises.

3.3.3 Overall risk rating of the seepage and mounding impacts and regulatory controls

The Delegated officer considers that it is **possible** that seepage from the TSF will lead to mounding of groundwater resulting in moderate impacts to the environment (potential for stress/death of vegetation). Thus, the final risk rating for this event is therefore **‘Medium’**.

The Licence Holder has constructed 8 new monitoring/recovery bores and 8 shallow bores to be constructed around the LDTSP24 to monitor the groundwater levels over time. The deeper bores will have the ability to be converted to recovery bores if the need arises. The shallower bores have been conditioned within the licence and groundwater monitoring requirements expanded to include the new bores. An additional requirement to monitor for total cyanide, WAD cyanide and TDS within groundwater bores have been added to the licence as these are important parameters to be measured when monitoring for seepage impacts.

A trigger value of 6 mbgl have also been conditioned for standing water levels for these bores

along with a requirement to undertake pumping from the recovery bores if this trigger value is exceeded.

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 19/9/2023	Comments received on 18/10/2023: Licence holder confirmed that stormwater dam is no longer in use and was removed as part of subsequent mining approvals for Lost Dog Panel 3 open pit. Stormwater from the processing plant area is managed by internal bunds with stormwater reporting to the Lost Dog open pits.	Reference to the stormwater dam has been removed from Table 1 and Table 3.

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/item no.	Proposed amendments
Condition 1, Table 1 – Tailings storage facilities	Inclusion of Lost dog panel 2 and 4 in-pit TSF infrastructure, 8 monitoring/recovery bores, 8 shallow monitoring bores into the revised licence.
Condition 1, Table 1 – Tailings and return water pipelines	Pipelines are constructed within a bunded corridor and maintaining that requirement is added into the revised licence. Inspection requirement of flow meters, telemetry and pressure transmitters is added.
Condition 1, Table 1 – Surface water management infrastructure	Surface water management infrastructure, i.e. diversion drains and levees, are added into the revised licence Reference to stormwater dam has been removed.
Condition 4, Table 3 – Authorised	Lost dog in-pi TSF panel 2/4 is added as an authorised discharge point of tailings

discharge points	Reference to stormwater dam has been removed.
Condition 6, Table 4 – Monitoring of ambient concentrations	Inclusion of Lost dog in-pi TSF panel 2/4 monitoring bores as monitoring locations within the groundwater monitoring program.
Condition 8, Table 5 – Ambient water quality trigger values	Inclusion of Lost dog in-pi TSF panel 2/4 monitoring bores as monitoring locations with an ambient water quality trigger value
Condition 10, Table 6 – Requirement of management actions	Inclusion of Lost dog in-pi TSF panel 2/4 monitoring bores as monitoring locations which require management actions in the event of exceedance of the trigger value
Condition 11	Inclusion of Lost dog in-pi TSF panel 2/4 as part of the monthly water balance calculations.
Table 8 - Definitions	Lost Dog in-pit Tailings Storage Facility panel 2/4 is added into the table
Schedule 1 - Maps	Figure 7 is added to depict the monitoring/recovery bores and shallow monitoring bores around the Lost dog in-pi TSF panel 2/4
	Figure 7 – Figure 9 in the previous licence are updated into Figure 8- Figure 10 in the revised licence to match with the new numbering
	Figure 11 is added to illustrate the surface water management infrastructure around the Jaurdi gold project

















