



## Application for Licence Amendment

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

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<b>Licence Number</b>	L8345/2009/3
<b>Licence Holder</b>	Greenstone Resources (WA) Pty Ltd
<b>ACN</b>	100 341 599
<b>File Number</b>	2011/009446-1~5
<b>Premises</b>	King of The Hills (KOTH)  LEONORA WA 6438  Legal description –  Part of mining tenements M37/67, M37/76, M37/90, M37/201, M37/222, M37/248, M37/330, M37/410, M37/429, M37/449, M37/451, M37/457, M37/547, M37/548, M37/572, M37/573, M37/574 and M37/1105  As defined by the Premises maps attached to the Revised Licence
<b>Date of Report</b>	29 June 2023
<b>Decision</b>	Revised licence granted

**Alana Kidd**  
**MANAGER, RESOURCE INDUSTRIES**  
**REGULATORY SERVICES**

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

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## 1. Decision summary

Licence L8345/2009/3 is held by Greenstone Resources (WA) Pty Ltd (Licence Holder) for the King of The Hills Gold Mine (KOTH, the Premises), located within part of Mining Tenements M37/67, M37/76, M37/90, M37/201, M37/222, M37/248, M37/330, M37/410, M37/429, M37/449, M37/451, M37/457, M37/547, M37/548, M37/572, M37/573, M37/574 and M37/1105

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L8345/2009/3 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises. The Revised Licence/Works Approval 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 Application summary

On 27 September 2022, the Licence Holder submitted an application to the department to amend Licence L8345/2009/3 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- authorise ongoing operations for infrastructure constructed in Works Approvals W6426/2020/1 and W6525/2021/1 limited to:
  - Stage 6 TSF4 Cells A & B embankment raise (to a height of RL 429.0m);
  - Processing plant and associated infrastructure; and
  - Stage 1 power station.

This amendment is limited only to adding Category 5 and 52 activities onto the existing Licence. No changes to the aspects of the existing Licence relating to Category 6, 54 and 89 have been requested by the Licence Holder. Table 1 below outlines the proposed changes to the existing Licence.

The licence holder initially applied to transfer all infrastructure from works approvals W6426/2020/1 and W6525/2021/1 onto the operating licence. On 2 November 2022, the department confirmed with the licence holder that the scope of this amendment will only extend to infrastructure that is already constructed and compliance demonstrated. Therefore, the operation of TSF5 and Stage 2 power station infrastructure will need to be authorised on the licence through a separate amendment following construction.

**Table 1: Proposed throughput capacity changes**

Category	Current throughput capacity	Proposed throughput capacity	Description of proposed amendment
5	N/A	6, 000, 000 tonnes per annual period	The proposed throughput of ore processing triggers category 5 under Schedule 1 of the <i>Environmental Protection Regulations 1987 (EP Regulations)</i> .
52	N/A	Up to 27.7 mega watts in aggregate	The proposed throughput of where electrical power is generated using a fuel triggers category 52 under Schedule 1 of the <i>Environmental Protection Regulations 1987 (EP Regulations)</i> .

### 2.2.1 Overview of premises

The premises is located over 28km north-west from the town of Leonora on historical Tarmoola pastoral lease. Open pit mining was undertaken between 1989 to 2004 with operations ceasing after a slip on the wall on the north-eastern site of the pit. Underground mining re-commenced in 2011 and then was placed into care and maintenance by Saracen again in February 2017. The premises was purchased by Greenstone Resources, a wholly owned subsidiary of Red5 Limited, in October 2017.

Dewatering began in late 2017 in which the partially filled TSF4 was used as a discharge location. In August 2022 Category 12 crushing and screening activities were removed from the licence and are now being undertaken within a portion of the premises by a third party. During the same amendment, the infrastructure constructed under works approval W6412/2020/1 for a Category 54 sewage facility, and two Category 89 putrescible landfills were amended onto the licence. This infrastructure was constructed to support accommodation for employees on site.

The Licence holder currently holds two other works approval as part of the mine expansion. These are discussed below.

### 2.2.2 Works Approval W6426/2020/1

The Works Approval W6426/2020/1 granted on 23 October 2020, authorised the construction of Category 5 infrastructure of TSF4 Cells A and B embankment to Stage 6 (RL 429.0m), TSF5 Stages 1-4 (RL 412.5m – 422.5m) and a 4 million tonnes (Mt) per annum Carbon-in-leach (CIL) processing plant. The CIL plant infrastructure includes crushing circuit, Run of Mine (ROM) pad, gold room with furnace and ore stockpiles. The associated infrastructure including workshops, offices, accommodation and roads have also been constructed.

The construction of the embankment raises to TSF4 and the CIL processing plant infrastructure were deemed compliant with the conditions of the works approval by the department on 11 April 2022 and 21 June 2022 respectively. As per condition 13 of the works approval, commissioning of the processing plant began with the submission of the compliance documents on the 27 April 2022. Commissioning was authorised for 3 months (until 27 July 2022), however the report was submitted on 13 June 2022, initiating the beginning of time-limited operations (TLO). Due to this, the duration of the TLO period for the processing plant was authorised between 13 June to 10 December 2022.

TLO for TSF4 was authorised from the date of the confirmed compliance on 11 April until 8 October 2022. Due to timing error in commissioning of the infrastructure the department was advised that TSF4 did not receive any tailings prior to 21 June 2022, after the authorisation to use the processing plant. As a result of this, the licence holder applied for an amendment to extend the duration of TLO for TSF4 from the previously authorised 180 days to 243 days to match the same TLO period as the processing plant (end on 10 December 2022). This

amendment was approved on 13 October 2022.

The department received an amendment on 4 November 2022 relating to the construction design of the proposed TSF5. The amendment involved:

- Changes from two cells to a single celled facility;
- Changes to aspects of the underdrainage system;
- Changes to the decant system from a tower to a rock ring; and
- Slight variations to the heights of the embankment raises (no change to final embankment height).

During the assessment process the department was informed that construction of TSF5 was completed to the new design. The works approval holder was advised to withdrawal this amendment application as the department does not grant approvals for the construction of infrastructure retrospectively. This amendment application was withdrawn on 3 April 2023.

The Critical Containment Infrastructure Report for TSF5 was submitted to the department on 28 March 2023. During the assessment of the report, the department noted that a hydrogeological investigation conducted at the premises demonstrated that the non-compliances and deviations to the design did not increase the risk to the environment. Additionally, the department notes comments received from the Department of Mines, Industry Regulation and Safety (DMIRS) that the new design changes were accepted under the approved mining proposal. Due to this, the department has accepted these changes and advised the commencement of time-limited operations for TSF5. The ongoing operations of TSF5 will be assessed under a subsequent licence amendment.

### 2.2.3 Works Approval W6525/2021/1

Works approval W6525/2021/1 authorised the construction of a Category 52 electric power generation plant for an assessed design capacity of 45.3 MW in aggregate approved on 2 June 2021. The Environmental Compliance Report (ECR) for Stage 1 infrastructure was submitted to the department on 28 February 2022. As per condition 4 of this works approval, environmental commissioning was authorised to begin concurrently with the submission of the ECR. TLO commenced after the submission of the environmental commissioning report which was provided to the department on 3 June 2022. Only Stage 1 infrastructure from this works approval which has been constructed and compliance documents provided, will be considered within the scope of this amendment.

