Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

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

Works Approval Number	W6880/2024/1
Applicant	Big Bell Gold Operations Pty Ltd
ACN	090 642 809
File number	DER2023/000797
Premises	Cue Gold Operations – Tuckabianna Project Mining tenements M20/55, M20/108, M20/111, M20/176, M20/183, M20/195, M20/208, and M20/247 As defined by the premises maps attached to the issued works approval
Date of report	10 May 2024
Decision	Works approval granted

Jarrod Abrahams
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MANAGER, RESOURCES INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of
the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction, commissioning, and operation of the premises. As a result of this assessment, works approval W6880/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) 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 and overview of premises

On 14 December 2023, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is for the construction, commissioning, and time limited operations of the Tuckabianna West In-pit Tailings Storage Facility (TWTSF) and TSF3 at the Cue Gold Operations - Tuckabianna Project (the premises). In addition, the installation of eight new groundwater monitoring bores, namely TWMB01, TWMB02, TWMB03, and TWMB04 around TWTSF, and TBS07, TBS08, TBS09, and TBS10 around TSF3. The premises is approximately 25 kilometres (km) east of Cue.

The premises relates to Category 5 and the assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6880/2024/1. The category 5 production capacity is 1,400,000 tonnes per annual period. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020a) are outlined in works approval W6880/2024/1.

2.3 Other regulatory approvals

The applicant has provided the following information relating to other regulatory approvals required as outlined in Table 1.

Table 1: Relevant approvals

Legislation	Number	Approval
Mining Act 1978	Mining Proposal Reg ID 106123	Mining Proposal and Mine Closure Plan for the Tuckabianna Group approved on 3 November 2022. The applicant has indicated that a revised Mining Proposal (Rev 2.0) and Mine Closure Plan (Rev 5.0) will be submitted to be assessed by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) concurrently with this works approval application.
Environmental Protection Act 1986	CPS 9435/1	Clearing for the development of TSF3 and TWTSF has been approved under the Native Vegetation Clearing Permit CPS 9435/1 that permits a total clearing of 250 ha for the period of 26 February 2022 to 25 February 2027.

Legislation	Number	Approval
Rights in Water and Irrigation Act 1914	GWL 207613(1)	Approval for the combined abstraction of up to 1,700,000 kilolitres (kL) of water from pits and production bores across the Tuckabianna Project including Friars pit.

2.4 Infrastructure and operational aspects

2.4.1 Construction and operation of TSF3

There are currently three TSFs approved at the Tuckabianna Project; TSF1 (decommissioned), Julies Reward Pit TSF (currently active) and TSF2 (recently lifted). The applicant proposes to construct a new paddock style TSF3 south of the existing TSF2 and abutting the Caustons waste dump. The 46.3 ha TSF3 will provide a storage capacity of 4.9 Mm^3 with a total life of 5.3 years at a rate of 1.4 million tonnes per annum (Mtpa). The applicant has indicated that clearing will be required prior to construction of TSF3.

The TSF3 design prepared by CMW Geosciences (CMW) (2022) comprises of a cumulative 4 stage design with the initial embankment constructed to 472.5 metres reduced level (mRL) (starter/stage 1), then raised using upstream construction methods (three times 2.5 m lifts) to reach the final stage (Stage 4) at 480.0 mRL (Table 2). The decant tower and accessway will be raised along with the embankment.

Table 2: TSF3 stage sequencing

Stage	Embankment height (mRL)	Storage life (years)	Volume (Mm^3)
Starter / 1	472.5	2.0	1.9
2	475.0	1.1	1.0
3	477.5	1.1	1.0
4	480.0	1.1	1.0

TSF3 will be constructed as a paddock type storage, with new embankments on the west and south and a pipe bench on the eastern side. The starter / stage 1 embankment will comprise of an upstream zone of permeability roller compacted clayey mine waste zone or dried tailings from TSF2, then the downstream zone will contain traffic compacted mine waste. A cut-off trench of 0.5 m will be incorporated into the upstream zone on the overlying alluvium layer to reduce seepage losses. The TSF3 embankment raises will be constructed with compacted dried tailings.

The TSF3 design and construction includes a low-permeability liner at the base composed of alluvial clayey gravelly sand that will be moisture-conditioned and compacted. An underdrainage system comprising of perforated pipe underdrainage lines that grade to a sump located approximately 5 m from the upstream toe of the embankment. The sump will be constructed in the southeast corner of the TSF where the topographical lowest levels occur and will consist of a tower made of slotted concrete well liners, with a minimum depth of approximately 1.35 m below the level of the collection seepage trenches, including the slab base (CMW 2022).

Embankment stability, embankment deformation, seepage, dam break and water balance analyses have been performed to support the design for a maximum crest embankment height of 14.0 m above the natural ground levels (CMW 2022).

An operational freeboard of 300 mm will be maintained from the embankment crest and a freeboard of at least 500 mm will be maintained above the supernatant pond, to maintain

capacity following a 1 in 100-year 72-hour rainfall event.

Tailings will be pumped to TSF3 along a tailings pipeline corridor and discharged sub-aerially via multiple spigots, positioned nominally at 20 m intervals along the embankment. Water will be collected from TSF3 by the centrally located decant tower before being pumped back to a process water pond for reuse in the Tuckabianna Process Plant. The decant tower will be raised concurrently with each embankment lift.

Hydrogeology

Rockwater (2021) undertook a surface water assessment, which determined peak flood levels and the potential impact of surface water flows against TSF3. It was identified that the existing creekline bordering the western edge of TSF3 has the potential to cause flooding. Rockwater (2021) has recommended to construct a bund along the western margin to protect the walls of TSF3 against a probable maximum flood (PMF). The bund would also allow for the installation of a toe-drain if required.

Tailings characteristics

Tailings physical characterisation

The following is a summary of the geotechnical investigation the applicant commissioned CMW to undertake in 2021 on the tailings that will be deposited in TSF3:

- Tailings slurry density of 45% solids.
- Tailings density 1 t/m^3 to 1.3 t/m^3 (dry).
- Material described as Sandy SILT (CL/ML) in accordance with AS1726 (2017).
- An estimated specific gravity of approximately 2.7.
- Effective angle of internal friction, ϕ of 25º (dry), 32º (consolidated) and 35º (compacted).
- Particle size distribution (PSD) of 65% to 68% passing the 75 µm, and 98% to 99% passing the 300 µm.
- Tailings beach slope of 0.5%.
- Permeability, k of 10^{-5} m/s (dry), 10^{-6} m/s (consolidated) and 10^{-8} m/s (compacted).
- Coefficient of Consolidation, C_v of 710 m^2/year.

