



Application for Licence Amendment

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

Licence Number	L5946/1988/13
Licence Holder	Kalgoorlie Consolidated Gold Mines Pty Ltd
ACN	009 377 619
File Number	APP-0029965
Premises	Gidji Processing Plant KALGOORLIE WA 6430 Legal description – General purpose leases G24/24, G24/25, G24/26, G24/27, G24/28, G24/29, G24/30, G24/31, G24/32, and G24/33 As defined by the Premises map attached to the Revised Licence.
Date of Report	25 March 2026
Decision	Revised licence granted

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1. Decision summary

Licence L5946/1988/13 is held by Kalgoorlie Consolidated Gold Mines Pty Ltd (Licence Holder) for the Gidji Processing Plant (the premises), located within general purpose leases G24/24, G24/25, G24/26, G24/27, G24/28, G24/29, G24/30, G24/31, G24/32, and G24/33.

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 L5946/1988/13 has been granted.

The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

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 Overview of premises

When commissioned in 1989, the premises was designed to be a gold roasting and extraction facility. The premises, located approximately 15 km north of the Kalgoorlie-Boulder township, was meant to replace older gold roasters that were operating closer to town, due to concerns of sulfur dioxide emissions associated with roasting activities.

Gold concentrate is trucked to the premises from the Fimiston Processing Plant (regulated under licence L6420/1988/14), which is also operated by the Licence Holder. The gold ore and subsequent concentrate are primarily sourced from the Fimiston Open Pit, with a small quantity from the Mount Charlotte underground mine, located adjacent to the Fimiston Processing Plant. A large proportion of gold ore is associated with refractory sulfidic minerals, which are concentrated via flotation.

In 2014, the Licence Holder implemented the KCGM Emissions Reduction Project, which saw roasting at the premises discontinued and replaced with an ultrafine grinding (UFG) circuit. Gold sulfide flotation concentrate is classified at a nominal rate of 65 tonnes per hour at the Fimiston Processing Plant, with the coarse fraction being filtered and trucked to the premises for further processing in the UFG circuit. The process involves regrinding the concentrate to a significantly finer particle size distribution before progressing via a carbon-in-pulp circuit. The loaded carbon is then trucked back to the Fimiston Processing Plant for final stages of treatment (e.g., carbon stripping, electrowinning, and bullion production). Tailings produced from the UFG circuit are potentially acid forming and are managed within the premises.

Infrastructure at the premises includes a carbon-in-pulp circuit, two UFG mills, two decommissioned concentrate roasters, the inactive Gidji I tailings storage facility (TSF), and the currently active Gidji II TSF (Figure 1).

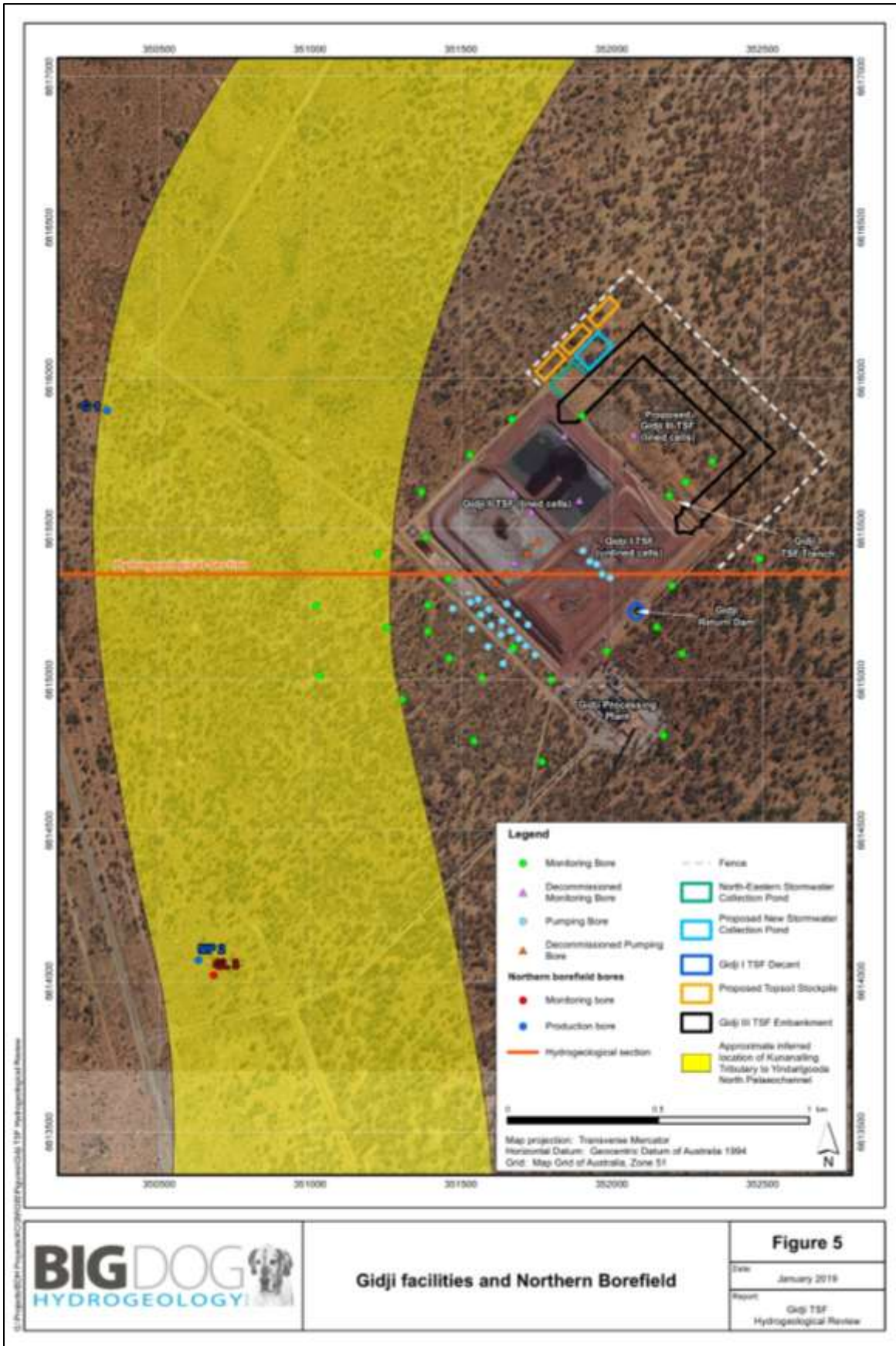


Figure 1: Premises layout with existing groundwater monitoring bores, groundwater recovery bores, as well as the location of the Yindarlgooda North Paleochannel

2.2.1 Gidji I TSF

The Gidji I TSF was commissioned in 1989 and comprises two unlined cells, where tailings slurry was discharged. Ore processing utilised lime and cyanide, as well as hypersaline water from surrounding borefields. Return water was removed from the TSF and stored at the Gidji Return Dam to be reused in the processing circuit (Figure 1).

Operation of the unlined Gidji I TSF had resulted in tailings seepage entering the subsurface environment below the facility. Seepage was managed through the operation of a production bore (PB R01) and the Gidji Trench (Figure 1), constructed in 1994. In 1999, five additional production bores were installed to improve groundwater recovery, with another 13 and nine production bores installed in 2000 and 2003, respectively (Figure 1). Production bores were equipped with low flow air displacement pumps, which operated continuously to maximise groundwater recovery. At its peak, there were 28 production bores operating in tandem, though four of these were subsequently decommissioned to facilitate construction of the Gidji II TSF in the early 2010s.

Deposition into Gidji I TSF ceased in August 2013, with tailings deposition being undertaken at the newly constructed Gidji II TSF. No additional tailings had been deposited into Gidji I TSF since August 2015.

2.2.2 Gidji II TSF

In 2013, the two-cell Gidji II TSF was constructed, adjacent to the Gidji I TSF. The Gidji II TSF was constructed with a compacted clay liner and composite high-density polyethylene (HDPE) liner to minimise tailings seepage from cells. The facility is also equipped with a seepage underdrainage system, comprising an array of slotted secondary collector pipes encased in an envelope of clean filter material. The collector pipes feed into solid polyethylene primary collection pipes that discharge into a drainage sump.

The facility was initially designed to reach maximum elevation of 360 mRL through a series of downstream embankment raises. Having achieved this, the Licence Holder investigated the construction of a third TSF at the premises, which was later discarded due to the presence of conservation significant fauna. Consequently, the Licence Holder sought to undertake an upstream embankment raise at Gidji II TSF to 364 mRL. The embankment raises to the West Cell and East Cell were completed in June 2023 and November 2024, respectively. Current embankment heights are approximately 20 m above ground level.

The Gidji II TSF is currently active and receiving tailings from the processing plant at the premises.

2.3 Application summary

On 17 July 2025, the Licence Holder submitted an application to the department to amend licence L5946/1988/13 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Construction of an upstream embankment raise to the existing Gidji II TSF West Cell and East Cell, from 364 mRL to 368 mRL (i.e., a four-metre lift); and
- Operation of the Gidji II TSF West Cell and East Cell to a maximum elevation of 368 mRL.

The assessed production capacity of 438,000 tonnes per annual period for Category 5 activities (i.e., *processing or beneficiation of metallic or non-metallic ore*) will remain unchanged.

The proposed embankment raise was aimed at providing additional tailings storage capability at the premises, while the Licence Holder investigates and considers the feasibility of processing UFG tailings at the Fimiston Processing Plant. If feasible, the Licence Holder may undertake blending and co-mingling of UFG tailings stream with the existing tailings stream at the Fimiston

Processing Plant. The proposed embankment raise will provide an additional storage capacity of 790,000 tonnes, extending the life of the facility by approximately 2.5 years.

2.3.1 Embankment construction

The proposed embankment raise to Gidji II TSF will be undertaken in two stages of two metres, with a total height increase of four metres. The proposed maximum embankment crest elevation will be 368 mRL.

Firstly, the foundation of the upstream raise subgrade will be prepared, followed by placement and compaction of a pioneer layer to form a competent surface for the HDPE liner (Figure 2). The existing HDPE liner arrangement will be extended along the compacted tailings pioneer layer atop the tailings beach. Following installation of the HDPE liner, a protective geotextile layer is laid atop the HDPE. Then, the embankment will be raised to 368 mRL, where dried tailings material borrowed from the Gidji I TSF will be placed in 300 mm loose layer and compacted. Finally, HDPE will be lined over the upstream slope of the raised embankment and anchored into an anchor trench at the embankment crest.