The location of this power station only occurs on mining tenements M37/90 and M37/547. It has been constructed in close proximity to the processing plant and associated infrastructure (occurs just north of the tributary and 300m east of the Sullivan creek). The closest groundwater monitoring bore to the power station is MB20-6 located approximately 700m east.

During this works approval, impacts to air quality and noise emissions were considered from operations of the power station to the nearest human receptor which is a Tarmoola pastoral resident located 3km south of the constructed power station. As a result of this analysis, the Delegated Officer determined that the impacts of noise and air emissions to this receptor will not be significant, and no further controls were required.

### 2.2.4 TSF4 Cells A and B Background

Historically, there were significant seepage issues occurring from the eastern margin of TSF4 Cell A which triggered the installation and use of recovery bores to control this. When the premises went into care and maintenance, TSF4 was only partially filled. When dewatering began in late 2017, TSF4 Cell B was used as a discharge location. In the 2020-2021 Annual Environmental Report (AER), standing water levels (SWL) in bores to the north and east of Cell

B were observed to be increasing. It was advised that a total of 677,192kL dewater was discharged into TSF4 Cell B during this period. As a response to this, the licence holder advised that the dewatering activities had been revised and reduced accordingly to prevent further mounding. The Licence Holder advised that Cell B will cease to be a dewatering discharge location once TSF4 is recommissioned as an operational tailings deposition location. The Stage 6 embankment (approved in this licence amendment) will be the final height for TSF4, with future deposition planned to be deposited in TSF5 once constructed.

### 2.2.5 TSF4 Cells A and B Operation

TSF Operations Manual will be developed and used onsite for operation and management for TSF4 and TSF5. At a minimum, the following will be implemented:

- Upstream spigot deposition of tailings from perimeter embankment crest;
- The supernatant pond is to be maintained at the decant tower location;
- The supernatant pond volume is to be maintained at a minimum; and
- No external water is to be pumped / stored within the TSF.

There are no expected departures from the operational requirements conditioned within the works approval. The tailings will be transported from the processing circuit to TSF4 through HDPE constructed pipeline and will be deposited into the facility sub-aerially.

Inspection requirements conditioned within the works approval will be transferred to the licence to ensure ongoing inspections of all tailings and return water pipelines, embankment freeboard and the tailings decant pond.

Additional groundwater monitoring bore locations and parameters will be included in the ambient groundwater monitoring program to ensure that any impacts due to seepage from TSF4 will be recorded.

### 2.2.6 Power Generating Station

The Power station constructed under Stage 1 infrastructure of W6525/2021/1 to be included onto the operational licence of this premises are as followed:

- 4 x J642 reciprocating gas generators, each with a maximum output of no more than 4.4MW;
- 3 x J620 reciprocating gas generators, each with a maximum output of no more than 3.36MW;
- 2 x Cummins QSX15-G8 diesel powered generators;
- 1 x 20,000L lubrication oil storage tank;
- 1 x 20,000L waste oil storage tank;
- 1 x 68,000L diesel storage tank;
- 1 x Transformer; and
- 1 x Oil-water separator.

The department notes that W6525/2021/1 was assessed for a design capacity of up to 45.3 megawatts in aggregate. As this licence amendment will only authorise operations for Stage 1 infrastructure, the assessed design capacity of 27.7 megawatts in aggregate will be added on the licence to be reflective of this. The capacity can be revised in the future when Stage 2 infrastructure will be added on the licence.

The licence holder confirmed it is in a contractual power supply agreement with Zenith Pacific (KOTH) Pty Ltd. The contract entails that the Licence Holder is the owner of the King of the Hills

Gold Operation power station site due to the right to occupy under the Mining Lease, however Zenith has been granted a right to occupy that site and is responsible for designing, owning, construction, operating and maintaining the power station facilities. The Licence Holder has affirmed that they are the legal occupier's of the premises.

## 2.3 Mining Act 1978

The Licence Holder has advised that a Mining Proposal (Registration ID: 101387) has been assessed by DMIRS to incorporate the proposed operations and approved on 25 July 2022.

## 3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020).

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

### 3.1 Source-pathways and receptors

#### 3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Licence Holder controls**

Emission	Sources	Potential pathways	Proposed controls
<b>Operation (Category 5) Processing plant and TSF4</b>			
Noise	Crushing of ore prior to entering process	Air / windborne pathway	<ul style="list-style-type: none"> <li>Vehicles and equipment maintained to operate efficiently.</li> </ul>
Dust			<ul style="list-style-type: none"> <li>Water carts or fixed sprays to water down unsealed roads and ROM pad; and</li> <li>Sprays fitted at tipping area of crusher.</li> <li></li> </ul>
Emissions from gold room furnace stack	Operation of Carbon-in-leach processing plant	Direct discharge to land	<ul style="list-style-type: none"> <li>Emissions from ore processing and associated activities will be detailed in the National Pollutant Inventory (NPI) report submitted annually to the Department of Agriculture, Water and the Environment (DAWE).</li> </ul>
Contaminated stormwater			<ul style="list-style-type: none"> <li>Processing activities will occur within bunded areas that drain to sediment control ponds;</li> <li>Diversion drains to direct potentially contaminated stormwater or spills from the processing area are captured in a separate pond; and</li> <li>Contents of potentially contaminated</li> </ul>



Emission	Sources	Potential pathways	Proposed controls
			stormwater to either be recovered and re-used in processing or be treated as required.
Tailings discharge	Tailings seepage from TSF	Seepage through TSF floor and embankment to groundwater	<ul style="list-style-type: none"> <li>• TSF will undergo annual audits by a suitably qualified geotechnical engineer;</li> <li>• Monitoring bores have been installed downstream between the TSF and surface water receptor;</li> <li>• Supernatant pond size reduced as much as possible – decant water will be re-used for process water;</li> <li>• Groundwater monitoring for quality and standing water levels (SWL) taken at quarterly basis in bores around TSF4;</li> <li>• Toe drain will capture potential lateral seepage from embankment and drain into collection sump to be pumped into supernatant pond; and</li> <li>• Vibrating wire piezometers (VWP) and standpipe piezometers installed in the walls of the TSF4.</li> </ul>
	Overtopping of TSF		<ul style="list-style-type: none"> <li>• Freeboard at TSF to be maintained to allow capture of rainfall from a 1% annual exceedance probability (AEP) 75 hour event; and</li> <li>• Daily inspections.</li> </ul>
Process / return water	Pipeline failure	Direct discharge to land	<ul style="list-style-type: none"> <li>• Pipelines located within bunds to capture spills and ruptures;</li> <li>• Scour pits and sumps to be constructed along bunds to contain spills;</li> <li>• Tailings and return water pipelines to be fitted with flow and leak detection sensors;</li> <li>• Inspections of pipeline integrity; and</li> <li>• Isolated valves have been incorporated.</li> </ul>
	Overtopping of Process / raw pond		<ul style="list-style-type: none"> <li>• Operational freeboard of 0.3m maintained on all ponds;</li> <li>• Lined with HDPE; and</li> <li>• Water quality and level monitoring on water storages and collection ponds.</li> </ul>
Tailings discharge	Embankment failure	Direct discharge to land	<ul style="list-style-type: none"> <li>• The phreatic surface in embankments will be monitored via VWP and Standpipe piezometers; and</li> <li>• Survey station pins installed along embankment crests to monitor movements and assess embankment integrity.</li> </ul>
<b>Operation (Category 52) Power generation plant – Stage 1</b>			
Emission from fossil fuel	Operation of diesel & gas-powered	Air / windborne pathway	<ul style="list-style-type: none"> <li>• Exhaust stacks constructed at a minimum height of 8.5 metres above ground level;</li> </ul>