Tailings geochemical characterisation

MBS Environmental (MBS 2013) carried out an assessment of the geochemical characteristics on weathered tailings, Caustons Underground and Comet Underground samples. Both the weathered tailings and Caustons Underground samples were non-acid forming, whilst Comet Underground samples were potentially acid forming.

The following is a summary of the geochemical characterisation and mineralogy of the tailings that will be deposited into TSF3:

- Copper, manganese, and vanadium exceed ecological investigation level (EIL) values in the weathered tailings samples.
- Weathered tailings samples reported slight enrichment in relation to arsenic, bismuth, cadmium, copper, chromium, lead, molybdenum, selenium, zinc, silver, antimony, thallium, and uranium when compared to average crustal abundance values for basalt.
- Manganese, nickel, and vanadium exceed EIL values in the simulated tailings from both Comet and Caustons Underground.
- Chromium, copper, and molybdenum concentrations were close to or slightly above EIL

values for Comet simulated tailings samples.

- Arsenic and copper concentrations were slightly higher than EIL values for several of Caustons simulated tailings samples.
- Comet simulated tailings reported slight enrichment in relation to arsenic, bismuth, cadmium, copper, chromium, lead, molybdenum, nickel, selenium, and zinc when compared to average crustal abundance values for basalt.
- Caustons simulated tailings reported slight enrichment in relation to antimony, arsenic, bismuth, cadmium, copper, chromium, lead, molybdenum, nickel, selenium, silver, and zinc when compared to average crustal abundance values for basalt.

The following is a summary of the process liquor:

- Free cyanide of 100 parts per million (ppm) weight for weight (w/w) in tailings slurry.
- Free cyanide of 20 ppm in tailings return water.
- Salinity of process water of approximately 700 mg/L.
- Estimated pH of 9.7 for slurry ex-plant and 8.6 for return water.
- Total Dissolved Solids (TDS) of 630-700 mg/L.

MBS (2013) conducted predictive modelling that indicated there is not likely to be a significant adverse effect on local groundwater due to potential inputs of salinity, acidity, metals, or metalloids from TSF seepage. The above tailings geochemistry poses a low risk, if adequate design and management practices are undertaken during construction, operation, and closure.

Seepage analysis

Seepage analyses were undertaken to estimate the position of the phreatic surface for the embankment design at the crest RL480.0 m (14.0 m maximum embankment height). A summary of the seepage analyses results is provided in Table 3. Seepage rate through the dam floor is approximately 280 m^3 / day.

Table 3: Results of seepage analyses

Scenario	Phreatic case	Seepage flow (m^3/day/m of embankment)	Approximate embankment length (m)	Estimated seepage per for embankment (m^3/day)
Upstream using traffic compacted mine waste	Worst-case	3.34×10^{-3}	1,300	4.4
	Operational	9.56×10^{-4}		1.3
Upstream using compacted dried tailings	Worst-case	3.41×10^{-3}		4.5
	Operational	9.52×10^{-4}		1.3

Water balance

A water balance analysis was undertaken by CMW (2022) with the results indicating a potential average water returns of around 55% of the tailings slurry water deposited into the facility. The water recovery will vary according to the management of the facility, specifically the size of the pond and running beaches.

Monitoring

Vibrating wire piezometers (VWP) will be installed internally within TSF3 to provide early detection of seepage. VWP monitoring will typical occur monthly, depending on the variability of pore pressure response and the data will be downloaded and analysed to monitor for seepage. The collected data will be reviewed periodically, appropriate actions will be taken, and the findings will be reported in the annual audit.

Six monitoring bores, TBS7, TBS8, TBS9, TBS10, TBS11, and TBS12 will be installed around the perimeter of the TSF3, undertaking groundwater monitoring as per the licence L8644/2012/1 ambient groundwater monitoring requirements.

Two existing monitoring bores, TBS3 and TBS4 will be decommissioned due to these bores being located within the TSF3 footprint area. The monitoring for these locations will be captured by the proposed monitoring bores to be installed and constructed.

2.4.2 Construction and operation of TWTSF

The applicant proposes to construct a new in-pit TSF by using the existing Tuckabianna West pit, which will be the main TSF for tailings deposition after TSF2 has been filled in approximately 6 months' time. The 21.9 ha TWTSF will provide a storage capacity of 5.8 Mt with a total life of 6 years at a rate of 1.3 Mtpa. The maximum beach will fill 1 m below the current pit crest to a height of 452 mRL.

The TWTSF design comprises of a cumulative 2 stage design, where Stage 1 will have tailings deposited into the TWTSF from the southwestern end to a minimum of 405 mRL, or to the saddle level between the southern and northern parts of the TSF (Table 4). Several spigots will be used. Stage 2 will have tailings deposited into the TWTSF from the northeastern and southwestern sides of the TSF, where several spigots will be used. Tailings deposition will occur so that the supernatant pond is in the central area of the pit up the ramp from the northern wall. The decant pump will then be moved up the ramp as tailings and water levels rise.

Table 4: TWTSF staged sequencing

Stage	Completion height (mRL)	Storage life (years)	Volume (Mm^3)
1	405	6	5.8
2	452		

TWTSF area is approximately 700 m in length and 300 to 400 m wide with a northeast to southwest orientation. The Tuckabianna West pit is comprised of two pit areas separated by an access track and associated pit slopes. The larger pit located west of the smaller pit is approximately 400 m in length and 400 m wide at its larger point. The smaller pit is approximately 300 m in length and 130 wide at its largest point. The maximum depth of the pit is approximately 100 m within the larger pit.

The TWTSF design prepared by CMW (2023) contains a geotechnical review of the existing pit structure, as there were no existing geotechnical reports and geotechnical drilling data available for review. The nominal overall pit slopes within the TWTSF are generally 45 to 65 degrees. The pit slopes were generally steeper on the western side of the pit with bench intervals approximately 5 to 10 m wide and approximately 20 m high. The overall slope stability on the eastern side of the pit and accessway appears to be adequate, however ongoing monitoring would be required as deposition progresses. CMW (2023) stated that "*stability analysis for the case of the main access ramp overall stability was conducted based on site observations and assumed material parameters (effective stress parameters) from other open pits in Goldfields with similar geology and weathering profile…The analyses were performed utilising the program SLIDE and examined both a static case and a Safety Evaluation Earthquake case. The Factors*

of safety (FoS) from the analyses were adequate when compared with the recommended FoS of 1.5 and 1.1, respectively."