The proposed specifications for Gidji II TSF require that a minimum density ratio of 95% of standard maximum dry density (SMDD), with a target moisture content of +2% to -4% of the optimum moisture content (OMC), be achieved in compaction control tests undertaken in accordance with Australian Standard 1289.5.4.1.

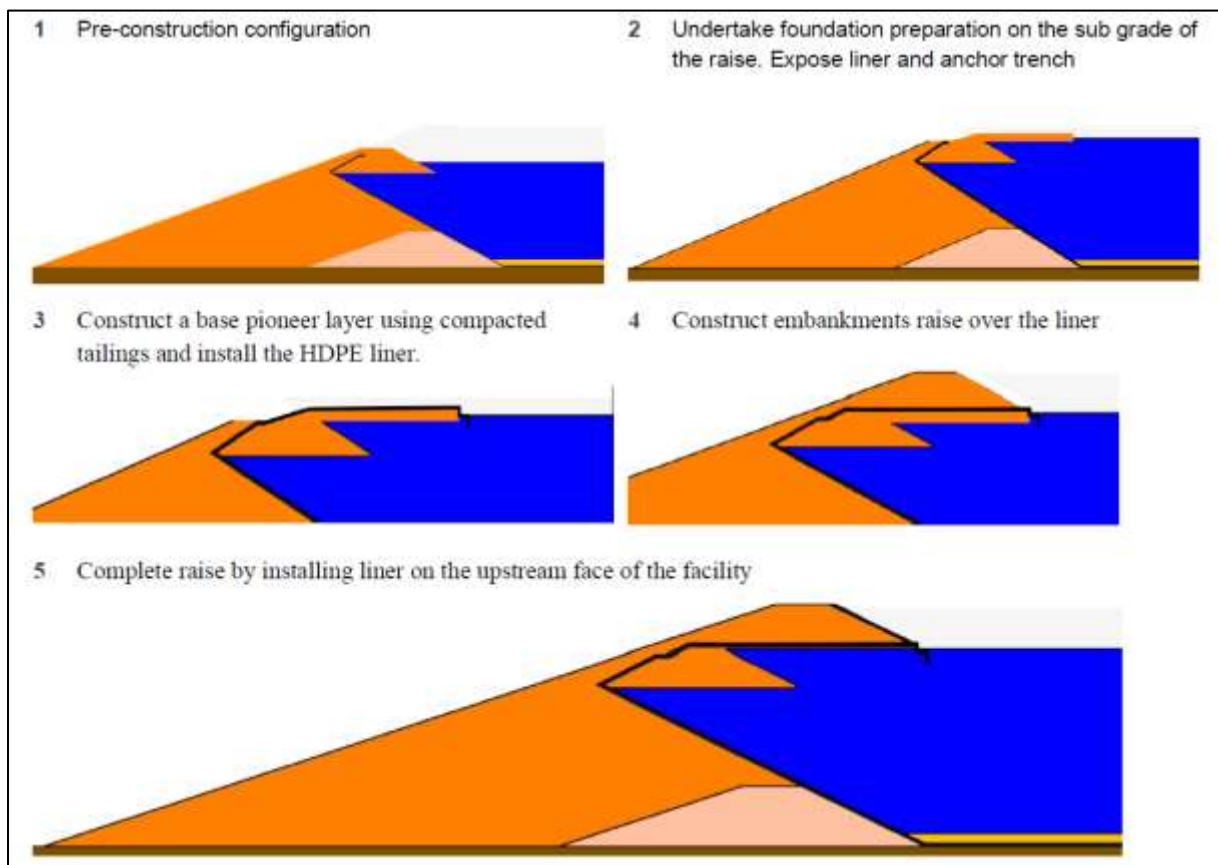


Figure 2: Embankment raise and HDPE liner installation process

The existing decant access causeway and dividing embankment between the East Cell and West Cell will be raised using centreline construction method. The extension of the HDPE liner will not be required in these areas.

The Licence Holder has installed netting at the Gidji II TSF decant pond area to prevent birds from accessing the cyanide-laden decant water. Other water storage facilities at the premises

have also been netted, including the toe drain on Gidji I TSF East Cell, the seepage interception trench, the Solar Pond and the Gidji TSF return water dam.

2.3.2 Operation of Gidji II TSF

The Gidji II TSF has been operating and receiving tailings from the processing plant since 2012. No modifications to the operational aspects of the facility are expected as part of the proposed embankment raise.

Tailings will continue to be deposited sub-aerially via multiple spigots around the perimeter embankment in shallow layers no thicker than 300 mm to maximise drying and consolidation. Discharge spigots will rotate in sets of four to six throughout the facility to maximise water shedding and maintain the decant pond location around the decant pump.

As per current practice, a turret system fitted with skid mounted or surface pump will continue to be utilised for decant water recovery. The pump will be capable of abstracting water from the pond to a minimum depth of 250 mm, allowing the decant pond size and depth to be minimised as much as practicable. Decant water will be pumped to the lined Gidji TSF return water dam for storage and reuse in the processing circuit at the premises or treated for cyanide before pumped to the Fimiston Processing Plant for reuse. The Licence Holder estimates that 35% to 60% of water discharged into the TSF could be recovered through the decant system under normal operating conditions.

Existing pipelines will be utilised for tailings delivery and decant recovery. Stormwater runoff will be collected within the tailings beach, while runoff on the downstream embankment will be collected within perimeter toe drains along the western, northern, and eastern flanks, which then flow towards the lined eastern and western stormwater ponds.

The Licence Holder is a signatory of the International Cyanide Management Code and manages cyanide-laden materials and water at the premises accordingly.

During the operation of the Gidji II TSF, ambient groundwater monitoring bores will continue to be monitored in accordance with requirements of licence L5946/1988/13 (Figure 1). The 16 groundwater recovery bores specified in the licence will also be operated to recover groundwater (Figure 1).

2.4 Key considerations

2.4.1 Tailings and supernatant characteristics

Tailings at the premises are produced as a result of processing gold sulfide flotation concentrate, which contains refractory sulfidic minerals. The source and characteristics of tailings slurry to be deposited into the proposed embankment raise at Gidji II TSF are expected to remain unchanged.

Based on geotechnical test works (WSP 2025), the following characteristics were described for the tailings deposited into Gidji II TSF:

- Tailings solids content is expected to be approximately 40%, with actual solids content ranging between 35% and 48% (NSR 2025).
- Vertical hydraulic conductivity of tailings material is approximately 1.1×10^{-8} m/s.
- Top and bottom drained settling test took approximately two days to achieve 90% of maximum settled dry density of 1.4 tonnes/m³.
- Settling tests indicated relatively short settling time, meaning tailings particles will settle rapidly, making it possible to maintain small and shallow decant pond, where clear water can be effectively removed via turret pump infrastructure without significant risk of silting.
- In drying test, peak dry density of 1.98 tonnes/m³ was achieved in approximately six and

25 days under summer and winter drying conditions, respectively. Due to high tailings salinity, salt crust formed on the beach surface, inhibiting air drying.

- Consolidation testing estimated that 300 mm of tailings will take approximately 15 days to consolidate under one metre of tailings.

Overall, the tailings can become unsaturated due to evaporative drying below a moisture content of 20%, indicating a tendency to release water slowly under self-weight consolidation and air drying. Further, the dry density achieved through evaporative desiccation can be further enhanced through mechanical turning of the material.

Based on geochemical assessment, the following characteristics were described for the tailings deposited into Gidji II TSF:

- The major minerals within tailings material are gypsum, hematite, and pyrite, with minor amounts of carbonate minerals (e.g., dolomite, calcite) (GCA 2010).
- The tailings posed a risk of acid mine drainage (AMD) generation with net potential ratio of ~0.1, due to high levels of sulfides associated with the pyrite¹ (GCA 2003; 2010). As such, the tailings were classified as potentially acid forming (PAF). With low to moderate acid neutralisation capacity (i.e., 44 kg H₂SO₄/tonne to 130 kg H₂SO₄/tonne), there will likely be a 'lag period' before the onset of AMD generation (GCA 2003; 2010).
- Tailings were found to be geochemically enriched with antimony, arsenic, bismuth, cadmium, cobalt, copper, mercury, molybdenum, lead, rhenium, silver, sulfur, selenium, tellurium, and tungsten (MBS 2016b).
- Tailings supernatant was observed with the following characteristics:
 - Alkaline, ranging between 9.0 pH unit and 9.4 pH unit, though previous measurements have indicated more (GCA 2010) and less (MBS 2016a) alkaline conditions. Net acid generation pH was found to be around 2.0 pH unit.
 - Hypersaline, with total dissolved solids ranging between 78,000 mg/L to 110,000 mg/L., primarily dominated by sodium and chloride ions (GCA 2010; MBS 2016a).
 - Significant concentrations of total cyanide (i.e., 4,460 mg/L to 5,550 mg/L) and weak acid dissociable (WAD) cyanide (i.e., 1,080 mg/L to 1,580 mg/L).
 - Low concentrations of dissolved metal and metalloids were detected, except for mercury, molybdenum, and nickel. Several metals were present at higher concentrations than previously thought, potentially due to formation of metal-cyanide complexes (e.g., cobalt, copper, iron, nickel, silver) (GCA 2010; MBS 2016a). Nitrate was also detected.
- Static leaching of tailings using deionised water resulted in tailings leachate with the following characteristics (MBS 2016a):
 - Slightly alkaline at 8.8 pH unit.
 - Brackish, with total dissolved solids around 5,000 mg/L or less.
 - Despite geochemical enrichment of arsenic, selenium, and tellurium within the tailings material, they were not detected at significant concentrations within the tailings leachate. Low concentrations of aluminium, barium, iron, magnesium, lead, uranium, thorium, vanadium, and zinc were also detected.

¹ Sulfide (as sulfur) content ranged between 6.1% to 23.0% (GCA 2003;2010). Subsequent investigations identified even higher sulfide content within the tailings, ranging between 33% to 37% (MBS 2016a).