Emission	Sources	Potential pathways	Proposed controls
combustion	generators		<ul style="list-style-type: none"> <li>Power generator sets will be maintained and serviced to manufacturer's specifications to ensure efficient running and optimum fuel consumption, thereby minimizing exhaust emissions; and</li> <li>Diesel engines will be serviced to maintain efficiency and minimize harmful combustion products.</li> </ul>
Noise			<ul style="list-style-type: none"> <li>Generators have exhaust mufflers; and</li> <li>Air compressors housed in sound attenuating enclosure.</li> </ul>
Chemical & Hydrocarbon spills	Storage & replenishment of chemicals and hydrocarbons	Direct discharge to land	<ul style="list-style-type: none"> <li>Storage tanks located within concrete bunds and self-bunded; and</li> <li>Spills and leaks will be captured and appropriately managed through the use of hydrocarbon absorbent materials;</li> </ul>
Contaminated stormwater			<ul style="list-style-type: none"> <li>Where contaminants area likely to include hydrocarbons, water will be directed to an oil water separation system;</li> <li>Vehicle maintenance to occur on concrete pads;</li> <li>Diversion bunds to separate clean water from potentially contaminated water;</li> <li>Stormwater from operational areas will be collected and either reused within the operations or have contaminants removed prior to release to the environment i.e use for dust suppression; and</li> <li>Vehicles will be washdown in purposed built facility where wash down water will be processed to separate solids and hydrocarbons from water.</li> </ul>

### 3.1.2 Receptors

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

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental siting* (DWER 2020)).

**Table 3: Sensitive human and environmental receptors and distance from prescribed activity**

Human receptors	Distance from prescribed activity
Pastoralist residence	<p>Located approximately 3km south of the processing plant and power station.</p> <p><b>Screened out as a sensitive receptor due to distance – no pathway exists given the distance.</b></p>
Environmental receptors	Distance from prescribed activity
Threatened / priority flora	<p>Department desktop survey has identified:</p> <ul style="list-style-type: none"> <li>• <i>Stenathemum patens</i> (P1) located within 2.6km of TSF4 Cell B.</li> </ul>
Priority 1 Public Drinking Water Source Area: Leonora drinking water reserve	<p>Approximately 6km south-east of TSF4.</p> <p><b>Screened out as a sensitive receptor due to hydrogeology of the area – groundwater movement reporting westerly towards creek line.</b></p>
Groundwater	<p>Located on Goldfields Proclaimed Groundwater Area</p> <p>Depths to groundwater monitored around TSF4 range from 6.64mbgl (east of TSF4) – 15.96mbgl (near tributary to Sullivan creek – southern border of proposed TSF5) for SWL in monitoring bores, as per the TLO Report submitted to the department during monitoring conducted under W6426/2020/1 during July 2022.</p> <p>Major tributary of the Sullivan Creek paleovalley occurs immediately south of the TSFs and smaller northerly branches extending under the footprint of TSF.</p> <p>Historical information has indicated that groundwater levels were approximately 45 metres below ground level prior to mining activities.</p> <p>There are no known nearby water users.</p>
Surface water bodies	<p>Surface water drains to the Sullivan Creek, a non-perennial water course (800m away from processing plant) from the tributary located 300m south of processing plant and 350m south of TSF4.</p> <p>Sullivan Creek drains into Lake Raeside located over 17km south-west of the activities.</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 in-complete they have not been considered further in the risk assessment.

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

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

The Revised Licence L8345/2020/3 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. TSF 4 (Stage 6) Cells A and B, Processing plant and Stage 1 of Power Generation Plant.

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

**Table 4: Risk assessment of potential emissions and discharges from the Premises during operation**

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
<b>Operation (Category 5) of Processing Plant</b>								
Source: • Operation of processing plant Activities: • Crushing plant, conveyors, stockpiles	Dust	<b>Pathway:</b> air / windborne pathway <b>Impact:</b> smothering of vegetation and contamination of surface water lines	Adjacent native vegetation Surface water lines (Tributaries to Sullivan Creek located 300m south of Processing plant)		C = Slight L = Rare <b>Low Risk</b>	Y	Condition 1: operational requirements of infrastructure	Licence holder proposed controls to operate water sprays at the plant will be conditioned. The Delegated Officer has determined this to be sufficient in mitigating the risk of dust emission on receptors.
Source: • Material stockpiles from ROM pad; and • Hydrocarbon spills	Contaminated stormwater	<b>Pathway:</b> air / windborne pathway <b>Impact:</b> contamination of soil / vegetation and water lines with heavy metals and sediments	Adjacent native vegetation Surface water lines (Tributaries to Sullivan Creek located 300m south of Processing plant)	Refer to section 3.1.1	C = Minor L = Rare <b>Low Risk</b>	Y	Condition 1: operational requirements of infrastructure	As per W6426/2020/1, the licence holder was required to construct surface stormwater management system to capture and divert stormwater around the plant area. Assessment of the Environmental Compliance document has confirmed that the stormwater management infrastructure has been constructed in a manner that adequately manages the risk of this runoff. The licence holder previous commitments to ensure separation of potentially contaminated and clean water will be conditioned. Additionally, the requirements to re-use captured run-off or treat will be conditioned The Delegated Officer considers this to be sufficient in the risk of contaminated stormwater runoff from the plant area.
<b>Operation (Category 5) of TSF 4</b>								
Source: • Operation of TSF Activities: • Deposition of tailings at facility	Leachate from TSF	<b>Pathway:</b> seepage through TSF walls and floor <b>Impact:</b> causing mounding of groundwater table resulting in stress / death of vegetation at surface and nearby water lines	Adjacent native vegetation Palaeochannels (Tributaries to Sullivan Creek located 350m south of TSF4)	Refer to section 3.1.1	C = Moderate L = Possible <b>Medium Risk</b>	N	Condition 1: operational requirements of infrastructure	Refer to Section 3.3
		<b>Pathway:</b> seepage through TSF and walls <b>Impact:</b> to groundwater level and quality	Adjacent native vegetation Groundwater (RIWI Goldfields groundwater area – 6.64-15.98 mbgl)	Refer to section 3.1.1	C = Moderate L = Possible <b>Medium Risk</b>	N	Condition 13: GW monitoring and <b>6 mbgl SWL trigger limit</b> <b>Condition 14: SWL trigger seepage management</b> <b>Condition 22 &amp; 23: construction of additional monitoring bores</b>	