An operational freeboard of 300 mm will be maintained from the embankment crest and a freeboard of at least 500 mm will be maintained above the supernatant pond, to maintain capacity following a 1 in 100-year 72-hour rainfall event.

Tailings will be transported from the Process Plant along a bunded HDPE pipeline that will extend to the eastern part and wrap around the pit length to allow for tailings deposition and beaching. The pipelines will be installed with spigot offtakes that are to be placed at several intervals along the embankment. Water will be collected from TWTSF from the western pit sump during stage 1 and from the pit centre during stage 2.

The return water will be pumped back to the Tuckabianna Process Plant. However, the applicant has proposed an option for the return water to enter a HDPE lined transfer pond with a storage capacity of 5,000 m^3 at the entrance to TWTSF in the pit ramp and then pumped via HDPE pipelines along a pipelines corridor that the tailings deposition will follow. This return water pipeline will also have several turkeys' nests constructed at nominal 500 m intervals to allow for routine maintenance and containment of emergency spills due to pipeline or pump failure.

Tailings characterisation

The tailings physical and geochemical characterisations will be similar to the tailings that will be deposited into TSF3.

Hydrogeology

Rockwater (2023) undertook a hydrology and hydrogeological assessment, which determined peak flood levels and the potential impact of surface water flows. It was identified that the western extent of the PMF flood would be approximately 190 m east of the TWTSF bund, which would result in no impact to the TWTSF by flood flows. Rockwater (2023) identified that Tuckabianna West pit is in a mineralised banded iron formation (BIF) that has moderate permeability, and the groundwater flows up to 1000 m^3/d. A numerical groundwater model, Processing Modflow version 8.0.47, was used to estimate water seepage rates from TWTSF with a worst case of no sealing of water-bearing zones by tailings. The modelling results indicated that groundwater flow rates after the first months of tailings emplacement would be 240 m^3/d after 1.3 years, 500 m^3/d after 4.3 years, and 660 m^3/d after 5.9 years. The modelling results also suggest that seepage may extend up to 400 m north-northeast of TWTSF, and 1,000 m south-southeast of TWTSF.

Rockwater (2023) concluded that as tailings deposited consolidate within the TWTSF, this will likely block water-bearing joints and fractures, which will reduce seepage from the TWTSF to aquifers along strike. Tailings maintained below, or slightly above the original water table level would also limit any impacts.

Water recovery system and seepage management

As t TWTSF is an existing in-pit, the TWTSF design does not require the installation of seepage control features like those for TSF3, apart from the decant return line. Prior to tailings deposition, surface water within the pit will be removed by a decant pump deployed from the pit central ramp. CMW (2023) has modelled that the water recovery system can return 100% of the supernatant inflow to the Processing Plant for reuse. CMW (2023) has recommended construction of low bunds of select filter rocks as turbid decant water has occurred in other pits, for example Julie's Reward Pit, particularly when a single discharge point has been provided.

Further seepage management measures would be to maintain and operate a minimum total freeboard of 1.0 m, and installation of monitoring bores in suitable locations around TWTSF.

Water balance

A water balance analysis was undertaken by CMW (2023) where inflows and outflows for the facility was estimated on a monthly basis. The inflows include runoff from small upstream catchments, incident rainfall, and slurry water. The outflows include seepage losses, water retrained in tailings (pore water), and evaporation. The results indicated a potential average water returns of around 60% of the tailings slurry water deposited into the facility. The water recovery will vary according to the management of the facility, specifically the size of the pond and running beaches.

Monitoring

The applicant proposes four monitoring bores, TWMB01, TWMB02, TWMB03, and TWMB04 will be installed around the perimeter of the TWTSF, undertaking groundwater monitoring as per the licence L8644/2012/1 ambient groundwater monitoring requirements.

3. DEMIRS environmental and geotechnical advice

Environmental and geotechnical advice was sought from DEMIRS on the construction and operation of TSF3 and TWTSF. In summary, DEMIRS has identified the following concerns that may be relevant to the works approval application and are also required to be addressed as part of the submitted revised Mining Proposal (Rev. 2.0):

- Implement a robust monitoring program for groundwater and pit walls in a suitable frequency considering past monitoring results and trends.
- Implement, review, and update the Emergency Action Plan considering the geotechnical advice and triggers.
- Geophysical surveys undertaken may indicate increased fracturing associated with interpreted faults that may result in an increase in permeability and porosity that could provide suitable conditions for seepage pathways. These lineaments may be targeted as part of future drilling campaigns, where depths required are to be at least 5 m into weathered rock.
- The potential height of floodwater up to 1.25 m could possibly reach the edge of TSF3. It is recommended to construct a bund along the western part of TSF3 to protect the walls during a PMF event and flood flows from the nearby drainage line. A bund would potentially allow for the installation of a toe-drain and have a minimum freeboard requirement for TSF closure.

4. 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 2020a).

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.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction, commissioning, and operation which have been considered in this decision report are detailed in Table 5 below. Table 5 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 5: Proposed applicant controls

Sources / activities	Emission	Potential pathways	Proposed controls
Construction			
Construction of a 4-stage paddock style TSF3. Construction of TWTSF. Installation of tailings delivery and return water pipelines. Construction of turkey's nests along the tailings and return water pipeline.	Dust	Air / windborne pathway	• activities must be limited to minimise dust generation on cleared areas; • activities must be delayed if weather conditions are likely to produce excessive dust; and • water trucks must be used for dust suppression as required.
	Hydrocarbon spills and leaks	Direct discharge and overland flow	• operate under internal procedure *SOP022-Hydrocarbon Management* which specifies the requirements of spill kit placement, use and spill remediation actions.
Installation and construction of groundwater monitoring bores and vibrating wire piezometers (VWPs) around the TSF perimeter.	Dust	Air / windborne pathway	• activities must be limited to minimise dust generation on cleared areas; • activities must be delayed if weather conditions are likely to produce excessive dust; and • water trucks must be used for dust suppression as required.
Commissioning			
Discharge of tailings and return water from pipeline leak / rupture	Tailings and return water	Direct discharge ad overland flow	• pipelines must be: ➢ equipped with automatic cut-outs in the event of a pipe failure; or ➢ equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or ➢ provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections. • daily visual inspections of pipelines, other infrastructure, and vegetation near the proposed pipeline route for any leaks or spills.