- Concentrations of dissolved cobalt (~2.3 mg/L), copper (i.e., 3 mg/L to 20 mg/L), mercury (~0.6 mg/L), molybdenum (~0.2 mg/L), and nickel (~2.9 mg/L) were high, exceeding default guideline values for livestock drinking water. It was suggested that these metals were associated with relatively stable water-soluble cyanide complexes.
- Concentration of dissolved hexavalent chromium was also slightly elevated (~0.3 mg/L), potentially originating from the hydrated lime used in the ore processing, rather than present within the source ore.
- Overall, tailings leachate quality was found to be better than tailings supernatant quality. However, static testing using acetic acid resulted in elevated leachate concentrations for certain metals and metalloids, due to increased solubility of cyanide complexes under acidic conditions.
- Geochemical analysis was also completed for dried tailings stored at the Gidji I TSF to understand geochemical properties of oxidised/weathered tailings. It is noted that the tailings within Gidji I TSF may differ from fresh tailings being deposited to Gidji II TSF, as it consists of a mixture of UFG tailings and calcine tailings from historical roasting process (at unknown proportions). The old tailings were found to be non-acid forming, alkaline (i.e., 8.5 pH unit), brackish (total dissolved solids of 4,480 mg/L), with low concentration of cyanide species. While the tailings were found to be enriched with similar metal and metalloids as the fresh tailings (e.g., arsenic, antimony, silver, cobalt, copper, mercury, molybdenum, lead, selenium, tellurium), dissolved metal concentrations in leachate were lower, with only cobalt (3.2 mg/L) and copper (1.5 mg/L) exceeding default guideline values for livestock drinking water.

2.4.2 Seepage analysis and water balance

A seepage assessment was completed to investigate overall seepage losses from the Gidji II TSF as a result of the proposed embankment raise (WSP 2025). Seepage pathways through the base as well as the embankment walls were considered, noting that the basin and upstream embankments have been lined with HDPE.

Due to use of HDPE liner along upstream embankments, seepage flux through the embankments were minimal, at less than 1% of volumetric water deposited into the TSF as tailings slurry. This is under the assumption that the decant pond is remote from the perimeter embankments.

While seepage rates through the embankments are not expected to increase significantly due to the HDPE liner, predicted seepage rates through the base of Gidji II TSF would have increased from the current embankment height. At the current approved height, Golder (2022) previously estimated seepage rate through the base of the facility to be 21,350 L/day or approximately 2% of volumetric water deposited into the TSF (Figure 3). Under the proposed embankment raise, maximum seepage rate through the base of the facility was predicted to increase to 24,500 L/day or approximately 2.5% of volumetric water deposited.

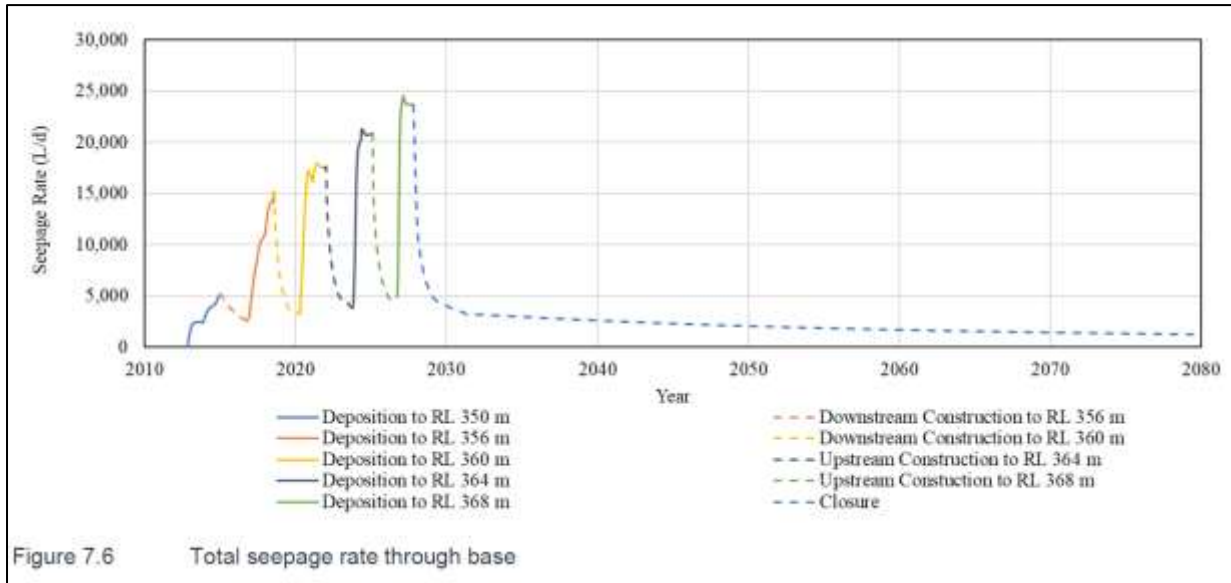


Figure 3: Predicted seepage rate through the base of Gidji II TSF over time

Using the predicted seepage rates from the seepage analysis, WSP (2025) developed a water balance for both East and West Cells of the Gidji II TSF under the proposed embankment raise. The purpose of the water balance was to estimate the volume of water available for decant recovery at the TSF (Table 1).

With predicted seepage rates of approximately 2% of deposited water and assuming 31% of water is retained within the facility as interstitial water, it was estimated that approximately 20,000 m³ (or 50%) of deposited water could be recovered through the decant pond for reuse at the premises.

In assessing the annual water balance for Gidji II TSF between 2022 to 2024 (Table 2), it was observed that:

The annual volume of decant water recovered from the facility was consistent, between 152,000 m³ and 165,000 m³, representing approximately 44% to 57% of water within the facility. This correlated well with the proportion of return water predicted in the water balance (Table 1)

- Additionally, the underdrainage system was able to remove an addition six to 16% of water. Cumulatively, the decant water and underdrainage system were able to account for 50% to 73% of water within the facility, with remainder lost to evaporation or entrained within the tailings mass.
- Seepage out of the facility was not monitored or estimated as part of the operational water balance, as the facility is lined with HDPE.

Furthermore, the department noted that groundwater recovery bores yielded approximately 32,678 m³ and 38,060 m³ of groundwater over the 2022 and 2023 annual periods (Figure 4). However, recovery yield decreased to 21,106 m³ in 2024 annual period, as pumping ceased in October 2024. No groundwater yield has not been reported since then.

The peak in groundwater recovery during the 2023 annual period corresponded with significantly higher underdrainage recovery in the same period, despite constant tailings deposition and return water recovery rates.

Table 1: Water balance for Gidji II TSF East and West Cell with proposed embankment raise to 368 mRL

Water flux	Component	Volume (m ³)	Proportion of total water
<i>East Cell</i>			
Inflow	Water from tailings slurry	370,000	95%
	Rainfall	20,000	5%
	Total	390,000	100%
Outflow	Evaporation	60,000	16%
	Interstitial water	120,000	31%
	Seepage	10,000	2%
	Decant water (return)	200,000	51%
	Total	390,000	100%
<i>West Cell</i>			
Inflow	Water from tailings slurry	360,000	96%
	Rainfall	20,000	4%
	Total	380,000	100%
Outflow	Evaporation	50,000	13%
	Interstitial water	120,000	31%
	Seepage	10,000	2%
	Decant water (return)	200,000	53%
	Total	380,000	100%

Table 2: Operational annual water balance for Gidji II TSF from 2022 to 2024

Water flux	Component	Volume (m ³)	Proportion of total water
<i>2022 annual period</i>			
Inflow	Water from tailings slurry	293,293	95%
	Rainfall	16,376	5%
	Total	309,669	100%
Outflow	Evaporation	27,406	9%
	Interstitial water	96,069	31%
	Underdrainage system	20,486	7%
	Decant water (return)	165,708	54%
	Total	309,669	100%
<i>2023 annual period</i>			
Inflow	Water from tailings slurry	270,621	95%
	Rainfall	13,769	5%

Water flux	Component	Volume (m ³)	Proportion of total water
	Total	284,390	100%
Outflow	Evaporation	47,573	17%
	Interstitial water	28,175	10%
	Underdrainage system	46,853	16%
	Decant water (return)	161,789	57%
	Total	284,390	100%
<i>2024 annual period</i>			
Inflow	Water from tailings slurry	320,300	92%
	Rainfall	27,789	8%
	Total	348,089	100%
Outflow	Evaporation	60,841	17%
	Interstitial water	113,804	33%
	Underdrainage system	21,000	6%
	Decant water (return)	152,444	44%
	Total	348,089	100%

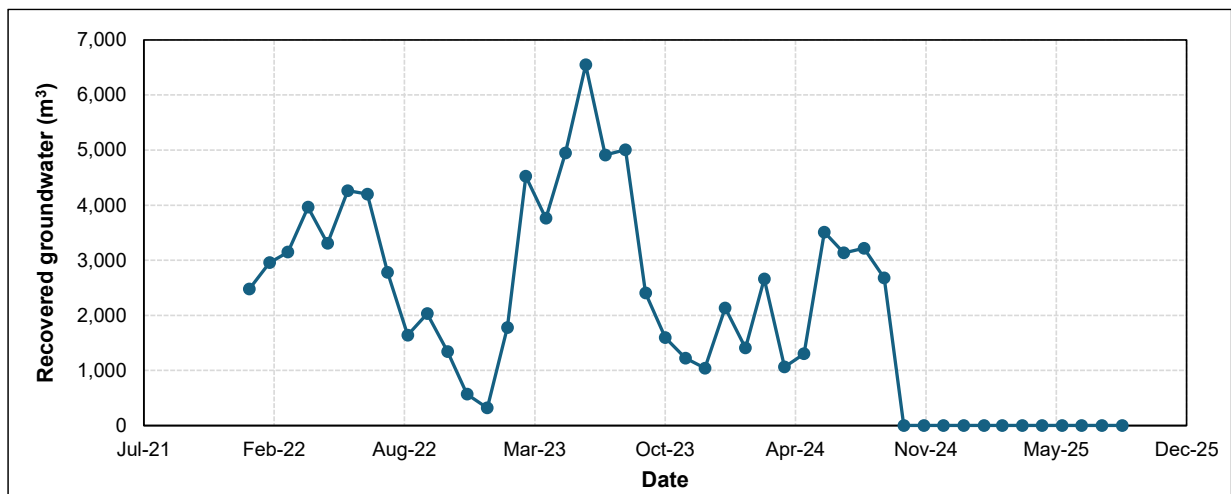


Figure 4: Annual groundwater recovery from 2022 to 2025

2.4.3 Groundwater management

Key groundwater management infrastructure for the Gidji II TSF are summarised below:

- HDPE liner installed across the basin as well as the upstream embankment of the facility. The HDPE liner will be extended to line the constructed embankment raise.
- The underdrainage system has been installed at the base of the facility. The underdrainage system will continue to be operated, when there is a water deficit at the processing facility or excess water within the TSF.
- Perimeter drain has been constructed along the western, northern, and eastern flanks of the facility, between the downstream toe of the facility and the roadway to capture any surface expression. The perimeter toe drain will continue to be operated.