Risk Event					Risk rating <sup>1</sup> C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions <sup>2</sup> of licence	Justification for additional regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
	Tailings / return water discharge from pipeline leaks	<b>Pathway:</b> direct discharge to land <b>Impact:</b> contamination of soils and surface water	Surface water lines (Tributaries to Sullivan Creek located 350m south of TSF4) Adjacent native vegetation		C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1: operational requirements of infrastructure Condition 2: pipeline infrastructure Condition 5: inspections	Proposed controls and existing conditions required pipelines to be constructed to reduce the risk of spills in the case of rupture. The inspection of pipelines integrity will be conditioned into the licence to ensure they are observed to be in working order to minimise the chance of rupture.
	Tailings discharge from TSF overtopping	<b>Pathway:</b> direct discharge to land <b>Impact:</b> contamination of soils and surface water	Surface water lines (Tributaries to Sullivan Creek located 350m south of TSF4) Adjacent native vegetation		C = Minor L = Unlikely <b>Medium Risk</b>	Y	Condition 1: operational requirements of infrastructure Condition 4: freeboard Condition 5: inspections Condition 11: tailings volumetric monitoring	The Delegated Officer has determined that the freeboard limits, inspections and process monitoring will be sufficient in mitigating the risk of overtopping.
	Tailings discharge from embankment failure	<b>Pathway:</b> direct discharge to land <b>Impact:</b> contamination of soils and surface water	Surface water lines (Tributaries to Sullivan Creek located 350m south of TSF4) Adjacent native vegetation	Refer to section 3.1.1	C = Moderate L = Unlikely <b>Medium Risk</b>	Y	Condition 5: inspections	It is noted that embankment stability is assessed and conditioned under DMIRS. The Delegated Officer has determined no additional regulatory controls are required.
<b>Operation (Category 52) Power generation plant – Stage 1</b>								
Source: • Storage and replenishment of chemicals, hydrocarbons and waste hydrocarbons	Chemical and hydrocarbon spills	<b>Pathway:</b> seepage through soil <b>Impact:</b> contamination of groundwater	Groundwater (RIWI Goldfields groundwater area – 6.64-15.98 mbgl)	Refer to section 3.1.1	C = Minor L = Rare <b>Low Risk</b>	Y	Condition 1: operational requirement of infrastructure Condition 5: inspection of storage bunding integrity	Considering the distance to groundwater and the construction requirements to have the storage facilities correctly bunded will sufficiently manage the risk of contamination to groundwater from chemical spills.
	Contaminated stormwater	<b>Pathway:</b> contaminated stormwater <b>Impact:</b> contamination of adjacent vegetation / soil and surface water	Surface water lines (Tributaries to Sullivan Creek located 300m south of Power plant) Adjacent native vegetation	Refer to section 3.1.1	C = Minor L = Unlikely <b>Medium Risk</b>			Controls from the works approval that required all containment infrastructure to be bunded will be re-conditioned within the licence to be maintained as such, and inspection requirements to ensure integrity of bunding is sufficient in containing any spills and subsequently the contaminated stormwater. The Delegated Officer considers these controls to be sufficient in mitigating any risk to nearby receptors.

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

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

### 3.3 Detailed risk assessment seepage from TSF4 Cells A and B

#### 3.3.1 Background

The premises lies within the Sullivan Creek catchment which drains into Lake Raeside drainage located approximately 15km south of the premises. All surface drainage of the area reports via tributaries to ephemeral and minor Sullivan Creek which flows infrequently. There is a tributary to this creek located 300m south of the processing plant which flows only during high rainfall events. As per the requirements of works approval W6426/2020/1, prior to the construction of the TSF5, a hydrogeological investigation was to take place in order to determine the extent of the paleochannel tributaries of the proposed TSF5 footprint and how they would affect the stability and potential seepage expected from TSF5. During the drilling of the monitoring bores associated with TSF5 and interpretation of the data (Rockwater, 2022), it was concluded that the footprint of TSF4 has underlying tertiary palaeovalleys (see Figure 1).

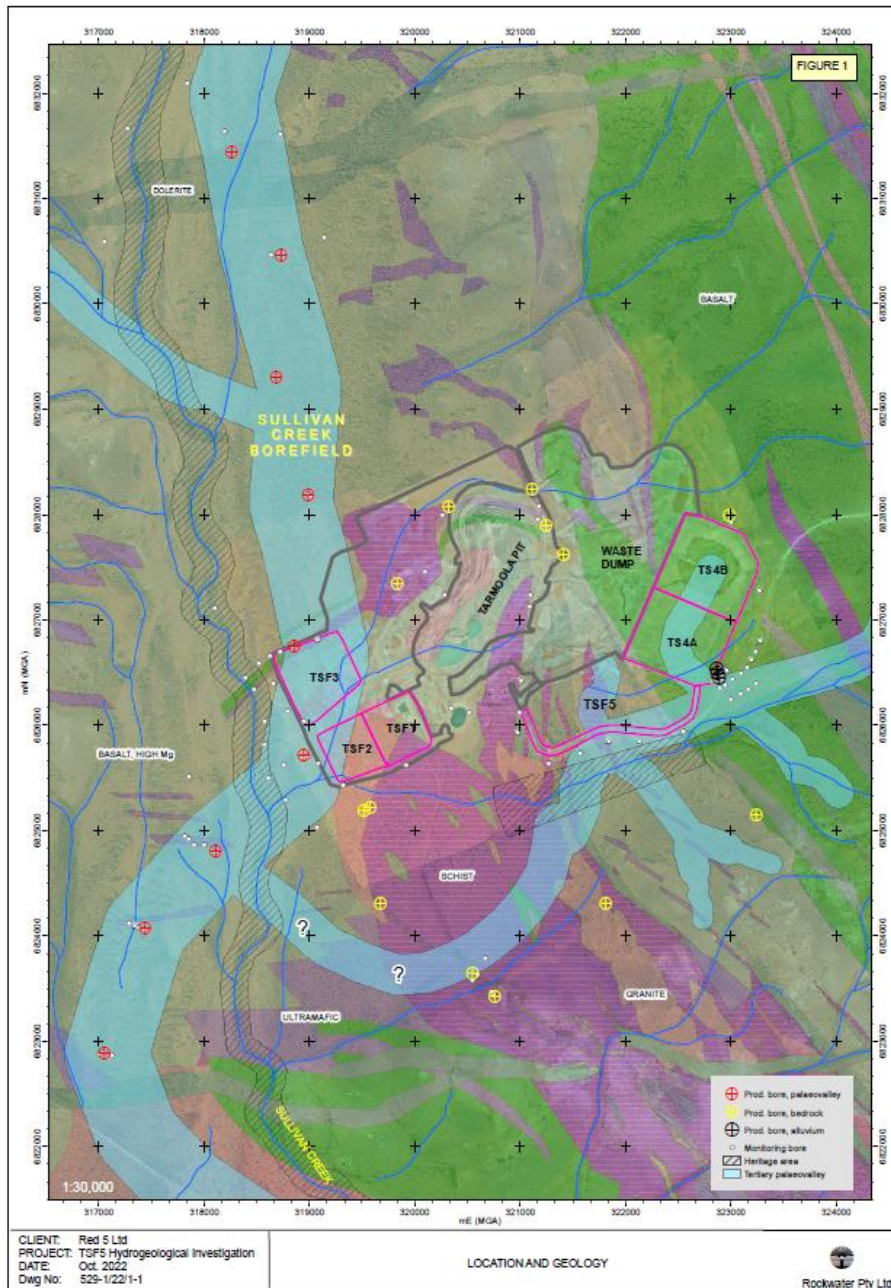


Figure 1: Conceptual map of the hydrogeological environment of the premises (Rockwater, 2022)