Sources / activities	Emission	Potential pathways	Proposed controls
Operation			
Dust (dried tailings) lift-off from the surface of the TSFs	Dry tailings (particulates) on exposed beaches potentially containing increased concentrations of metals, salts, nutrients		• applicant expects dust generation from tailings beaches is not expected due to the tailings being saline and a crust likely to develop on the beaches; and • in the event of potential dust generation, the tailings beaches will be irrigated (i.e., with sprinklers or similar) or tailings deposition managed so beach areas do not dry back for dust generation to occur.
Discharge of tailings and return water from pipeline leak / rupture	Tailings and decant return water		• maintain and operate secondary containment to contain any spill for a period equal to the time between routine inspections; and • daily visual inspections of pipelines, other infrastructure, and vegetation near the proposed pipeline route for any leaks or spills.
Use of turkey's nests for emergency spills from pipelines			• turkey's nest storage capacity not to exceed 175 m^3**;** and • inspection of turkey's nests of integrity and pooling of tailings / return water from a potential spill / leak.
Storage of tailings into TSF3 and TWTSF	Seepage of tailings material through the TSF3 and TWTSF embankment and foundation base	Infiltration through soil to underlying groundwater	• inspection of tailings deposition to ensure the supernatant pond is maintained centrally, away from the embankment perimeter and around the decant tower; • minimise the supernatant pond and water level by removing water from the TSFs via a decant pump to be used in the Tuckabianna Processing Plant; • inspection of active tailings discharge to confirm that the correct operational procedures are followed, the equipment is functioning, and the expected beach profile is developing; • inspection of the decant tower, decant pump operation, adequacy of safety equipment and supernatant pond water levels and areas; • inspection for the presence of fauna on the TSFs; • monitoring of VWPs for early warning detection of seepage; • quarterly monitoring of the groundwater monitoring bores to determine the standing water levels and potential contamination in accordance with the conditions imposed on

Sources / activities	Emission	Potential pathways	Proposed controls
			the current licence L8644/2012/1; and • undertake a technical review and operational audit by a suitably qualified professional on an annual basis. The technical review will assess the performance of the TSFs against the design criteria and assumptions and conditions of the operating works approval.
	Tailings	Direct discharge from overtopping	• maintain a minimum 0.5 m total freeboard (comprised of minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m) and to maintain capacity following a 1 in 100-year, 72-hour rainfall event; and • daily visual inspections to maintain the freeboard.

4.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020a), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 6 and Figure 1 below provides a summary of potential environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020b)). It should be noted that any potential sensitive human receptors have been screened out from the risk assessment as the nearest human receptors, a pastoral homestead, is approximately 10 km from the prescribed premises boundary.

Table 6: Sensitive environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Public Drinking Water Source Area *Cue Water Reserve*	Approximately 9.5 km west of the premises boundary.
Surface water – minor non-perennial water course	Borders the western edge of the proposed TSF3. The ephemeral creek originates north of the TSF3 and runs immediately to the west of the TSF3 before turning to the south-west. The ephemeral creek intersects a main creek line approximately 2.5 km to the south of the Premises. During heavy rainfall events the main creek discharges into Lake Austin located approximately 5 km south of the Premises. Minor tributaries flow on the western and eastern edges of the TWTSF flowing towards Lake Austin.
Surface water – *Lake Austin* Lake Austin is a significant salt lake system that supports micro-organisms which provide a food source for local and migratory bird species.	Approximately 10 km south of the southern portion of the premises boundary.

Environmental receptors	Distance from prescribed activity
Groundwater Historically flows in a south direction towards Lake Austin.	Historical groundwater located 26-27 metres below ground level (mBGL). Electromagnetic and resistivity surveys around TSF2 in March 2021 indicated water levels of between 12 to 18 mBGL.
Tuckabeena Well	Tuckabeena Well (Water Reserve R18006) is within the footprint of TSF3 and will be encapsulated by the construction of the TSF. The applicant has provided correspondence from DEMIRS dated 25 May 2022 that the Big Bell Gold Operations Pty Ltd had received consent to undertake mining activities on Waer Reserve R18006.
Priority Ecological Communities (PEC) 1. *Lake Austin vegetation complexes (banded ironstone formation)* P1 2. *Austin Land System* P3	1. Within the southern portion of the premises boundary, approximately 1.5 km southeast from TWTSF and approximately 5 km southeast of TSF3. 2. Approximately 3.7 km southeast from the premises boundary, but approximately 12.7 km southeast from TWTSF.
Priority flora 1. *Acacia speckii* P4 2. *Prostanthera ferricola* P3 3. *Drummondita miniata* P3 4. *Sida picklesiana* P3 5. *Dodonaea amplisemina* P4 6. *Calotis* sp. Perrinvale Station P3 No species protected by the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or the *Biodiversity Conservation Act 2016* (BC Act) were recorded in the Survey Area.	1. Approximately 5 km from TSF3. 2. Approximately 1.6 km west from TSF3 outside the premises boundary. 3. Within the premises boundary. Considered endemic to the Murchison bioregion. One plant was located 200m to the south of TSF2. 4. Within the premises boundary. A single plant was also recorded in the drainage line, 600m south of TSF2. 5. Located outside the premises boundary approximately 2 km. 6. Within the premises boundary.
Threatened and Priority fauna 1. West Coast Mulga Slider (*Lerista eupoda*) P1 2. Shield-backed Trapdoor Spider (*Idiosoma nigrum*) Vulnerable	1. Western Ecological survey (2021) considered the potential for the slider to inhabit the survey area due to suitable habitat. However, no records in the survey area. 2. Recorded at Weld Range.
Aboriginal and other heritage sites 1. Heritage Site ID 6200 – South Tree Scar (Lodged) 2. Heritage Site ID 6199 - Tuckabianna South-West Artefacts/Scatter (Lodged) 3. Heritage Site ID 6257 - Webbs Patch Artefacts/Scatter/Water Source (Registered) 4. Heritage Site ID 10787 - Cue East Artefacts/Scatter/Painting,	1. Approximately 200 m west from the premises boundary. 2. Approximately 690 m southwest from the premises boundary. 3. Approximately 3.4 km south of the premises boundary. 4. Approximately 3 km east from the premises boundary. 5. Approximately 3.7 km northwest from the premises boundary. 6. Approximately 2.9 km east from the premises boundary.