- A seepage interception trench exists along the north-eastern toe of Gidji I TSF East Cell. While not directly adjacent to the Gidji II TSF (Figure 1), the trench will continue to be monitored.
- Up to 16 groundwater recovery bores clustered along the south-western perimeter of Gidji I TSF West Cell (Figure 1).

2.4.4 Hydrogeology

Regional hydrogeology

Geology underlying the premises is mapped as sedimentary, felsic volcanoclastic rocks, with Cainozoic sedimentary deposits overlying the bedrock, widespread across the Eastern Goldfields region. Major groundwater transmitting systems at the premises includes (Figure 5):

- **Ferricrete and alluvial groundwater system** – A unit comprising sand, gravel, and fractured ferricrete within clay deposits, typically occurring between five metres below ground level (mbgl) and 40 mbgl in well-developed surface drainages in the Eastern Goldfields. A thin layer of this unit is present below the Gidji TSFs and was the targeted unit for groundwater recovery bores. Permeability is relatively low in most of this unit but can be higher in gravel and ferricrete layers, sufficient to allow for transmission of seepage and groundwater at low rates.
- **Paleochannel system** – A localised but extensive network of alluvial sands (Wollubar Sandstone) is known to occur from 35 mbgl up to 60 mbgl. The Kunanalling tributary of the Yindarlgooda North paleochannel is approximately 500 m west of the premises (Figure 1). The sand unit is recharged by formations underlying and overlying it, as well as water storage within the sands. The paleochannel is overlain by stiff, plastic clay with low hydraulic conductivity (Perkolilli Shale), resulting in the paleochannel being confined and isolated from the overlying ferricrete and alluvial groundwater system. Groundwater flow within the unit is largely independent of the shallow groundwater regime in the overlying unit.
- **Bedrock groundwater system** – Groundwater flows through fractured and weathered zones within the basement rocks at depths. The system occurs in discrete locations in the Eastern Goldfields, usually associated with structural dislocation within orebodies.

As there were no groundwater monitoring bores present prior to the operation of the Gidji TSFs at the premises, it is unclear whether groundwater around the premises was naturally shallow or whether the current saturation of the ferricrete and alluvial unit has been driven primarily by seepage from the TSFs.

Groundwater levels

Historically, groundwater levels were relatively shallow from the time groundwater monitoring commenced in 1999. Increase in pumping capacity in the early 2000s resulted in deepening of water table. Groundwater level fluctuations were driven by deposition cycles at Gidji I TSF and operation of the groundwater recovery bores, with more changes observed in the eastern monitoring bores compared to the western monitoring bores. A significant reduction in groundwater recovery capacity was observed between 2013 to 2015 in response to cessation of tailings deposition at Gidji I TSF.

The operation of the Gidji II TSF since 2016 has seen groundwater recovery occurring at an average rate of 0.9 L/s, in response to deepening groundwater levels around the premises. During this period, rapid deepening trends observed at several monitoring bores throughout the premises suggested that groundwater levels were approaching the base of the ferricrete and alluvial sediment unit. Furthermore, groundwater level changes were also found to respond to significant precipitation events, with the response being greater at monitoring bores that were further away from the premises.

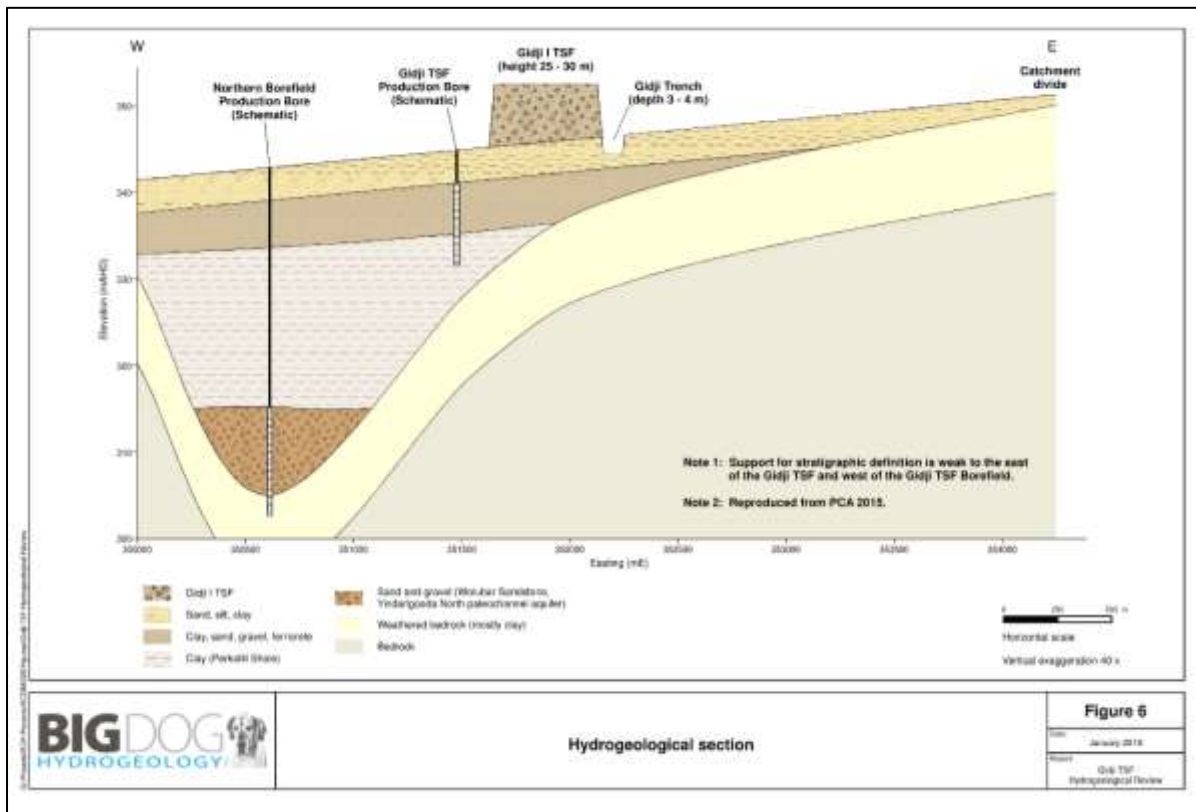


Figure 5: Conceptual hydrogeological model at the premises

In recent years, with continued tailings deposition into Gidji II TSF, groundwater levels remained relatively stable beyond exhibiting seasonal fluctuations (Figure 6). Overall, groundwater levels were relatively deep around the premises, except near the TSF perimeters and to the west and south-west (Figure 7). Fittingly, historical groundwater recovery efforts have focused in this area, especially around the Gidji I TSF toe. Nevertheless, a noticeable declining trend in groundwater level was observed at some monitoring bores (e.g., MB R12, MB R13, MB R24).

Existing licence L5946/1988/13 currently specifies a limit of 4 meters below ground level (mbgl) on groundwater levels at compliance monitoring bores. These monitoring bores are typically sited further away from the TSF area, typically outside the premises boundary where sensitive receptors are located. Overall, the limit has not been exceeded at any of the monitoring bores during the 2022 to 2025 annual periods.

Conversely, operational areas monitoring bores are located near the perimeter of the TSF area for the purpose of early detection of groundwater impacts, and thus do not currently have a limit on groundwater level applied. However, similar to the compliance monitoring bores, groundwater levels at these monitoring bores have remained below 4 mbgl, despite being located closer to the TSFs.

Groundwater contouring based on monitoring data in November 2018 indicated that local groundwater is flowing somewhat radially from the premises as a result of existing groundwater mounding associated with the TSFs (BDH 2019). Relatively steep hydraulic gradients were present to the north, east, and south of the TSF areas, while lower hydraulic gradients were observed to the west.