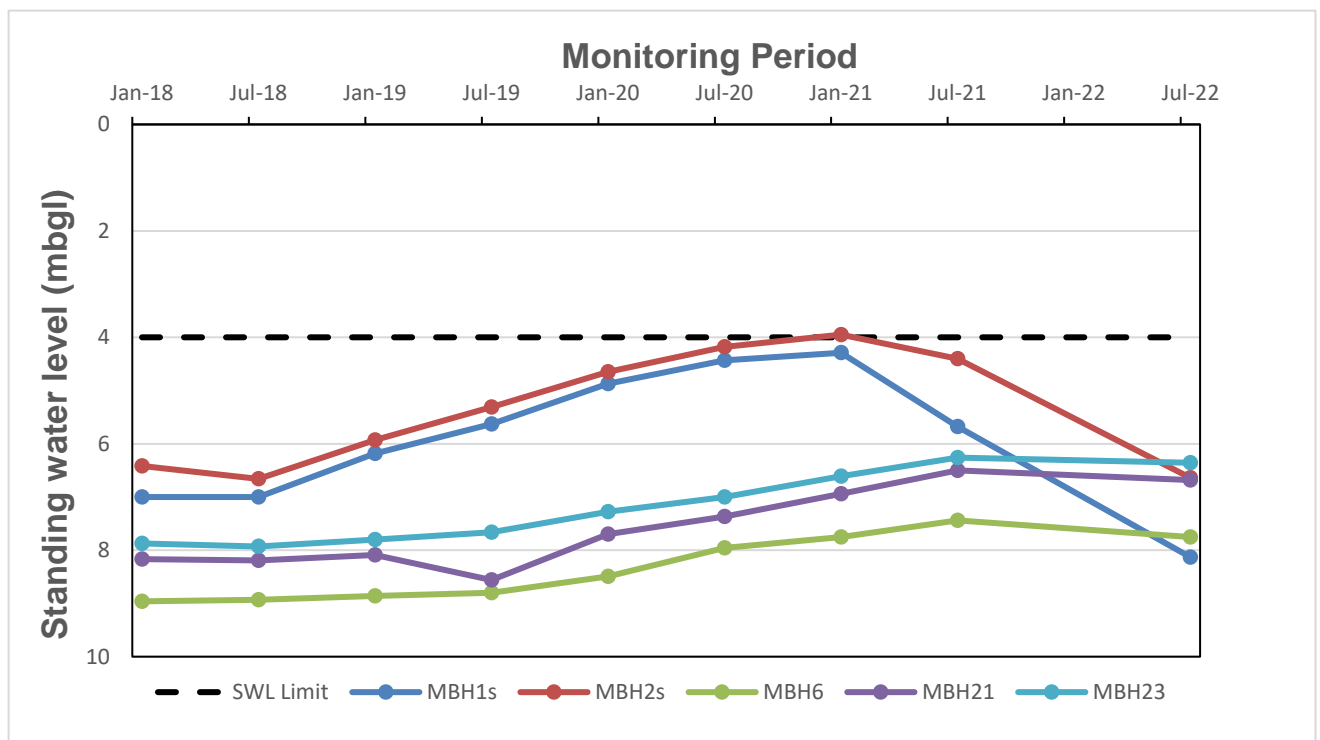
The hydrogeological studies have determined that there are paleochannel tributaries that lie to the south and underneath the footprint of TSF4 that may cause a more permeable and preferential pathway for seepage to travel in the groundwater aquifers leading towards the Sullivan creek water ways.

There is little data on the groundwater of the area during the time TSF4 was last operated as a tailings storage facility. There is known historical seepage to have occurred in the southern area which triggered the installation of recovery bores that was recorded to be successful in controlling the extent of that seepage. Analysis of drawdown from a TSF4 Cell A recovery bore suggests higher permeability in this area than what was measured in slug-tests in newly installed bores south of TSF5. These tests showed the average permeabilities of the weather mafic bedrock, palaeovalley clay and ferruginous gravels are approximately 0.045, 0.055 and 0.56 m/d respectively. From the geology profile an intervening layer of clay was identified which restricts the zone of interest for seepage and management for TSF5 is restricted to the top 20m of soil.

### Groundwater levels

Seepage from TSFs that cause mounding of natural groundwater levels that can impact adjacent native vegetation and contaminate local surface and underground water channels. The increase of the groundwater levels can impact the root zone of vegetation. As discussed above, the baseline groundwater qualities appear to be more brackish which has been considered to be less of a risk to vegetation health than highly saline groundwater.

TSF4 has only been recently recommissioned and has not been used to deposit mine tailings since being put into care and maintenance in 2016. Due to this there is very little historical data regarding standing water levels around the premises. It was advised that groundwater levels were approximately 45 mbgl prior to the impacts of historical mining activities. As noted above, in 2017 TSF4 Cell B was used as a discharge location for dewatering activities. As per previous licence conditions, some existing bores surrounding TSF4 were required to be monitored 6-monthly as part of the AER. As shown in Figure 2 there has been an observed increase in standing water levels between mid-2018 to mid-2021 in bores MBH1 and MBH2 that are located to the north and east of TSF4 Cell B. In January 2021, SWL exceeded the 4 meters below



**Figure 2: Standing water levels of monitoring bores located around TSF4**

ground level (mbgl) limit in bore MBH2. During the AER the licence holder made commitments to reduce the impacts caused by this dewatering activity and levels can appear to drop from early 2021. Required during Time-Limited Operations of Works Approval W6426/2020/1, the bores were monitored in July 2022 and all bores were below the limit level with most standing between 6 to 8 mbgl. Ongoing monitoring is vital to record trends of groundwater mounding.

New monitoring bores were installed as part of the approvals for W6426/2020/1, in which seven sets of clustered shallow and deep bores were installed along the southern edge of the proposed TSF5 footprint.

Monitoring in these bores which are located along the tributary can assess possible seepage impacts that may travel downstream to the Sullivan Creek system. During the TLO report monitoring period, the standing water level in those bores ranged from 12 to 16 mbgl. Monitoring bores located downstream from TSF4 within the paleochannel (located along the southern embankment of TSF5) will inform the extent of any groundwater mounding which may potentially impact the creek ecosystem.

### Groundwater Quality

During time-limited operation, the groundwater quality was recorded in the existing monitoring bores located around TSF4. The records show that the current groundwater pH ranges from 6.8 to 7, and is generally brackish with salinity ranging from Total Dissolved Solids (TDS) 430 to 57000 mg/L. The suite of metals recorded during this time did not show any elevated levels of metals within the ambient groundwater after the commencement of TLO. However, ongoing groundwater monitoring is crucial to observe the residual effects of seepage during and after deposition of tailings into TSF4.

New monitoring bores were installed as part of the construction for TSF5 ambient water quality was recorded during time-limited operations to provide background data in these bores that can be used in the future as a comparable data. The pH in the bores ranged from 7.2 to 9.1 and salinity range from 580 mg/L TDS to 4900 mg/L TDS.