References

1. Email titled “L9247/2020/1 - Beacon Mining Pty Ltd - Jaurdi Gold Project - Application to Amend Licence - Application form and supporting documents” dated 16/05/2023 authored by Lauren Pick, available at DWER records (DWERDT778996).
2. DER 2015, Guidance Statement: Setting Conditions, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2019, Guideline: Decision Making, Joondalup, Western Australia.
4. DWER 2020(a), Guideline: Risk assessments, Joondalup, Western Australia.
DWER 2020(b), Guideline: Environmental siting, Joondalup, Western Australia.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Licence Amendment – L9247	☒	Relevant works approval number:	W6702	None	<input type="checkbox"/>
		Has the works approval been complied with?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Please refer to A2163924		
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Time limited operations reports not received as yet.		
		Environmental Compliance Report submitted?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
		Date Report received: 20/04/23			
Date application received		16/05/2023			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Beacon Mining Pty Ltd			
Premises name		Jaurdi Gold Project			
Premises location	Tenement Name		Tenement Owner		Expiry
	L16/120		Beacon Mining Pty Ltd		10/10/2038
	M16/34		Beacon Mining Pty Ltd		27/01/2029
	M16/115		Beacon Mining Pty Ltd		09/09/2032
	M16/204		Toro Mining Pty Ltd JH Mining Pty Ltd		27/12/2036
	M16/365		Beacon Mining Pty Ltd		16/11/2042
	M16/529		Beacon Mining Pty Ltd		07/03/2032
	M16/560		Beacon Mining Pty Ltd		25/02/2040
The Premise occurs within the Mt Burges Pastoral Lease (LA3114/1222).					
Local Government Authority		Shire of Coolgardie			
Application documents					
HPCM file reference number:		DER2020/000120~4			

Key application documents (additional to application form):

	Appendix 1 LDIPTSFP 24 Construction F	2023-06-14	34.1 MB
	Appendix 10 Panel 2_4 TSF Design Repc	2023-06-14	36.4 MB
	Appendix 11 230501_Stakeholder Consi	2023-06-14	302 KB
	Appendix 12 Bioremediation Facility Prc	2023-06-14	369 KB
	Appendix 13 Beacon Pipeline Audit Rep	2023-06-14	42.0 MB
	Appendix 2 Third-party authorisation U	2023-06-14	11.2 MB
	Appendix 3 Surface Water Assessment (2023-06-14	9.76 MB
	Appendix 4 Lost Dog Panel 2_4 Seepag	2023-06-14	3.03 MB
	Appendix 5a Tailings Geochemical Asse	2023-06-14	1.31 MB
	Appendix 5b Tailings Geochemical Asse	2023-06-14	1.00 MB
	Appendix 5c Tailings Geochemical Asse	2023-06-14	0.99 MB
	Appendix 6a Cross Section of Lost Dog	2023-06-14	480 KB
	Appendix 6b Cross-section of Panther V	2023-06-14	1.51 MB
	Appendix 6c 2017 Lost Dog AMD Waste	2023-06-14	125 KB
	Appendix 6d 2020 Lost Dog Panel 4 AM	2023-06-14	127 KB
	Appendix 6e Panther AMD Waste Chara	2023-06-14	135 KB

Scope of application/assessment

Summary of proposed activities or changes to existing operations.	<p>Beacon Mining Pty Ltd (Beacon) have constructed the Lost Dog in-pit Tailings Storage Facility (Panel 2/4) at the Jaurdi Gold Project (Project) in accordance with Works Approval W6702/2022/1. As construction and commissioning work has now been completed (as detailed in Appendix 1), Beacon seeks an amendment to the existing Operating Licence; L9247/2020/1 to include prescribed premise operations for the Lost Dog in-pit TSF (Panel 2/4) and remove the previously licenced stormwater dam which has been replaced by surface drainage infrastructure installed as part of the Jaurdi TSF development.</p> <p>The additional facilities to be licenced under the amendment include:</p> <ul style="list-style-type: none"> • Lost Dog in-pit TSF (Panel 2/4) • Lost Dog in-pit TSF (Panel 2/4) tailings and return water pipelines • Monitoring/ Recovery Bores • Surface water management infrastructure
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5: Processing or beneficiation of metallic or non-metallic ore	750,000 tonnes per annual period	No changes to design capacity, only transference of in pit TSF into the licence
Category 89: Putrescible landfill site	<5,000 tonnes per annual period	No changes

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/> Expiry: As above

Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Mning Act Tenure
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CPS No: CPS7794/3, CPS8907/1
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input type="checkbox"/>	GWL 203729(2), GWL201802(4)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: Goldfields Groundwater Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Regional office: Goldfields
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining Act 1978
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
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