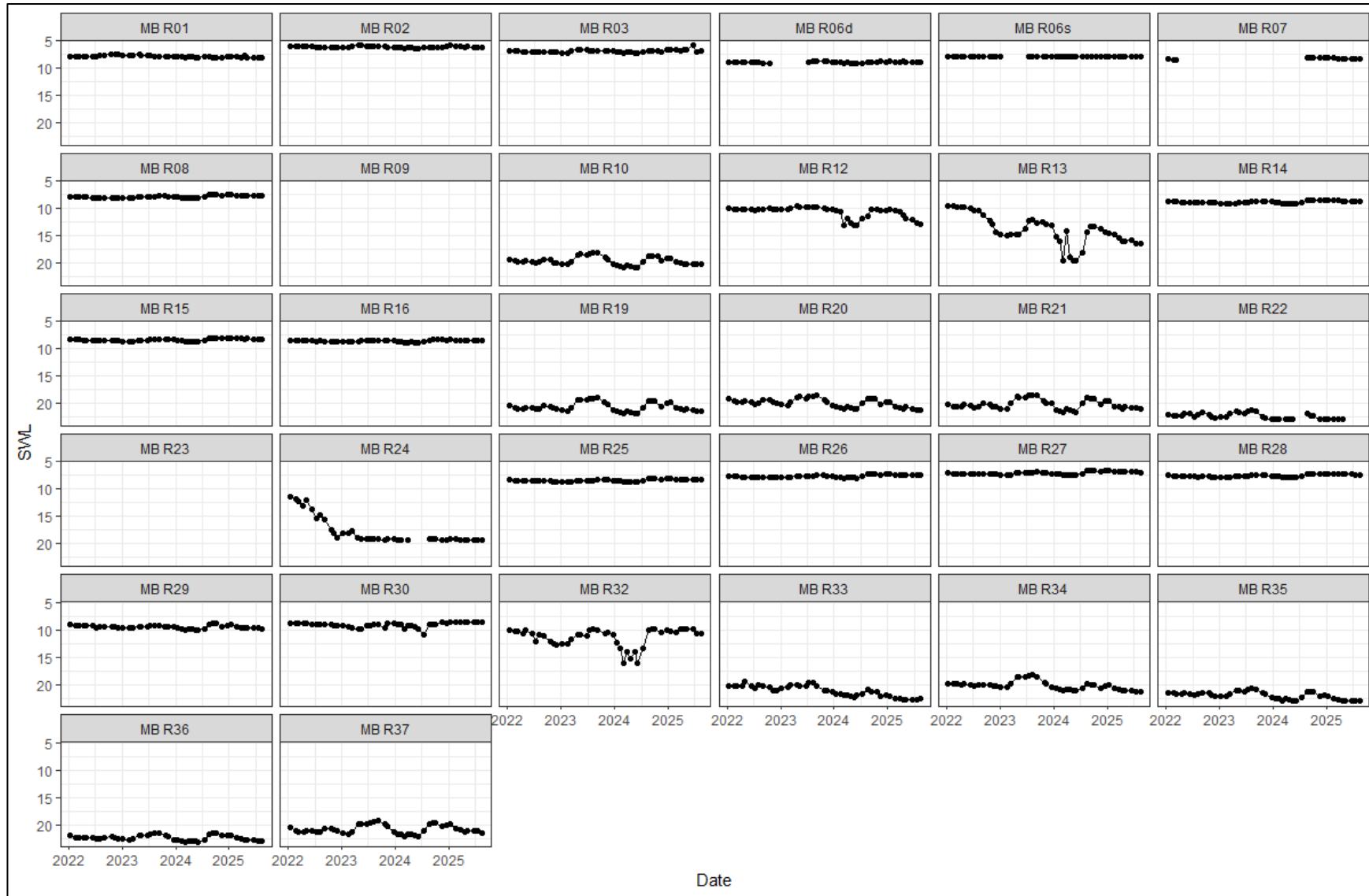


Figure 6: Groundwater level at monitoring bores between 2022 and 2025



Figure 7: Groundwater level at the premises, represented by blue boxes (approx. 20 mbgl or deeper), green boxes (between 10 to 20 mbgl), yellow boxes (10 mbgl or shallower), and orange boxes (10 mbgl or shallower, with at least one exceedance of 6 mbgl between 2022 and 2025)

Groundwater quality

Total dissolved solids (TDS) have been considered the most diagnostic parameter for seepage influence in groundwater, as it is not expected to be influenced by attenuative processes when flowing through the groundwater system (BDH 2019). Other indicators of seepage may also include pH, EC, cyanide, as well as dissolved copper and cobalt (BDH 2019).

Historically, copper and cobalt concentrations in groundwater have reflected cyanide distribution, due to the complexing of these metals with cyanide. Therefore, the distribution of copper and cobalt was likely to be linked to seepage from the TSFs. A recent review (BDH 2019) found that copper concentrations were significantly lower in groundwater compared to decant water², suggesting significant attenuation occurring through the groundwater system. Similar

² Between the 2022 and 2025 annual periods, the Gidji Trench, present along the north-eastern perimeter of the Gidji I TSF East Cell was dry, except during March 2023. Water quality at the Gidji Return Water Dam, which stores return

trends were observed between cobalt and cyanide, albeit weaker.

Based on recent monitoring data between 2022 and 2025, groundwater TDS has been consistently high, ranging between 44,400 mg/L and 112,000 mg/L, which is typical of the hypersaline groundwater in the Goldfields region. Monitoring bores with higher TDS are generally associated with shallower groundwater levels (Figure 8a).

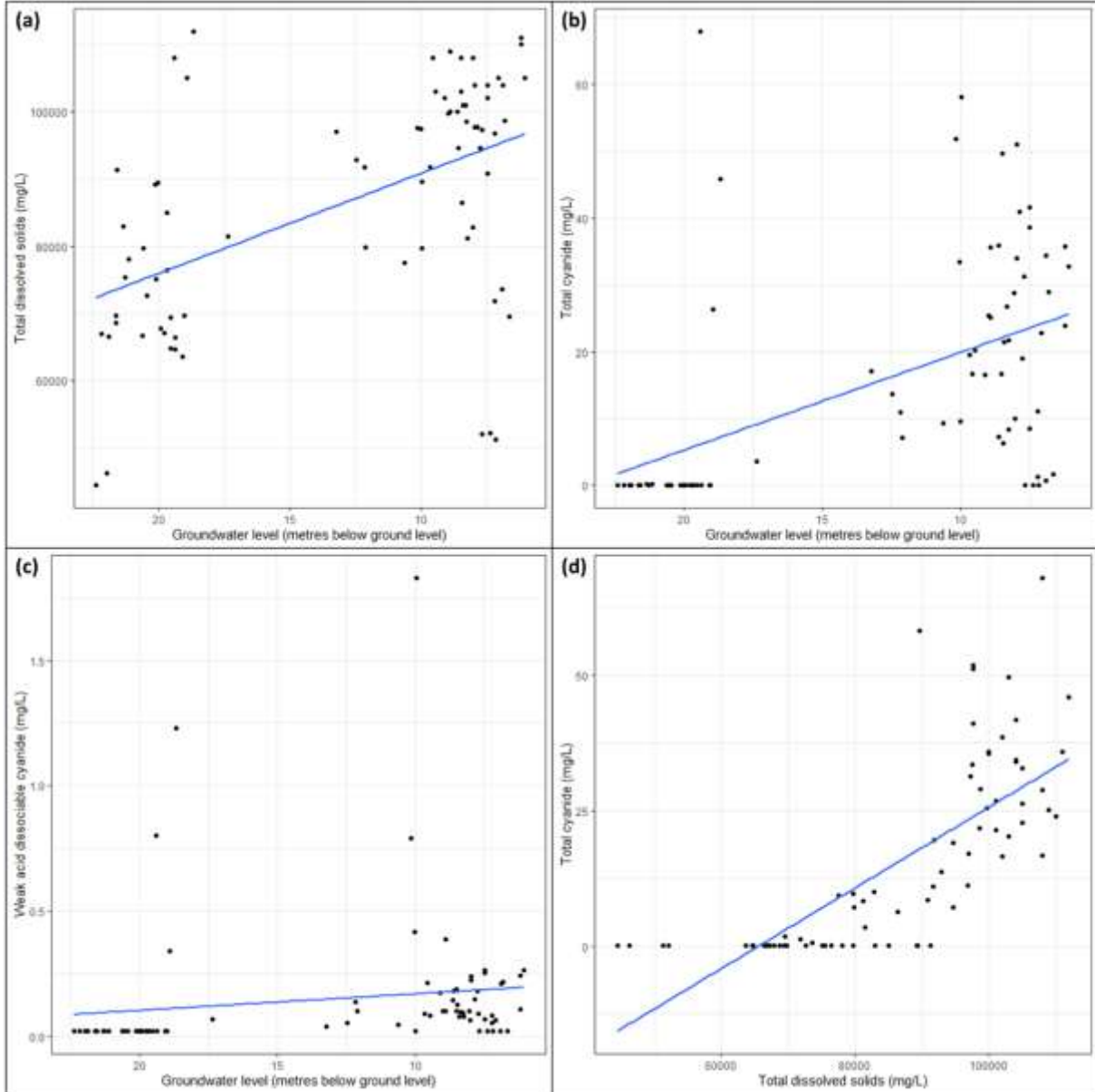


Figure 8: Relationships between groundwater level, total dissolved solids, total cyanide and weak dissociable cyanide in groundwater between 2022 and 2025

During the same period, cyanide has been detected at multiple operational areas and compliance monitoring bores, generally associated with the TSF perimeters, as well as to the west and south-west. Total cyanide concentration was highest at monitoring bore MB R10 in October 2022 (68 mg/L). In addition, weak acid dissociable (WAD) cyanide was also detected at these monitoring bores, with the highest concentration detected at monitoring bore MB R12

water from Gidji II TSF was typically hypersaline (i.e., TDS from 67,200 mg/L to 78,500 mg/L), but significantly higher concentrations of total cyanide (i.e., from 298 mg/L to 7,260 mg/L) and WAD cyanide (i.e., from 138 mg/L to 5,160 mg/L), compared to groundwater.

in October 2023 (1.83 mg/L). Detection of total and WAD cyanide were typically associated with monitoring bores with relatively shallow groundwater (Figure 8b; Figure 8c) and higher TDS (Figure 8d).

In summary, it is evident that monitoring bores located around the TSF perimeters and to the west and south-west of the premises are exhibiting evidence of impacts from tailings seepage, due to elevated groundwater levels, TDS, total and WAD cyanides (Figure 8).

2.4.5 Environmental incidents

A review of the department's records and the Licence Holder's Annual Environmental Reports for the 2022 to 2024 annual periods found no environmental incidents associated with construction and/or operation of TSFs at the premises, except the following:

- **Incident #89823** – Condition 1.2.2 of existing licence L5946/1988/13 was breached, as the minimum freeboard of 300 mm was not maintained at the north-west corner of Gidji II TSF West Cell on 25 December 2024. The non-compliance was detected during daily inspection of the TSF. There were negligible emissions and impact to the surrounding environment, beyond the facility itself.

2.5 Part IV of the EP Act

The premises was assessed and approved by the Environmental Protection Authority (EPA) in 1988 and 1989, under Ministerial Statements 28 and 77, respectively. At the time, key environmental factors assessed included sulfur dioxide levels, flora and fauna. In applying the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2023), the key environmental factors were contemporised as Air Quality and Atmospheric Gases, Flora and Vegetation, Terrestrial Fauna, and Human Health.

In 2015, the Licence Holder requested an amendment to the proposal under section 45C of the EP Act, to increase production throughput in the ultrafine grinding mills from 351,000 tonnes per annum to 438,000 tonnes per annum (i.e., 25% increase). In considering the present facility and activities at the premises, the EPA no longer considered Air Quality and Atmospheric Gases to be a key environmental factor.

In June 2016, Ministerial Statements 28 and 77 were superseded by Ministerial Statement 1032, with revised conditions. Conditions in the current Ministerial Statement pertains primarily to closure and rehabilitation.

2.6 Update to licence format

As part of this application, the CEO has initiated an amendment to:

- update the format and appearance of the licence, as well as standard conditions to align with current licensing format;
- revise licence condition numbers, remove redundant conditions, and realigned condition numbers for numerical consistency;
- corrected any clerical mistakes and unintentional errors; and
- adjusted licence expiry date to align with the licence anniversary and streamline annual fee payments.