Environmental receptors	Distance from prescribed activity
Rockshelter, Arch Deposit, Camp (Registered) 5. Heritage Site ID 10736 – Painting (Registered) 6. Heritage Site ID 10738 – Cue Artefacts / Scatter / Man-Made Structure / Skeletal Material / Burial (Lodged) 7. Heritage Site ID 10735 – Muir's Site 05. Engraving, Named Place, Water Source (Registered)	7. Approximately 4.5 km west from the premises boundary.

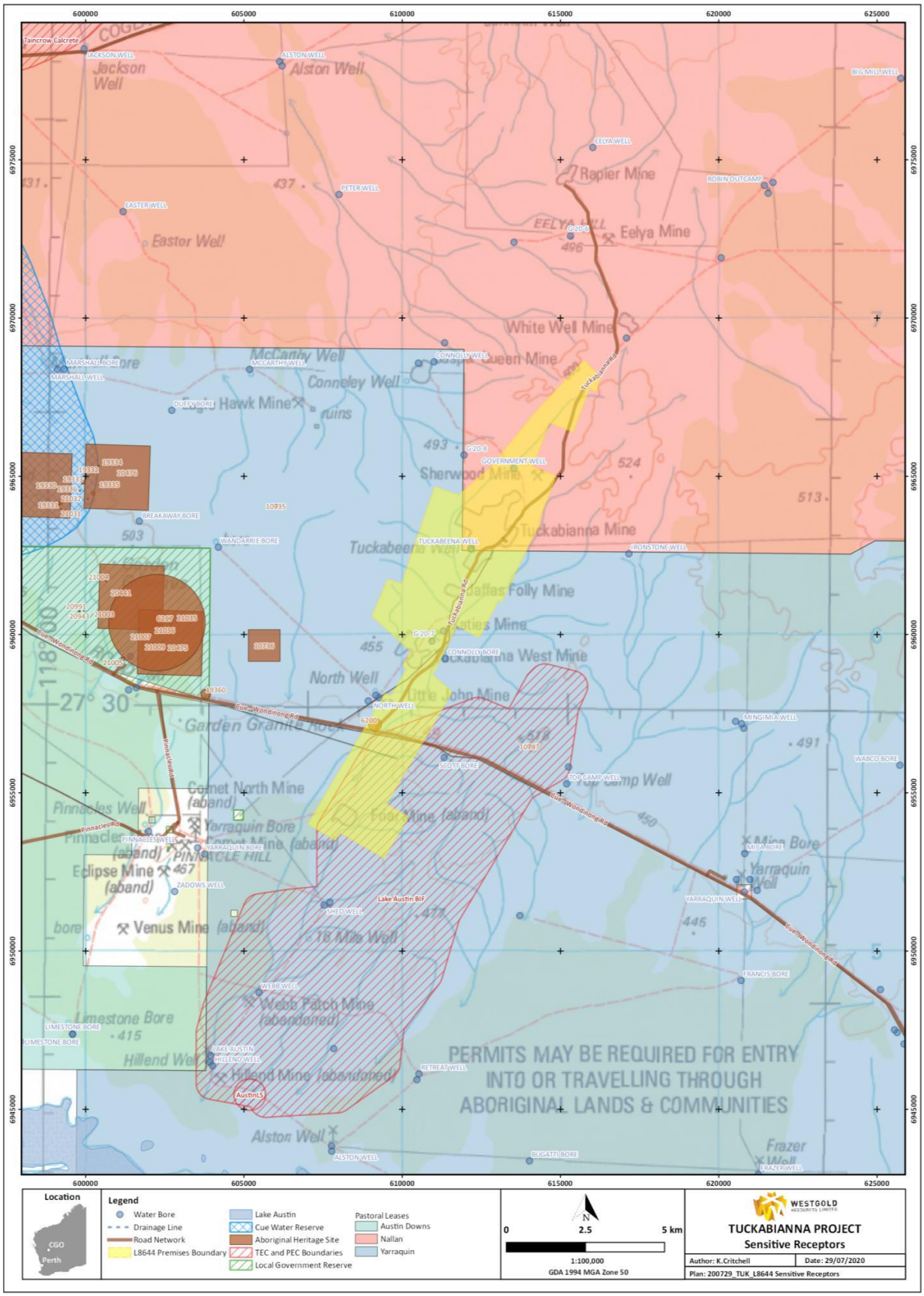

Figure 1: Distance to sensitive receptors

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020a) for each identified emission source 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 applicant 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 applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 7.