The department notes that several sites within the footprint of the activity on this premises have been classified as 'Possibly contaminated – investigation required' on 6 September 2016. The licence holder at the time responded with information from a Suspected Contaminated Sites report from 2007 regarding incidents that may have resulted in contamination at the premises. One of these included a case of tailings line spill. The possibility of pre-existing contamination issues has been noted in samples considered to be baseline data. However, as mentioned before, this premises is quite historical with previous activities not clearly recorded or groundwater data available from this time and therefore inferring the baseline quality of the area is quite difficult.

### **3.3.2 Emission source**

Seepage occurs through the base and embankments of the TSF during the drying process of the tailings slurry deposition. Composition of the tailings can be a good indication on potential seepage, however, is not considered accurate in determining the actual risk of the tailings and the level of contamination that may be expected from seepage.

During TLO for TSF4, the geochemical characteristics of the tailings slurry liquor were analysed for a suite of metals, pH and salinity from 10 samples of the course of 5 days. An average taken from the 10 samples showed a pH of 8.81 and salinity with a TDS of 6170 mg/L. After comparing the metal concentrations of the slurry to ANZECC (2000) short-term irrigation guidelines, some elements exceeded the limits. Cobalt had an average reading of 0.5mg/L (ANZECC limit 0.1mg/L), Copper had an average reading of 8.34mg/L (ANZECC limit of 5mg/L), and Mercury had an average reading of 0.003mg/L (ANZECC limit of 0.002mg/L). Noting that ANZECC value is for irrigation purposes, these exceedances are not considered entirely applicable to assess the impact to groundwater receptors but can be used as a reference and to understand acceptability of metal concentrations in uses of water and how this may influence the considered



risk of potential seepage.

Decant water is collected from the supernatant pond on the surface of the TSF and is often pumped back to the circuit to be re-used for processing. The size of the supernatant pond is a result of the physical characteristics of the tailings (moisture content) and the climatic characteristics of the premises including but not limited to rainfall and evaporation rates. Due to this, the quality of the decant water can be used to estimate the characteristics of the seepage expected from the TSF. During the TLO for TSF4 the licence holder was required to provide samples from the decant water. pH levels ranged from 7.70 to 8.88 and TDS from 1, 410 to 13,100 mg/L. It is noted that salinity levels were observed to increase throughout the duration of TLO which could mean seepage salinity trends may increase and have impacts to the current brackish water quality.

The increase of concentration of heavy metals were also noted to increase throughout the duration of TLO, but most remaining at relatively low levels. Copper was noted to have exceeded the ANZECC limit of 5mg/L, with readings in the most recent decant samples reaching 7.88mg/L. Weak Acid Dissociable (WAD) cyanide in the most recent samples reached levels of 16.8mg/L.

### 3.3.3 Licence Holder's controls

The licence holder has proposed controls to mitigate and reduce the impacts of seepage to the surrounding environment, as there are no existing licence conditions regarding these activities. The proposed controls to ensure that the risk of seepage will be adequately managed include:

- Maintaining the size of the supernatant pond to be as reduced as much possible;
- Quarterly monitoring of groundwater quality and standing water levels;
- TSF to undergo annual audits by a suitably qualified geotechnical engineer;
- Toe drain to capture potential lateral seepage from the embankment and drain into collection sump and pumped back into supernatant pond; and
- Construction of 7 sets (shallow and deep) of monitoring bores along southern border of TSF5 and within the area of the paleochannels leading upstream to Sullivan Creek located west to the premises.

As part of the construction of the embankment lift of TSF4 Cells A & B in works approval W6426/2020/1, an additional 6 standpipes were installed along the embankment of TSF4. Although monitoring of these standpipes can capture any lateral leakage from the dam wall and can be used as a good indication for seepage through the walls, it does not demonstrate the impact of the emissions at the receptor (groundwater) and therefore the monitoring of these standpipes will not be conditioned into the licence.

### 3.3.4 Department's risk assessment of seepage on receptors

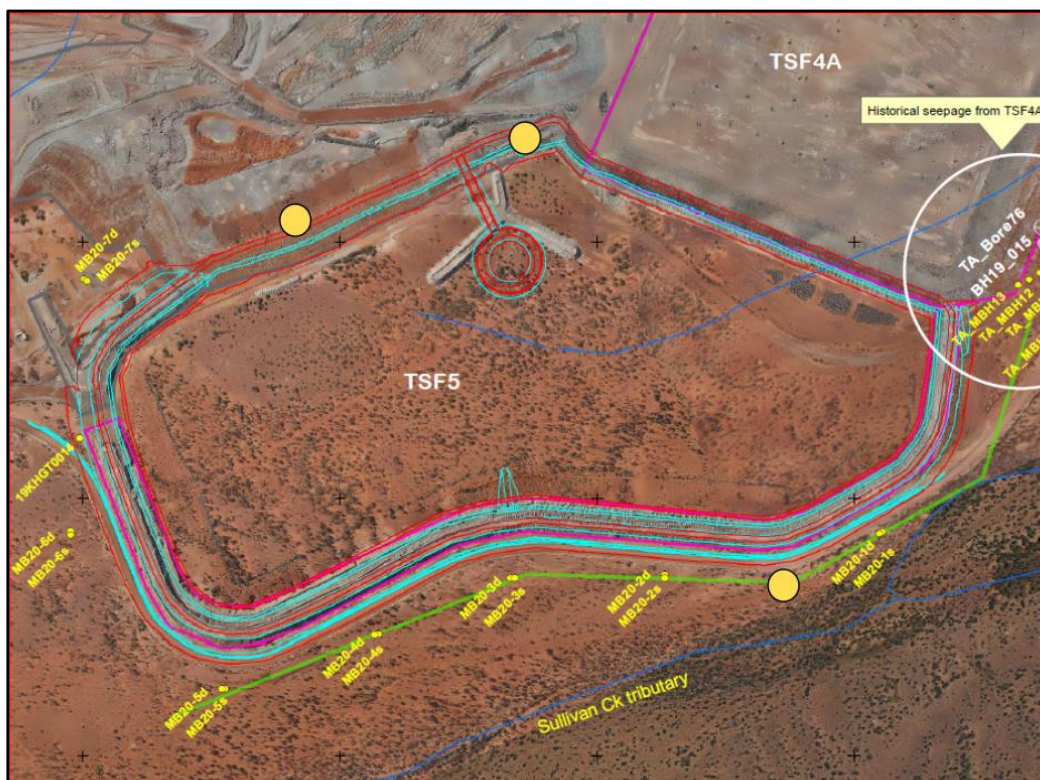
Technical advice was sought from the department's Principal Hydrogeologist to determine the risk of seepage to surface water receptors. It was advised that due to the slow groundwater flowrate and the effects of natural attenuation processes in the aquifer, it is unlikely that seepage contamination would reach Lake Raeside.

The Delegated Officer has assessed the risk of seepage associated with the operation of Stage 6 TSF4 Cells A and B. Given the nature of the paddock style TSF and historical recordings from the deposition into TSF4, the likelihood of seepage to occur has been rated as **possible**. The increase to standing water levels can result in mounding around the TSF to a height where groundwater can impact the root zone of surrounding vegetation. Current groundwater levels have been recorded below the 4 mbgl limit, however this has been nearly breached in the past when Cell B was used as a dewatering discharge location.