The full list of changes made to licence conditions as they relate to this Revised Licence are detailed in Section 5.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

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 2020b).

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 3 below. Table 3 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 3: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction of Gidji II TSF East and West Cell to 368 mRL.	Air / windborne pathway	Based on the <i>Gidji: Dust Management Plan</i> : <ul style="list-style-type: none"> Dedicated water cart will be utilised for dust suppression during construction of TSF embankment.
Operation			
Dust	Tailings deposition to Gidji II TSF East and West Cell to 368 mRL	Air / windborne pathway	Based on the <i>Gidji: Dust Management Plan</i> : <ul style="list-style-type: none"> Water cart will be utilised to undertake dust suppression during dry and windy conditions. Daily visual inspection of key operational areas, including Gidji II TSF and high traffic areas, will be undertaken to identify any potential dust generation. Corrective actions may include use of additional water carts, suspension of work, or equipment maintenance, etc. Access roads and ramps will be sheeted with gravel road base to minimise dust lift-off. Tailings spigot around Gidji II TSF will be rotated to maintain wetted surface on tailings beach.
Contaminated stormwater		Overland runoff during rainfall event	<ul style="list-style-type: none"> Access roads and ramps will be sheeted with gravel road base to minimise erosion. Embankment crest will grade towards

Emission	Sources	Potential pathways	Proposed controls
			<p>the upstream embankment to capture runoff within the tailings beach.</p> <ul style="list-style-type: none"> • Safety bunds will be constructed on the downstream edge of the embankment crest to minimise runoff along the downstream embankment. • Runoff along the downstream embankment will be captured in graded toe drain surrounding the outer western, northern and eastern toe of the TSF and be directed towards stormwater containment ponds.
Tailings supernatant		Vertical infiltration and lateral migration of seepage through base and wall of Gidji II TSF	<ul style="list-style-type: none"> • Gidji II TSF is a lined facility¹, where the HDPE liner extent will also be extended to include the proposed embankment raise. • Underdrainage system will continue to be operated. • Decant system will remove excess water from the decant pond via pump and stored at lined return water ponds. • Decant pond area and size will be monitored daily¹ and maintained as small as practicable, where decant pond area will not be greater than 20% of tailings beach area • Decant pond location will be no closer than 75 m from a perimeter embankment. • Existing groundwater recovery bores (historically associated with Gidji I TSF) will continue to operate to capture seepage-impacted groundwater.¹ • Existing groundwater monitoring bores will continue to be monitored quarterly.¹
Tailings slurry		Ingestion of tailings supernatant at decant ponds	<ul style="list-style-type: none"> • Bird netting installed over the Gidji II TSF decant pond will be maintained to prevent bird access and ingestion of decant water.¹
		Pipeline leaks or failures	<p>Existing pipelines at the Gidji II TSF will continue to be utilised for tailings deposition to the proposed embankment raise. The pipelines are:</p> <ul style="list-style-type: none"> • Designed in accordance with the International Cyanide Management Code. • Double-skinned.

Emission	Sources	Potential pathways	Proposed controls
			<ul style="list-style-type: none"> Operated and monitored through a telemetry system for leak detection. Equipped to automatically shut down pumping in the event of pipeline failure.¹ Contained within secondary containment corridors¹, with windrows and appropriately sized scour pits at topographical low points to contain any pipeline leaks or spills. Inspected daily, with any damages reported and repaired.¹
		Overtopping of Gidji II TSF	<ul style="list-style-type: none"> Minimum operational freeboard of 500 mm will be maintained, as well as sufficient capacity to contain runoff and precipitation from a 1-in-100 year storm event for up to 72 hours. Daily visual inspections will be undertaken to confirm that minimum freeboard is available.¹

Note 1: These controls are already required under existing licence L5946/1988/13.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020b), 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 4 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 2020a)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
None	N/A
Environmental receptors	Distance from prescribed activity
Native vegetation	<p>The premises is surrounded by native vegetation, with vegetation community predominantly characterised as <i>Eucalyptus lesouefii</i> woodland, with occasional <i>E. longicornis</i> over mid sparse to open shrubland of <i>Eremophila scoparia</i>, <i>Maireana sedifolia</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i>, with isolated low shrubs of <i>Atriplex vesicaria</i>, <i>Olearia muelleri</i> and <i>Scaevola spinescens</i> (Figure 9).</p> <p>A narrow band banded region exists to the west of the Gidji II TSF, where vegetation community is characterised by low <i>Casuarina pauper</i> woodland over mid-open shrubland of <i>Acacia coolgardiensis</i>, <i>Cratystylis microphylla</i> and <i>Eremophila oppositifolia</i> over low sparse <i>O. muelleri</i> and <i>Rhagodia eremaeae</i> shrubland.</p>

<p>Conservation significant flora</p>	<p>Several sightings of conservation significant flora have been made surrounding the premises (Figure 9), including:</p> <ul style="list-style-type: none"> • <i>Eremophila praecox</i> (Priority 2) – Located in populations ranging between 700 m to 1,000 km to the south-west, south, and south-east of Gidji II TSF. The nearest population is located approximately 300 m west of Gidji II TSF, within the narrow band of <i>C. pauper</i> woodland.
<p>Conservation significant fauna</p>	<p>Historically, specially protected migratory birds (species not recorded) have been sighted within 3 km of the premises boundary. Additionally, arid bronze azure butterfly (<i>Ogyris subterrestris petrina</i> – Critically Endangered) have been sighted near the premises boundary.</p> <p>Common avifauna are also likely to be sighted around the premises due to presence of native vegetation.</p>
<p>Surface water bodies</p>	<p>There are no defined drainage channels near the premises, with runoff occurring as overland sheet flow following rainfall events. Local topography around the premises gently grades to the west and south, towards a series of salt lakes, including Gidji Lake, which is approximately 2.5 km west of the premises.</p> <p>An eastern drainage line is located approximately 3 km east of the premises, though the drainage divide for Gidji Lake was thought to be approximately 2 km east.</p>
<p>Groundwater aquifer</p>	<p>Local hydrogeological comprises a shallow alluvial and ferricrete groundwater system, a nearby paleochannel system, and the underlying fractured bedrock system (Figure 5). Refer to Section 2.4.4 for further information.</p> <p>Regional groundwater flow direction typically flows surface topography and surface water flow direction. At the premises, site topography grades to the southwest, from the catchment divide north-east of the premises towards Gidji Lake. The paleochannel flow regime is largely independent of the shallow groundwater regime, which may be influenced by seepage flowing radially out of the Gidji TSFs.</p> <p>The premises is located within the Goldfields Groundwater Area, proclaimed under the <i>Rights in Water and Irrigation Act 1914</i>.</p> <p>The Licence Holder holds groundwater licence GWL 68592 under the <i>Rights in Water and Irrigation Act 1914</i> to abstract groundwater from the Yindarlgooda North Tributary as part of their Northern Borefield operations, which is used to support their wider mining operations (Figure 1). Groundwater licences are also held by third parties for similar purposes, though none are present within 5 km of the premises.</p>

3.2 Risk ratings

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

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

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

The revised Licence L5946/1988/13 that accompanies this Amendment Report authorises emissions associated with the operation of the premises, i.e, tailings deposition into Gidji II TSF.

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

Table 5. 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								
Construction of Gidji II TSF East and West Cell to 368 mRL	Dust	Pathway: Air / windborne pathway Impact: Impact to ecological health	Native vegetation, including conservation significant flora	Refer to Section 3.1.1.	C = Slight L = Unlikely Low risk	Y	Condition 21 – Infrastructure construction requirements	N/A
Operation								
Tailings deposition to Gidji II TSF East and West Cell to 368 mRL	Dust	Pathway: Air / windborne pathway Impact: Impact to ecological health	Native vegetation, including conservation significant flora	Refer to Section 3.1.1.	C = Minor L = Rare Low risk	Y	None.	N/A
	Contaminated stormwater	Pathway: Overland runoff during rainfall event Impact: Impact to ecological health	Native vegetation, including conservation significant flora	Refer to Section 3.1.1.	C = Slight L = Unlikely Low risk	Y	Condition 1 – Operational requirements Condition 21 – Infrastructure construction requirements	N/A
	Tailings supernatant	Pathway: Vertical infiltration and lateral migration of seepage through base and wall of Gidji II TSF Impact: Groundwater mounding and deterioration of groundwater quality, potentially resulting in impact to ecological health	Native vegetation, including conservation significant flora Surface waterbodies Groundwater aquifer	Refer to Section 3.1.1.	C = Moderate L = Possible Medium risk Refer to Section 3.3.	Y	Condition 1 – Operational requirements (<u>including requirement to manage decant pond size and location, as well as operation of groundwater recovery bores</u>) Condition 3 – Inspection requirements Condition 4 – Groundwater recovery bore requirements <u>Condition 10 – Process monitoring requirements</u> <u>Condition 11 – Water balance</u>	Refer to Section 3.3.

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				
							<u>monitoring requirements</u> Condition 12 – Emission and discharge monitoring requirements Condition 13 – Ambient groundwater monitoring requirements (<u>including target for WAD cyanide at compliance monitoring bores</u>)	
		Pathway: Ingestion of tailings supernatant at decant ponds Impact: Impact to ecological health, including potential wildlife death	Fauna, including conservation significant fauna	Refer to Section 3.1.1.	C = Moderate L = Unlikely Medium risk	Y	Condition 1 – Operational requirements Condition 21 – Construction requirements	N/A
	Tailings slurry	Pathway: Pipeline leaks or failures, resulting in direct discharge to environment Impact: Impact to ecological health	Native vegetation, including conservation significant flora	Refer to Section 3.1.1.	C = Moderate L = Unlikely Medium risk	Y	Condition 2 – Pipeline requirements Condition 3 – Inspection requirements	N/A
		Pathway: Overtopping of Gidji II TSF, resulting in direct discharge to environment Impact: Impact to ecological health	Native vegetation, including conservation significant flora	Refer to Section 3.1.1.	C = Moderate L = Unlikely Medium risk	Y	Condition 1 – Operational requirements Condition 3 – Inspection requirements	N/A

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020b).

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 Additional regulatory requirements

3.3.1 Management of tailings seepage from operation of Gidji II TSF

In reviewing historical monitoring information to date, as well as the proposed controls, the department considers additional regulatory requirements to be necessary to manage potential impacts associated with the migration of tailings seepage from continued tailings deposition to Gidji II TSF to the environment.