Works approval W6880/2024/1 that accompanies this decision report authorises construction, commissioning, and time-limited operations. The conditions in the issued works approval, as outlined in Table 7 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 7: Risk assessment of potential emissions and discharges from the premises during construction, commissioning, and time limited operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction of a 4-stage paddock style TSF3 Construction of TWTSF Installation of tailings delivery and return water pipelines. Construction of turkey's nests along the tailings and return water pipelines.	Dust	Air / windborne pathway Dust deposition on native vegetation impacting vegetation health. Reduce ephemeral surface water quality.	Surrounding native vegetation Priority flora Surface water / nearby minor creek	Refer to Section 4.1	C = Slight L = Possible **Low Risk**	Y	No conditions imposed	No additional regulatory controls are required to mitigate the risk.
	Hydrocarbon spills and leaks	Direct discharge and overland flow. Contamination of the surrounding soils and minor creeks, water and impacting nearby vegetation health.	Soil Surrounding native vegetation Priority flora Surface water / nearby minor creek	Refer to Section 4.1	C = Slight L = Unlikely **Low Risk**	Y	No conditions imposed	No additional regulatory controls are required to mitigate the risk. General provisions of the *Environmental Protection (Unauthorised Discharges) Regulations 2004* apply.
Installation and construction of groundwater monitoring bores	Dust	Air / windborne pathway Dust deposition on native vegetation impacting vegetation health. Reduce ephemeral surface water quality.	Surrounding native vegetation Priority flora Surface water / nearby minor creek	Refer to Section 4.1	C = Slight L = Possible **Low Risk**	Y	No conditions imposed	No additional regulatory controls are required to mitigate the risk.
Commissioning								
Discharge of tailings and return water from pipeline leak / rupture	Tailings and return water	Direct discharge and overland flow Detrimental impacts on soil and aquatic biota and reduction in vegetation health due to tailings	Soil Surrounding native vegetation Priority flora Native fauna	Refer to Section 4.1	C = Minor L = Rare **Low Risk**	Y	Conditions 14, 15, 16	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		chemistry and metallic ore Reduced local fauna health from increased metal, salt, nutrient, and solid loads into the environment. Increased erosion (sedimentation and scouring within creek lines).	Surface water / nearby minor creek					
Time-limited operation								
Dust (dried tailings) lift-off from the surface of the TSFs	Dry tailings (particulates) on exposed beaches potentially containing increased concentrations of metals, salts, nutrients.	Air / windborne, then deposition Dust deposition on native vegetation impacting vegetation health. Reduce ephemeral surface water quality.	Surrounding native vegetation Priority flora Surface water / nearby minor creek	Refer to Section 4.1	C = Minor L = Rare **Low Risk**	Y	Condition 21	N/A
Discharge of tailings and return water from pipeline leak / rupture	Tailings and decant return water	Direct discharge and overland flow. Detrimental impacts on soil and aquatic biota and reduction in vegetation health due to decant return water and tailings chemistry and metallic ore. Reduced local fauna health from increased metal, salt, nutrient, and solid loads into the environment. Increased erosion (sedimentation and scouring within creek	Soil Surrounding native vegetation Priority flora Native fauna Surface water / nearby minor creek	Refer to Section 4.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 21, 29	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		lines).						
Use of turkey's nests for emergency spills from pipelines	Tailings and decant return water	Direct discharge and overland flow Detrimental impacts on soil and reduction in vegetation health due to decant return water and tailings chemistry and metallic ore.	Soil Surface water Groundwater Surrounding native vegetation Priority flora	Refer to Section 4.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 21	N/A
Storage of tailings to TSF3 and TWTSF	Seepage of tailings material through the TWTSF and TSF3 embankment and foundation base	Infiltration through soil to underlying groundwater causing a detrimental effect on the local groundwater quality.	Groundwater Groundwater dependent ecosystems	Refer to Section 4.1	C = Moderate L = Possible **Medium Risk**	N	Conditions **2, 4, 21, 27, 28**, 29, **31**	**Condition 2:** Inclusion of constructing a bund on the western edge of TSF3 in the event of a PMF. Refer to sections 2.4.1 and 3 for further detail. **Condition 4:** Installation of two additional monitoring bores around TWTSF and one additional monitoring bore around TSF3 as recommended by the department's Principal Hydrogeologist. Refer to section 4.3 for further explanation. **Condition 21:** Maintain the integrity of the bund on the western edge of TSF3 in the event of a PMF. Refer to sections 2.4.1 and 3 for further detail. **Condition 27:** Inclusion of the following parameters, calcium, magnesium, electrical conductivity, nickel, arsenic, mercury, antimony, and nitrate for ground water monitoring as recommended by the
		Infiltration through soil causing an increasing groundwater level. Impacts on native vegetation due to waterlogging and increased salts. Downstream impacts on surface water due to discharge into the nearby ephemeral creek.	Surrounding native vegetation Priority flora Groundwater Surface water / nearby minor creek	Refer to Section 4.1	C = Moderate L = Possible **Medium Risk**	N	Conditions **2, 4, 21, 27, 28**, 29, **31**	
	Tailings	Direct discharge from overtopping of the TSF3 or TWTSF embankment Detrimental impacts on soil and aquatic biota and reduction in vegetation health	Surrounding soils Surrounding native vegetation Surface water / nearby creek	Refer to Section 4.1	C = Moderate L = Rare **Medium Risk**	Y	Conditions **2,** 3, **21, 28**, 29	

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
								department's Principal Hydrogeologist. Refer to section 4.3 for further explanation. **Condition 28:** Inclusion to undertake monitoring of the water balance for TSF3 and TSF, as is also a requirement for other TSFs onsite under the current licence L8644/2012/1.

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

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4.3 Regulatory controls

Technical advice was sought from the department's Principal Hydrogeologist on groundwater monitoring near the proposed TSF3 and TWTSF at the Premises.

The Principal Hydrogeologist notes that the Tuckabianna Project area is located in a geologically complex region due to the extent of the basement rocks that underlie the region that have been altered by folding and faulting over time (Wilkins 1993). This has created structural discontinuities in the basement rocks and these features form the main groundwater flow-paths in the differing rock types.

It has been noted that Rockwater has undertaken investigations to suggest that a large proportion of the groundwater flow in the area takes place in structurally deformed and chemically altered banded iron formation (BIF) units.

Due to the structural complexity of the basement rocks in the Tuckabianna Project area, it would be important for monitoring bores near TSF3 and TWTSF to be installed and located on shear zones or in other structural discontinuities in the bedrock that would be the dominant groundwater flow-paths near the TSFs. However, it was not clear what measures were undertaken to locate the monitoring bores around TSF3 and TWTSF from the information provided in the works approval application.

Generally, monitoring bores to be installed in structurally complex areas are determined following a review of existing geological investigations and mapping that was undertaken during the exploration when developing a new mineral deposit. This information, with the results of additional ground-based geophysical investigations, can then be used to more accurately site monitoring bores on structural features that are likely to be significant groundwater flow-paths.

Although limited information was provided about how the monitoring bores near TSF3 and TWTSF were located, the Principal Hydrogeologist considers that the number of monitoring bores and their approximate locations appear to be reasonable for the TSFs of these types. However, two recommendations were made to ensure that the risk of groundwater contamination can continue to be monitored for TWTSF and to understand and define the full extent of the groundwater mound that will develop beneath TSF3.

The following recommendations were made:

- the applicant should install and construct two additional monitoring bores around TWTSF at the approximate locations as shown in Figure 2; and
- the applicant should install and construct one additional monitoring bore sited near the north-east corner of TSF3 as shown in Figure 3.

Figure 2: Proposed monitoring bore locations at TWTSF.

Figure 3: Proposed monitoring bore location at TSF3.