Internal technical advice indicates that the presence of ferruginous gravel will limit the extent to which mounding could occur and that the most significant risk from seepage is what appears to be groundwater dependent vegetation near the south-eastern margin of the facility. Due to this the Delegated officer has determined the consequence of seepage to nearby vegetation to be **moderate**.

The risk of seepage to receptors has been rated as **medium**.

The department recommends that three additional monitoring bores are constructed around TSF5 (see Figure 3) to better define the extent, shape and height of the groundwater mounding. The recommended bore on the southern boundary will detect groundwater flow that may impact this relatively dense vegetation. The Delegated Officer has decided to condition the installation and monitoring of these bores as part of this licence amendment.



**Figure 3: Additional regulatory controls: Installation and monitoring of 3 additional bores adjacent to TSF5 (shown as yellow circles)**

The Delegated Officer has conditioned the licence holder's proposed controls to implement a groundwater monitoring program for existing and newly constructed TSF5 bores. The licence holder did not specify the parameters of the ongoing of the proposed ongoing monitoring program, only to mention that the monitoring frequency will be shortened. The department has therefore included all active monitoring bores and relevant parameters including electrical conductivity and a suite of metal as to the monitoring program. Given the existing mounding issues at the premises, the Delegated Officer will implement the addition of a trigger limit of 6 mbgl in all monitoring bores and condition an action requirement for the licence holder to notify the department and implement a seepage management plan should the trigger be reached.

WAD cyanide sampling will be added into the monitoring to ensure these increasing levels recorded in the decant during TLO do not translate to high levels in the seepage which could increase the risk of this discharge in the environment. Depending on the readings found within groundwater samples, future changes may include a limit of WAD cyanide from monitoring samples.

Process monitoring conditions will be included to record the volumes of tailings deposited into TSF4 and water recovered from the decant.

The department notes that the current works approval authorizes the construction for a new TSF5 located to the south-west of the TSF4 Cell A embankment. The construction and operation of a new tailings storage facility has the possibility to exacerbate groundwater mounding and possible contamination. Trends of groundwater level and the quality should be revised in future amendments as more samples become available to understand the impacts of these activities.

## 4. Consultation

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

**Table 5: Consultation**

Consultation method	Comments received	Department response
Local Government Authority (Shire of Leonora) advised of proposal 23 November 2022.	None received.	N/A.
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 23 November 2022	None received.	N/A.
Department of Planning, Lands and Heritage advised of proposal 23 November 2022.	None received.	N/A.
Licence Holder was provided with draft amendment on 22 May 2023.	Refer to Appendix 1.	Refer to Appendix 1.

## 5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### 5.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

**Table 6: Summary of licence amendments**

Condition no.	Proposed amendments
-	Changes to cover page to include addition of Category 5 and 52 activities.
-	Changing condition wording from “shall” to “must”, consistent with department templates.
-	Changes to Instrument log to include associated works approvals and current amendment.
Condition 1	Changes to condition to include operational requirements of infrastructure.
Condition 1	Changes to Table 1 to include Gold processing plant and associated infrastructure, TSF Cells A and B, and Stage 1 infrastructure of the power station plant.
Condition 2	This condition has been removed and specifications for dewatering pipelines have now been added into Table 1.
Condition 4	Addition of Table 2 to include inspections on premises infrastructure to maintain an appropriate level of environmental protection.
Condition 5	Changes to Table 2 to: <ul style="list-style-type: none"> <li>• include authorised discharge location: <ul style="list-style-type: none"> <li>○ for tailings deposition into TSF4 Cell A and B; and</li> <li>○ for air emissions from Power station Stage 1 gas generators; and</li> </ul> </li> <li>• remove authorised discharge location: <ul style="list-style-type: none"> <li>○ for mine dewater into TSF 4 Cell B.</li> </ul> </li> </ul>
Former condition 7	Removal of redundant condition.
Condition 9	Changes to Table 5 to remove monitoring of mine dewater volume into TSF 4 Cell B.
Condition 10, Table 6	New condition to monitor volumes of tailings deposited in TSF4 and volumes of water recovered from TSF4 supernatant pond.
Condition 12, Table 8	Updates to monitoring program for ambient groundwater to include new monitoring bores, new parameters, and frequency changed to quarterly. Addition of 6 mbgl trigger level for standing water level.
Condition 13	Standing water level exceedance and seepage management plan.
Conditions 17 & 20	Updating submission date for ACCR and AER to match mass amendment notice date and to change reporting requirements.
Condition 20, Table 10	Changes to Table 10 to include the results from process monitoring (Condition 11) as a reporting requirement in the AER.
Conditions 21 & 22	Additional regulatory controls for the construction of new monitoring bores.
Definitions, Table 11	Addition of new definitions
New Figures	Figure 1 – Map of the boundary of the prescribed premises Figure 2 – Processing plant layout Figure 3 – Processing area stormwater infrastructure layout

Condition no.	Proposed amendments
	Figure 4 – Tailings pipeline Figure 5 – Power station generators layout Figure 7 – Dewatering pipelines Figure 10 – TSF5 groundwater monitoring bores Figure 11 – Monitoring bores to be constructed
Condition numbering	Updated condition numbering to accommodate for addition of new and removal of conditions.
Table numbering	Updated table numbering to accommodate for addition of new tables.
Figure numbering	Updated figure numbering to accommodate for addition of new figures.

**Table 7: Consolidation of licence conditions in this amendment**

Existing condition	Condition summary	Revised licence condition	Conversion notes
Schedule 2	Infrastructure and equipment requirements for WWTP and Irrigation spray fields	Condition 1, Table 1	Transferred the conditions in this table into main body of the licence to be revised to current licensing format.
Schedule 3	Emissions and discharge monitoring during operations	Condition 11, Table 7	Transferred the monitoring requirements in this table into main body of the licence to be revised to current licensing format.

## References

1. Australian and New Zealand Environment and Conservation Council (ANZECC) 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality: The Guidelines*, Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Rockwater Hydrogeological and Environmental Consultants (Rockwater) 2022, *King of the Hills Gold Mine: TSF5 Hydrogeological Investigation*, Perth, Western Australia.

## Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Table 2 Power station storage tank bunding – visual integrity inspection required weekly	Red5 requests to change of the visual integrity inspection frequency to monthly commensurate to the extremely low likelihood of these tanks leaking.	After consideration of the risk and likelihood of spills from the storage failure, the department has accepted the change of frequency to monthly
Condition 13 Note 1: Monitoring bores should be kept separate from seepage recovery to ensure continuity and reliability of monitoring data. Conversion of monitoring bores into seepage recovery bores will therefore not be accepted.	Red5 interprets that condition 13 requires a suitably qualified hydrogeologist to develop a seepage management plan to the CEO within 3 months of the exceedance occurring.  Note 1 is at odds with the understanding this suitably qualified hydrogeologist is competent, as it does not allow a suitably qualified hydrogeologist to make the proper assessment with the best information available at the time (which may or may not recommend the conversion of monitoring bores to seepage recovery bores, the installation of new monitoring or seepage recovery bores etc.)	The wording of the conditions requires the suitably qualified hydrogeologist to develop a seepage management plan within the parameters of Note 1, i.e. without the conversion of monitoring bores into seepage recovery bores. This Note is in place so that any seepage recovery does not interfere with the reliability of the monitoring data that directly impacts the requirements for a plan to be put into place.
Table 10 Annual Environmental Reporting requirement	Red5 understands the topic of theoretical mounding scenarios contributes to the medium risk rating, which drives the change in reporting frequency. If this is a primary driver, Red5 proposes maintaining a low-risk rating in the immediate term, with an open invitation for a licence amendment to a medium-risk rating (annual reporting) for any triggering of the 4m limit – keeping regulatory reporting and review requirements commensurate to field conditions and potential for environmental impacts.	The department notes that the change to reporting requirements is not directly related to the risks associated with seepage and mounding from TSFs. The reporting requirements for this premises were reduced to biennially when operations were coming out of care and maintenance with only Categories 6, 54 and 89. This was re-assessed as the addition of higher risk activities are now occurring on the premises. The department considers several factors for a risk-rating of the premises which involve past compliance, production capacity and estimated future developments at the premises. Due to these factors, the departments does not accept this request and reporting requirements for the Environmental Report will remain as annual.
Table 11 Groundwater Monitoring well construction requirements	Red5 requests the timeframe period be changed from 3 months to 4 months.	The department accepts this change.