While groundwater levels appear to be managed to a sufficient extent (i.e., no exceedance of the relevant limit specified in the existing licence), groundwater levels remain relatively shallow to the west and south-west of the premises. Furthermore, groundwater levels have been observed to rise relatively quickly from mid-2024 at a number of monitoring bores in this area, including MB R08, MB R 14, MB R15, MB R16, MB R25, MB R26, MB R27, MB R28, MB R 29 (Figure 6). This roughly coincides with the reduction of groundwater recovery yield to zero in October 2024 (Figure 4). No explanation was provided for the sudden cessation of groundwater yield. Lack of groundwater recovery since this period may be a potential cause of the sudden shallowing of groundwater in this area.

Furthermore, while groundwater levels appear to be managed, the geochemical influence of tailings seepage on groundwater chemistry appears to be lingering. Cyanide is not typically found in groundwater under natural conditions. Therefore, the presence of cyanide may be an indication of anthropogenic influence. Both total and WAD cyanide have been found at varying concentrations across the premises (Figure 8), though significantly higher concentrations have been detected at the operational areas monitoring bores along the TSF perimeters and to the west and south-west of the premises. It is noted that cyanide destruction is only undertaken for return water prior to reuse in the processing circuit, rather than for tailings slurry prior to deposition to the TSF.

Compliance monitoring bores to the west and south-west have reported total cyanide and WAD cyanide concentrations up to 41.7 mg/L and 0.254 mg/L, respectively (i.e., MB R08 in October 2024). While the highest concentrations of cyanide have been detected at operational monitoring bores, it is evident that the migration of seepage-impacted groundwater is occurring to the west and south-west of the premises. At the furthest monitoring bore MB R26, total cyanide was detected from 8.4 mg/L to 19.0 mg/L between the 2022 and 2025 annual periods. Groundwater recovery efforts must be increased to continue capturing seepage-impacted groundwater and inhibit its migration offsite.

It is not well understood whether seepage impacts observed currently are derived from historical seepage from the unlined Gidji I TSF or current tailings deposition into Gidji II TSF. While it is understood that the Gidji II TSF was constructed with a geomembrane liner and underdrainage system to prevent tailings seepage, it is important to acknowledge that these controls cannot eliminate the potential for seepage to occur, though it may lower it (Tuomela *et al.* 2021). It has been reported that liner failure may occur through puncture, tears, cracks, and other defects (Giroud 2016), caused by manufacturing defects, handling of liner material, installation and seaming, ageing, etc. (Rowe 2012). Further, the performance of HDPE as a liner can be highly dependent on defect occurrence rates (Garrick *et al.* 2012). Accordingly, the design engineers for the proposed embankment raise have estimated indicative seepage rates through the base and walls of the facility (Figure 3; Table 1). Therefore, water balance monitoring undertaken by the licence holder should consider the potential for tailings seepage being lost to the environment, even where the facility is lined.

As a result of the risk assessment, the department has specified additional regulatory requirements for the following:

- **Condition 1:** As proposed by the Licence Holder, the decant pond area will be maintained at the minimum practical amounts in order to maximise water recovery and minimise potential seepage generated. To manage the level of seepage influence on the surrounding groundwater environment, the department has specified requirements to maintain the decant pond area to no more than 20% of the tailings beach area and to maintain a separation distance of at least 75 m from the perimeter embankments. These specifications were adopted from the relevant Design Report for the safe operation of the facility (WSP 2025), which can also achieve beneficial environmental outcomes. Furthermore, the toe drain must be maintained to intercept any potential runoff or seepage that expresses near the toe of the embankment.
- **Condition 1:** The existing groundwater recovery bores must be operated in the event where groundwater levels and/or WAD cyanide concentrations exceed their relevant limit/target. Cessation of groundwater recovery may allow seepage and groundwater mounding to migrate further away from the premises, particularly to the west and south-west, where historical impacts have been observed and groundwater is relatively shallower. The siting of the existing groundwater recovery bores, while initially intended to manage seepage from the unlined Gidji I TSF, is appropriate to assist in managing groundwater throughout the operational life of the Gidji II TSF.
- **Condition 13:** While groundwater levels around the premises appears to be manageable, even in the absence of groundwater recovery, the department notes the continued detection of cyanide in the surrounding groundwater presents a lingering concern. Total cyanide and WAD cyanide concentrations near the TSF perimeter is notably high. Consequently, the department has specified a target of 0.5 mg/L on WAD cyanide at the compliance monitoring bores (i.e., where an exceedance of the target will require groundwater recovery via groundwater recovery bores), where WAD cyanide is currently at detectable levels. Groundwater recovery and cyanide management efforts must be undertaken to prevent unacceptable contamination of the groundwater resource.
- **Condition 10 and 11:** The department has required the licence holder to undertake process and water balance monitoring. While the licence holder already undertakes water balance monitoring in accordance with their TSF Operating Manual, the department noted that seepage was not considered and estimated in their water balance, resulting in varying volumes of water entrained within the tailings mass. Consequently, condition 12 specifies the purpose of the water balance is to estimate potential seepage lost to the environment through the facility.

Furthermore, the department has amended conditions 18 and 19, such that ambient groundwater monitoring results are no longer reported to the department on a quarterly basis. Reporting of ambient groundwater monitoring information will be undertaken on an annual basis as part of the licence holder's annual environmental reporting requirements.

The department considers the additional regulatory requirements to be adequate in managing emissions and achieving environmental outcomes, such that quarterly reporting is no longer necessary. This amendment will likely reduce burden for both the licence holder and department. Nevertheless, the department may request monitoring information from the licence holder at any time, in accordance with condition 19.

4. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
City of Kalgoorlie-Boulder (CoKB) advised of proposal on 6 November 2025.	CoKB responded on 17 November 2025. Refer to Appendix 1.	Refer to Appendix 1.
Department of Mines, Petroleum and Exploration (DMPE) advised of proposal on 6 November 2025.	DMPE responded on 17 November 2025. Refer to Appendix 1.	Refer to Appendix 1.
Licence Holder was provided with draft amendment on 3 March 2026.	Refer to Appendix 2.	Refer to Appendix 2.

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 7 and Table 8 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 7: Consolidation of licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.1.1	Interpretation	N/A (Interpretation section)	Redundant condition. Revised to current licensing format.
1.1.2	Definitions	N/A (Table 11)	Redundant condition. Revised to current licensing format.
1.1.3	Australian and other standards	N/A (Interpretation section)	Redundant condition. Revised to current licensing format.
1.1.4	Reference to code of practice	N/A (Interpretation section)	Redundant condition. Revised to current licensing format.
1.2.1	Pipeline management	Condition 2	No change.
1.2.2	Containment infrastructure	Condition 1 Condition 5	Revised to current licensing format.
1.2.3	Inspection	Condition 3	No change.

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.2.3	Groundwater production bores	Condition 4	No change.
1.2.4	Infrastructure construction	Condition 21	Revised to current licensing format.
1.2.5	Environmental compliance reporting	Condition 22	Revised to current licensing format.
1.2.6	Environmental compliance reporting	Condition 23	Revised to current licensing format.
2.1.1	Monitoring standards	Condition 6	No change.
2.1.2	Monitoring frequency	Condition 7	No change.
2.1.3	Calibration requirements	Condition 8	No change.
2.1.4	Calibration requirements	Condition 9	No change.
2.2.1	Ambient environmental quality monitoring	Condition 12 Condition 13	Revised to current licensing format.
3.1.1	Recordkeeping	Condition 15 Condition 16	Revised to current licensing format.
3.1.2	Annual Audit Compliance Report	Condition 17	Revised to current licensing format.
3.1.3	Complaints	Condition 14	Revised to current licensing format.
3.2.1	Annual Environmental Report	Condition 18	Revised to current licensing format.
3.2.2	Annual Environmental Report	Condition 18	Amalgamated with condition 3.2.1. Revised to current licensing format.
3.2.3	Non-annual reporting	Condition 19	No change.
3.3.1	Notification	Condition 20	No change.

Table 8: Summary of licence amendments

Condition no.	Proposed amendments
Condition 1	Updated Table 1 to: <ul style="list-style-type: none"> specify operational requirements for Gidji II TSF (East and West Cell), including decant pond management (<u>additional regulatory requirement</u>); and specify operational requirements for existing groundwater recovery bores (<u>additional regulatory requirement</u>).
Condition 2	Updated condition 2 to refer to pipeline route in Figure 3.
Condition 3	Updated Table 2 to:

Condition no.	Proposed amendments
	<ul style="list-style-type: none"> • refer to infrastructure location in Figure 2 and Figure 3; • clarify inspection requirements for Gidji II TSF (east and West Cell); and • include inspection requirements for return water dam and production water dam for the purpose of confirming available freeboard.
Condition 4	Updated condition wording to refer to groundwater recovery bores, rather than production bores.
Condition 5	New condition to specify authorised discharge locations for tailings slurry.
Condition 10	New condition to undertake process monitoring <u>(additional regulatory requirement)</u> .
Condition 11	New condition to undertake water balance monitoring for Gidji II TSF (East and West Cell) <u>(additional regulatory requirement)</u> .
Condition 12	Updated Table 5 to: <ul style="list-style-type: none"> • specify location of emission monitoring points.
Condition 13	Updated Table 6 to: <ul style="list-style-type: none"> • specify location of ambient groundwater monitoring points; and • specify target for weak acid dissociable cyanide for compliance monitoring bores <u>(additional regulatory requirement)</u>.
Condition 18	Updated Table 7 to: <ul style="list-style-type: none"> • Remove references to conditions 19 and 20, as these requirements have been duplicated under other requirements within the same condition and in condition 20 (i.e., notification requirements); and • Include references to conditions 10, 11, 12, and 13, for the reporting of monitoring results, including specification of the reporting format.
Condition 19	Updated Table 8 to: <ul style="list-style-type: none"> • Remove reference to conditions 12 and 13, as reporting of groundwater monitoring results will be included as part of the environmental report under condition 18.
Condition 21	Updated Table 10 to: <ul style="list-style-type: none"> • Remove constructed infrastructure (e.g., upstream embankment raise to the Gidji II TSF West Cell; upstream embankment raise to the Gidji II TSF East Cell); and • Include additional infrastructure authorised for construction under this amendment (i.e., Gidji II TSF East Cell embankment raise to 366 mRL; Gidji II TSF West Cell embankment raise to 366 mRL; Gidji II TSF East Cell embankment raise to 368 mRL; Gidji II TSF West Cell embankment raise to 368 mRL).
----	Updated Table 11 to: <ul style="list-style-type: none"> • Remove definition for averaging period; and • Include definition for: HDPE, mbgl, and suitably qualified engineer.
----	Updated Schedule 1: Maps by: <ul style="list-style-type: none"> • Removing existing figures associated with construction of Gidji II TSF East and West Cell to 364 mRL. • Updating Figure 1 (premises boundary); no changes made to the premises boundary; • Updated Figure 2 (site layout) to indicate the Gidji I Trench; • Including new Figure 3 to show pipeline route for tailings delivery and return water

Condition no.	Proposed amendments
	<p>pipelines;</p> <ul style="list-style-type: none"> • Updating Figure 4 (groundwater monitoring bore locations) and Figure 5 (groundwater recovery bore locations) to improve clarity; • Including new Figure 6, Figure 7, and Figure 8 to specify construction design for the additional infrastructure authorised for construction under this amendment (refer to condition 21).