The department included these recommendations through condition 4 as part of the works approval application. However, amendments were made to this condition by removing the proposed additional monitoring bore at TSF3 and the locations of the two additional monitoring bores at TWTSF, after the works holder provided further explanation. Refer to Appendix 1 for further detail.

The Principal Hydrogeologist also reviewed the suite of analytes that would be measured in the monitoring bores around both TSFs proposed by the applicant. The Principal Hydrogeologist deems the proposed monitoring program for the TSFS is suitable; however, recommends several additional analytes to be included. This is to ensure the monitoring captures the information provided in the works approval application and is based on a more comprehensive assessment of the information on the geochemical characteristics of ores and host rocks in the Tuckabianna Project area.

The following recommendations were made:

- the applicant should include calcium, magnesium, and electrical conductivity to the current suite of major ions and field parameters. Major ions control the chemical composition of groundwater and are often early indicators that groundwater is contaminated by TSF seepage, even from small changes in the chemical composition.
- the applicant should include arsenic, mercury, nickel, and antimony to current suite of metals and metalloids. Arsenic and mercury were elements that had elevated concentrations in the tailings pore-water sample provided in the works approval application. Nickel should also be added as this metal generally accompanies cobalt that had significantly elevated concentration in the tailings pore-water sample. Lastly, antimony should be included as existing literature (Wilkins 1993) has indicated that significant amounts of antimony mineralization (the minerals stibnite and native antimony) was associated with the gold that was mined in the vicinity of the Tuckabianna Project area.
- the applicant should include nitrate to the suite of nitrogen compounds as elevated nitrate concentrations were present in the analytical results of the tailings pore-water. The elevated nitrate concentrations in the tailings pore-water may have been produced by the oxidation of cyanide compounds that were used for gold ore processing.
- the applicant should include limits for groundwater near the TSFs using the ANZG 2018 guideline value for livestock water supply. As there is no current guideline value for antimony, the recommended value for a concentration limit is 0.5 mg/L, which is that for arsenic that has similar chemical behaviour and toxicity to antimony.

The department has included these recommendations through conditions 27 and 31 as part of the works approval application.

Lastly, the Principal Hydrogeologist notes that if monitoring were to indicate that significant seepage is occurring from TSF3 and / or TWTSF, seepage recovery bores would have to be installed and constructed at sites where groundwater pumping rates could be maximised. Ground-based geophysical investigations using electrical or electromagnetic methods would potentially be required to identify the most suitable sites for seepage recovery.

The department has not proposed any controls or conditions related to the installation and construction of new seepage recovery bores, as seepage recovery bores are not required at this time.

5. Consultation

Table 8 provides a summary of the consultation undertaken by the department.

Table 8: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 19 February 2024	No comments received	N/A
Shire of Cue was advised of proposal on 14 February 2024	No comments received	N/A
DEMIRS was advised of proposal on 14 February 2024	Refer to section 3 of this document for the advice and comments received by DEMIRS.	The department has taken the advice and comments into consideration and will be included in the works approval as conditions where required. Refer to section 4.2, Table 7 for further detail.
Applicant was provided with draft documents on 10 April 2024	Applicant provided comments on 30 April 2024 and are detailed in appendix 1.	The department's response is provided in appendix 1.

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. ANZG 2018, Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at www.waterquality.gov.au/anzguidelines
2. CMW Geosciences (CMW) 2022, *Tailings Storage Facility 3 (TSF3) Tuckabianna Gold Mine, Central Murchison Gold Project,* Perth, Western Australia. Unpublished report for Westgold Resources Ltd.
3. CMW 2023, *Tuckabianna West Pit Tailings Storage Facility Tuckabianna Gold Mine, WA Design Report,* Perth Western Australia. Unpublished report Big Bell Gold Operations Pty Ltd.
4. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
5. Department of Water and Environmental Regulation (DWER) 2020a, *Guideline: Risk Assessments*, Perth, Western Australia.
6. DWER 2020b, *Guideline: Environmental Siting*, Perth, Western Australia.
7. MBS Environmental 2013, *Julies Reward In-Pit Tailings Storage Geochemical Tailings Characterisation,* prepared for Silver Lake Resources.
8. Rockwater 2021, *Surface Water Assessment; Planned TSF3,* Perth, Western Australia. Unpublished report for Westgold Resources Ltd.
9. Rockwater 2023, *Tuckabianna West In-Pit TSF, Tuckabianna – Hydrological and Hydrogeological Assessment,* Perth, Western Australia. Unpublished report for Westgold Resources Ltd.
10. Wilkins C. 1993, *A post-deformational, post-peak metamorphic timing for mineralisation at the Archaean Big Bell deposit, Western Australia*. Ore Geology Reviews, **7**, 439-483.

Condition / Section	Summary of applicant's comment	Department's response
Works approval		
Duration	Duration of W6880 requested for as long as possible considering the TSF3 schedule is not expected to be required until 2029/2030 in accordance with the proposed construction and compliance schedule.	Works approvals are nominally issued for a 3-5 yr duration. Notwithstanding, the department notes the request for the works approval duration and has no objection to allow the duration out to 2030. If additional time is required for the proposed works under this works approval, an amendment application should be sought. The applicant will need to provide grounds for the additional time and rationale to justify the existing controls are appropriate to regulate related risks or seek changes to ensure they are contemporary.
Table 1 – 1 Table 2 – 1 Table 2 – 2	Applicant requests rephrasing from 'pumping rate' to 'pumping capacity'. The design plan states the working capacity (i.e. steady state rate) of the pump needs to be at least 180 tonnes per hour (tph) (i.e. that it can achieve over 180 tph if required). Thus, referring to pumping capacity instead of pumping rate. Depending on supernatant and operation conditions, the pumping rate may vary.	Amended.
Table 1 – 3	Applicant requests removal of exact 1 mm thickness specification to only 'HDPE lined' or include 'at least 1 mm thick HDPE Lined'	Amended to 'HDPE lined'.
Table 2 – 1	Starter Embankment / Stage 1 is to be constructed using waste rock. Subsequent stages will require use of tailings. Applicant requests change to 'embankment constructed from dried tailings or waste rock'.	Amended that 'embankment constructed from dried tailings or waste rock' for Starter Embankment / Stage 1 and subsequent stages.
Table 4 – Infrastructure – Monitoring Bores	Applicant proposes an alternative monitoring approach that aims to achieve the desired outcomes while minimising further drilling activities: **TSF3 Monitoring Bore Location**	The proposed additional monitoring bore to be installed around TSF3 has been removed based on the Applicant's reasoning.