Licence: L8345/2009/3

## Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY			
<b>Application type</b>			
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L8345/2009/3
		Relevant works approval number:	W6426/2020/1 W6525/2021/1
Date application received		27 September 2022	
<b>Applicant and Premises details</b>			
Applicant name/s (full legal name/s)		Greenstone Resources (WA) Pty Ltd (100 341 599)	
Premises name		King of the Hills Gold Operations	
Premises location		M37/67, M37/76, M37/90, M37/201, M37/222, M37/248, M37/330, M37/410, M37/429, M37/449, M37/451, M37/457, M37/547, M37/548, M37/572, M37/573, M37/574, M37/1105	
Local Government Authority		Shire of Leonora 6438	
<b>Application documents</b>			
HPCM file reference number:		2011/009446-1~4	
Key application documents (additional to application form):		<u>Supporting documents: A213801</u> <ul style="list-style-type: none"> <li>- Tailings slurry analysis</li> <li>- Att 5A: Stake holder engagement</li> <li>- Att 5B: Mining Proposal</li> <li>- Att 6A / 6B: Emissions and Discharges</li> <li>- Att7: Spatial Data shapefile</li> <li>- Att 10A: fee calculator</li> <li>- Letter of Authority</li> <li>- Application form</li> <li>- Hydrogeological investigation KoTH</li> <li>- KoTH TLO report</li> </ul>	
<b>Scope of application/assessment</b>			

<p>Summary of proposed activities or changes to existing operations.</p>	<p><u>Application requested operation authorisation for following infrastructure:</u></p> <ul style="list-style-type: none"> <li>- Category 5 activities:</li> <li>- Processing Plant;</li> <li>- TSF 4; and</li> <li>- TSF 5.</li> <li>- Category 52 activities;</li> <li>- 8 x Jenbacher J624, 4.4MW reciprocating gas engine generators; and</li> <li>- 3 x Jenbacher J620, 3.36MW reciprocating gas engine generators.</li> </ul> <p>This licence amendment is to consolidate the items of infrastructure that have been constructed by authorisation from Works Approval W6426/2020/1 and W6525/2021/1.</p> <p>Maximum throughput for:</p> <ul style="list-style-type: none"> <li>- Cat 5 – 6, 000, 000 tonnes per annual period</li> <li>- Cat 52 – Total capacity is 45.3 MW</li> </ul> <p>Estimated throughput for:</p> <ul style="list-style-type: none"> <li>- Cat 5 – 5, 500, 000 tonnes per annual period</li> <li>- Cat 52 – Total capacity is 27 MW (capped load @30C Ambient Temp)</li> </ul> <p><u>Works Approval info:</u></p> <p><u>W6426/2020/1:</u></p> <ol style="list-style-type: none"> <li>1. <u>TSF 4 (Cells A and B) – Stage 6 embankment raise</u> <ul style="list-style-type: none"> <li>- CCIR submitted on 23 March 2022 – DWER advised compliance on 11 April 2022</li> <li>- TLO from 23 March – 8 October 2022 (<i>Note: end date for TLO recently amendment to 10 December 2022</i>).</li> <li>- TLO report (DWERDT672425) submitted 21 September, with extra info provided on 12 October 2022.</li> </ul> </li> <li>2. <u>Gold Processing Plant and associated infrastructure</u> <ul style="list-style-type: none"> <li>- ECR submitted on 27 April 2022</li> <li>- Commissioning authorised between 27 April – 27 July 2022</li> <li>- Commissioning report submitted 12 June 2022</li> <li>- TLO authorised from 13 June – 10 December.</li> </ul> </li> <li>3. <u>TSF 5 (Cells A and B) – Stage 1-4 (starter embankment)</u></li> </ol> <p><u>W6525/2021/1:</u></p> <ol style="list-style-type: none"> <li>1. Cat 52 – Electric Power station <ul style="list-style-type: none"> <li>- ECR (for Stage 1) submitted on 28 February 2022</li> <li>- Commissioning report (for Stage 1) submitted 3 June 2022</li> <li>- TLO commenced 3 June 2022.</li> <li>- Letter sent to WA holder regarding ECR and commissioning report for stage 1 (A2124562)</li> <li>- TLO report submitted 20 September 2022 → updated report to only reflect Stage 1 re-submitted 4 October</li> </ul> </li> </ol>
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**Category number/s (activities that cause the premises to become prescribed premises)**

**Table 1: Prescribed premises categories**

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5: Processing or beneficiation of metallic or non-metallic ore	6, 000, 000 tonnes per annual period	<b>New category</b>
Category 52: Electric Power generation	Up to 45.3 mega watts in aggregate (Stage 1 & 2)	<b>New category</b>
<i>Category 6: mine dewatering</i>	<i>1, 000, 000 tonnes per annual period</i>	<i>No changes</i>
<i>Category 54: Sewage facility</i>	<i>146.25 m<sup>3</sup>/day</i>	<i>No changes</i>
<i>Category 89: Putrescible landfill</i>	<i>Less than 5,000 tonnes per annual period</i>	<i>No changes</i>

**Legislative context and other approvals**

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/> Expiry: M37/67, M37/76, M37/90, M37/201, M37/222, M37/248, M37/330, M37/410, M37/429, M37/449, M37/451, M37/457, M37/547, M37/548, M37/572, M37/573, M37/574, M37/1105
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	<i>Subject to Mining Act 1987</i>
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CPS No: 8938/1 – Issued 22 August 2020 <i>Note: no clearing is proposed for this amendment</i>
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: <i>N/A</i> Licence/permit No: <i>N/A</i> <i>No clearing is proposed.</i>
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Licence/permit No: GWL 63771(8) Tarmoola Gold Mine GWL 204011(2) <i>Note: no permit / licence required for this amendment.</i>

Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: N/A Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office: Goldfields
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A <i>Note: Leonora Water Reserve PDWSA (P1) 6km south-east from TSF but not hydraulically downgradient of operations</i>
Is the Premises subject to any other Acts or subsidiary regulations	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<i>Mining Act 1978</i> Approval for Stage 5 Mining Proposal (101387).
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: Several "Possibly contaminated – investigation required" sites within the footprint of the activity on the premises Date of classification: 6 September 2016