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Appendix 1: Summary of comments from direct interest stakeholders on the application and proposed activities

Stakeholder	Summary of stakeholder comment	Department's response
City of Kalgoorlie-Boulder (CoKB)	<p>CoKB commented on the following:</p> <ul style="list-style-type: none"> The licence should impose strict conditions on independent inspections on tailings facility and ensuring that air quality meets relevant standards, ensuring no adverse impact on community health, noting historical sulfur dioxide emissions. Air quality concerns are not limited to particulate matter (PM) emissions, but also the release of chemicals associated with the sulfidic minerals processed at the premises, including arsenic, lead, cyanide, etc. Groundwater monitoring must continue with clear trigger levels of contaminants, given the reuse of tailings from Gidji I TSF (for embankment construction), historic seepage issues, and risks associated with cyanide residue in tailings. Transparent reporting of monitoring results is essential for maintaining community confidence. 	<p>The department has considered the comments provided in the risk assessment.</p> <p><u>Dust emissions</u></p> <p>Potential risks associated with dust emissions have been considered in the department's risk assessment. The controls and procedures outlined within the <i>Gidji: Dust Management Plan</i> were considered. However, given the siting of the premises as well as potential dust-generating activities associated with the prescribed premises, the department considers dust emissions to be adequately managed under the existing licence and has not specified additional conditions. General provisions of the EP Act still apply to the premises in relation to pollution and environmental harm.</p> <p><u>Seepage emissions</u></p> <p>Potential risks associated with TSF seepage emissions have been considered in the department's risk assessment. In considering the conditions in the existing licence as well as additional controls proposed, the department has specified additional regulatory requirements to better manage potential seepage emissions from the continued operation of the Gidji II TSF, including: (i) specifying a standard target on weak acid dissociable cyanide in ambient groundwater (ii) requirement to undertake groundwater recovery via existing groundwater recovery bores in the event of a limit and/or target exceedance, and (iii) requirements to undertake process and water balance monitoring to better understand any potential seepage being emitted from the facility. The licence also specifies requirements to better manage decant pond area and location within the Gidji II TSF in order to minimise the potential volume of seepage generated.</p> <p><u>Reporting</u></p> <p>Reporting of monitoring results is a requirement of the licence, where the licence holder must submit an Environmental Report and Annual Audit Compliance Report to the department on an annual basis. The Annual Audit Compliance Report is published on the department's website and details information on the premises, including the production capacity and any non-compliances reported in the relevant</p>

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Stakeholder	Summary of stakeholder comment	Department's response
		annual period.
Department of Mines, Petroleum and Exploration (DMPE)	DMPE stated that the proposed activities were consistent with Mining Proposal REG ID 501919, which was under assessment at the time of the comment.	The department has noted the comment provided by DMPE.

Appendix 2: Summary of Licence Holder’s comments on risk assessment and draft conditions

Condition	Summary of Licence Holder’s comment	Department’s response
Condition 1	<p>In Table 1, the Licence Holder requested that the minimum freeboard required for Gidji II TSF be retained as 300 mm, rather than 500 mm.</p> <p>The Amendment Report does not provide reasoning for the increase in minimum freeboard.</p> <p>Modifying the minimum freeboard requirement will limit the available storage capacity within each cell and is not consistent with the design intent and operation of the facility.</p> <p>Section 7.6 of the Design Report (WSP 2025) describes the freeboard assessment completed, where an operational freeboard limit of 300 mm would be sufficient to satisfy DMPE and ANCOLD guidelines. The facility has also been designed to contain runoff from a 1:100-year stormwater event for 72 hours as well as wave run-up allowance. Additionally, Section 7.15 of the Operating Manual describes maintaining a minimal operational freeboard of at least 300 mm.</p>	<p>The department notes that the 500 mm operational freeboard was obtained from the Licence Holder’s own supporting documentation (Section 4.2).</p> <p>In reviewing the relevant Design Report (WSP 2025; Section 7.6), the department understands that there may have been inconsistencies between the two documents provided.</p> <p>Consequently, the department has reverted the freeboard requirement to 300 mm. The definition for ‘operational freeboard’ has been updated for clarity in Table 11 of the amended licence.</p>
	<p>In Table 1, the Licence Holder requested that the following requirement be removed for the groundwater recovery bores: <i>“Groundwater recovery bores must be operational at all times to manage standing water level and cyanide in groundwater in accordance with limits specified in condition 13, except during repair and maintenance, or where the bore is dry”</i>.</p> <p>The reasoning for its removal is that the Gidji II TSF is a lined facility, with no linkage to existing groundwater bores. The current groundwater bores are associated with Gidji I TSF, which has not been operational since 2015. Groundwater mounding associated with Gidji I TSF has been reduced such that some bores have become dry, where it is no longer possible to abstract water and maintain the pumps.</p> <p>Gidji I TSF is currently considered to be in care and maintenance, with groundwater levels considered sufficiently deep to meet closure criteria and protect environmental values in a recent assessment (BDH 2022).</p>	<p>With the expansion and continued operation of the Gidji II TSF, the department considers it necessary to have existing groundwater recovery bores in readiness to manage any potential issues associated with groundwater mounding and/or seepage migration.</p> <p>While the Licence Holder considers the Gidji II TSF to be unable to produce seepage due to HDPE lining, the Design Report and annual water balance provided may suggest otherwise. WSP (2025) had modelled a slight increase in the volume of seepage expected to be generated through the base of the facility as a result of the proposed expansion (Figure 3), in contrast to minimal seepage predicted to occur through the lined embankments.</p> <p>Further, while the Licence Holder had not estimated potential seepage through their annual water balance, the department identified that the volume of interstitial water was highly variable over the past three years (Table 2). Such variation is not typically expected in a quasi-closed</p>

Condition	Summary of Licence Holder's comment	Department's response
	<p>Alternatively, the Licence Holder proposed the following requirement: <i>"Groundwater recovery bores should be made operational should the groundwater levels be shallower than 4 mbgl for a sustained period of six months (if the rise has been determined to have been caused by operational activities)"</i>.</p>	<p>system, where the volume of tailings is steadily increasing over time. As such, the varying volume of interstitial water may be seeping into the subsurface, though this may be subject to further investigation. Determining the potential for seepage to occur from Gidji II TSF is complicated by the existing seepage plume from Gidji I TSF, which has shrunk over time but persists around the premises.</p> <p>Therefore, the potential for seepage to be generated from Gidji II TSF cannot be fully discounted at this stage. However, noting that ambient standing water levels at and around the premises have remained relatively stable (or have shown a deepening trend at some locations), continuous pumping of these groundwater recovery bores may not be required at this time to manage groundwater levels.</p> <p>Consequently, the department modified the requirement, based on the suggestion provided by the Licence Holder. Groundwater recovery bores must be operated in the event a limit and/or target specified in the licence has been exceeded.</p> <p>Currently, this is applied to the limit for standing water level and target for weak acid dissociable (WAD) cyanide; refer below). While standing water level has remained relatively stable, the department notes that cyanide levels remain elevated throughout the premises, including within compliance monitoring bores. Therefore, this requirement has also been applied in the event of an exceedance of the WAD cyanide target in condition 13.</p> <p>Proposed provisions relating to the six-month sustained period and cause of a standing water level rise has not been included in the amended licence, as based on long-term groundwater monitoring, natural recharge and variation in groundwater levels is unlikely to result in an exceedance of the current limit. Furthermore, the associated management actions (i.e., operating existing recovery bores) is relatively straightforward and can be actioned promptly, without requiring further monitoring and/or investigation.</p>
Condition 13	<p>In Table 6, the Licence Holder requested that the limit of 0.5 mg/L specified for WAD cyanide to be removed for the compliance monitoring bores. A limit for WAD cyanide has never been applied to the premises, as the TSF is not a conventional facility.</p> <p>Further, there are no beneficial users other than mining and mineral processing in the area.</p>	<p>The department specifies a standard ambient groundwater limit of 0.5 mg/L for premises where cyanide contamination is possible. The inclusion of this limit in the amended licence is based on the high, detectable concentrations of total and WAD cyanide still present within groundwater, despite cessation of tailings deposition into Gidji I TSF and the lined nature of the Gidji II TSF.</p>

Condition	Summary of Licence Holder's comment	Department's response
	<p>The Gidji I TSF's cyanide plume has been considerably reduced and currently meets closure criteria. The Licence Holder has committed to closely monitoring groundwater at the premises.</p>	<p>As tailings deposition at Gidji I TSF has ceased, it is unlikely that WAD cyanide concentrations at compliance monitoring bores would exceed 0.5 mg/L, in lieu of an alternate source of cyanide-laden seepage (i.e., any potential seepage from Gidji II TSF).</p> <p>Regardless of the source of the cyanide (i.e., either Gidji I or Gidji II TSF), the lack of any beneficial users in the vicinity of the premises does not justify the pollution of a groundwater system.</p> <p>Furthermore, cessation of groundwater recovery at the premises may allow residual cyanide in groundwater to migrate further away from the premises.</p> <p>Therefore, the department has specified a target for WAD cyanide, where an exceedance of the target would require the Licence Holder to recommence groundwater recovery using existing groundwater recovery bores (condition 1).</p>
	<p>In Table 6, the Licence Holder identified a typographical error for MB R27, where it should refer to MB R28.</p>	<p>The department has corrected this error in the amended licence.</p>