Condition / Section	Summary of applicant's comment	Department's response
	The proposed location for the additional monitoring bore at TSF3, situated on the existing TSF1, may offer limited incremental benefit. While this placement could potentially detect seepage from TSF3 migrating beneath TSF1, it would provide little additional value beyond the data already obtained from existing monitoring bores adjacent to TSF1, such as TBS2. Applicant requests to remove the requirement to add an additional monitoring bore at TSF3, as described under Condition 4. **TWTSF Monitoring Bore Locations** Rockwater Hydrogeological and Environmental Consultants provided initial bore locations within the 2023 TWTSF Hydrogeological Report. Following the submission of the Works Approval application, Applicant commissioned Wai Hydrogeological Consultants to undertake a field survey to refine these locations. The refinement process incorporated historical data, geological modelling assessments to target Banded Iron Formation (BIF) structures, shear zones and potential seepage pathways, as well as on-site oversight during the drilling program. The improved TWTSF monitoring bore locations are depicted in the updated Figure 2.	The department has included the proposed additional monitoring bores around TWTSF and included the updated figure.
Table 5 – 1	TWTSF equipment and electrical commissioning will occur only on pipeline, pump, and telemetry systems. A commissioning period of 90 days is requested.	Amended.
Table 5 – 3	No commissioning is required on the Return Water Pond.	Removed from Table 5.
Table 5 – 4	No commissioning is required on any Turkey's Nests for TWTSF.	Removed from Table 5.
Table 5 – 5	TSF3 equipment and electrical commissioning will occur only on pipeline, pump, and telemetry systems. A commissioning period of 90 days is requested.	Amended.
Table 8 – TWTSF Monitoring Bores	Please refer to comments provided under 'Table 4 – Infrastructure – Monitoring Bores'.	Amended as per the comments under 'Table 4 – Infrastructure – Monitoring Bores'.
Table 8 – TSF3 Monitoring Bores	Please refer to comments provided under 'Table 4 – Infrastructure – Monitoring Bores'.	Amended as per the comments under 'Table 4 – Infrastructure – Monitoring Bores'.

Condition / Section	Summary of applicant's comment	Department's response
Table 8 – Limits	Applicant proposes a multi-faceted monitoring strategy that prioritises the assessment of groundwater levels to complement the existing water chemistry monitoring program. This approach focuses on identifying potential impacts on vegetation health in the vicinity of TSF3 and TWTSF. Given the absence of downstream environmental receptors and the limited root depth of surrounding vegetation (primarily *Acacia aptaneura* (Mulga)). with a maximum root system depth of approximately 8 m). Root depth data for *Acacia* sp. was retrieved from technical study 'The Potential for Groundwater Use by Vegetation in the Australian Arid Zone' (Cook & Eamus, 2018). Applicant proposes the removal of limits on TDS and Sulphate, and the placement of a limit on Standing Water Level (SWL), including a trigger limit to require the implementation of pre-defined remedial actions. Applicant is proposing a SWL limit of 9 metres below ground level (mbgl) with a trigger limit (to implement remedial controls suggested below) of 12 mbgl. The use of a SWL trigger and limit will initiate the implementation of remedial actions such as the installation of groundwater interception bores, photo monitoring programs or modification to the decant recovery systems.	The department has removed the TDS and sulphate limit values and included the trigger and limit values proposed by the applicant for SWL. Inclusion of condition related to notification requirements in the form of a N1 form when the SWL trigger limit is exceeded (similar to the notification requirements under the licence L8644/2012/1).
Figures 2 and 3 – Discharge / spigot locations	Appendix A in the provided Attachment 3B (TWTSF Design Report) indicated that the facility will use multiple spigots (three on the southern side and one on the northern side). The '*Tailings Deposition*' arrows in Figure 2 and Figure 3 of the Draft Works Approval depict the spigot locations and tailings discharge points.	Noted.
Figure 4 – TSF3 Pipelines	Please see new figure (Figure 3) with indicative TSF3 pipeline placement.	Included addition figure as Figure 5 to the works approval.
Figures 10 and 11 – Spigot Locations	Figure 3 in the provided Attachment 3B (TSF3 Design Report) indicated that spigots will be placed at approximately 20 m intervals around the TSF. The specification of spigots on these figures may not be practically achievable until the installation of pipework and spigots has been undertaken. Applicant will be able to provide photographic evidence on the placement of spigots as part of the construction compliance report.	Noted.
Decision report		
2.4.2 – Tailings Characterisation	The current Life of Mine (LOM) plan assumes consistent tailings characteristics based on the current ore source. Therefore, additional geochemical analysis is not required at this time. However, any future changes in the ore source will necessitate a reassessment, potentially including further geochemical analysis.	Department notes the applicant's explanation and has amended this section as;

Condition / Section	Summary of applicant's comment	Department's response
		'*The tailings physical and geochemical characterisations will be similar to the tailings that will be deposited into TSF3*.'
Table 5 – Construction – Proposed Controls	Applicant will operate under internal procedure *SOP022-Hydrocarbon Management* which specifies the requirements of spill kit placement, use and spill remediation actions.	Department included the proposed control.
Table 5 – Construction – Proposed Controls	Include ': *or* *equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures*.'	Included proposed control.
Table 5 – Operation – Proposed Controls (Dust)	Note that the presence of supernatant significantly reduces dust during operational phases due to constant saturation of tailings.	Noted.
Table 6 – Tuckabeena Well – Distance from prescribed activity	Please note that Tuckabeena Well (water reserve R18006) is within the footprint of TSF3 and will be encapsulated by the construction of the TSF. The statement regarding 'no plans for development or future utilisation ' is in relation to the Local Government and Pastoral Lease Owner (Yarraquin Station). Supporting the ultimate encapsulation of Tuckabeena Well, please find attached below in Figure 4 correspondence from DEMIRS dated 25/05/2022 with consent to undertake mining activities on Water Reserve R18006.	Department has amended the table with the following text: '*Tuckabeena Well (Water Reserve R18006) is within the footprint of TSF3 and will be encapsulated by the construction of the TSF.* *The applicant has provided correspondence from DEMIRS dated 25 May 2022 that the Big Bell Gold Operations Pty Ltd had received consent to undertake mining activities on Water Reserve R18006*.'