



Application for Works Approval

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

Works Approval Number	W6704/2022/1
Applicant	Regis Resources Limited
ACN	009 174 761
File number	DER2022/000301
Premises	Duketon Gold Project Bandy WA 6440 Legal description - Mining tenements M38/499, M38/500
Date of report	27 January 2023
Decision	Works approval granted

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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 and time limited operation of the premises. As a result of this assessment, works approval W6704/2022/1 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 1 July 2022, Regis Resources Limited (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 to undertake construction works at the Stirling In-pit TSF (Moolart Well Tailings Storage Facility 2 (MLW TSF2)), relating to an upstream embankment raise to the internal embankment between the Stirling and Beaufort pits at Duketon Gold Project (the premises). The proposed raise is from 530.0 mRL to 535.0 mRL (5.0m total). The premises is approximately 100 km north of Laverton within mining tenements M38/500 and M38/499.

The premises relates to the category 5 Processing or beneficiation of metallic or non-metallic ore and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6704/2022/1. 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 2020) are outlined in works approval W6704/2022/1.

Moolart Well is the processing hub for the Duketon project sites, which includes several satellite pits. The applicant currently operates the Moolart Well hub under operating licence L8578/2011/1, with an approved ore processing throughput of up to 4 million tonnes (Mt) per annum. Stirling In-pit TSF is currently used as an active tailings storage facility at Moolart Well (Figure 1) and was commissioned in December 2019. The In-pit TSF has an approximate pit rim area of 31 ha with respective length and width of 1 km and 300 m on a north-south orientation. It has a maximum depth of approximately 75 m and comprises four pods within the pit.

The embankment on the northern boundary of the Stirling in-pit TSF will be approximately 130 m in linear distance. Initial approval included a small embankment (up to 530 mRL) on a land bridge (saddle) at the northern end of the Stirling pit. After undergoing some additional studies, the applicant is now proposing an upstream embankment raise to 535 mRL.

Figure 2 below shows the location of the Stirling in-pit TSF and the proposed embankment raise in relation to other infrastructure at the premises, and Figure 3 shows the design and a cross section drawing of the proposed embankment raise of the Stirling in-pit TSF.



Figure 1: Premises boundary for embankment raise of Stirling in-pit TSF

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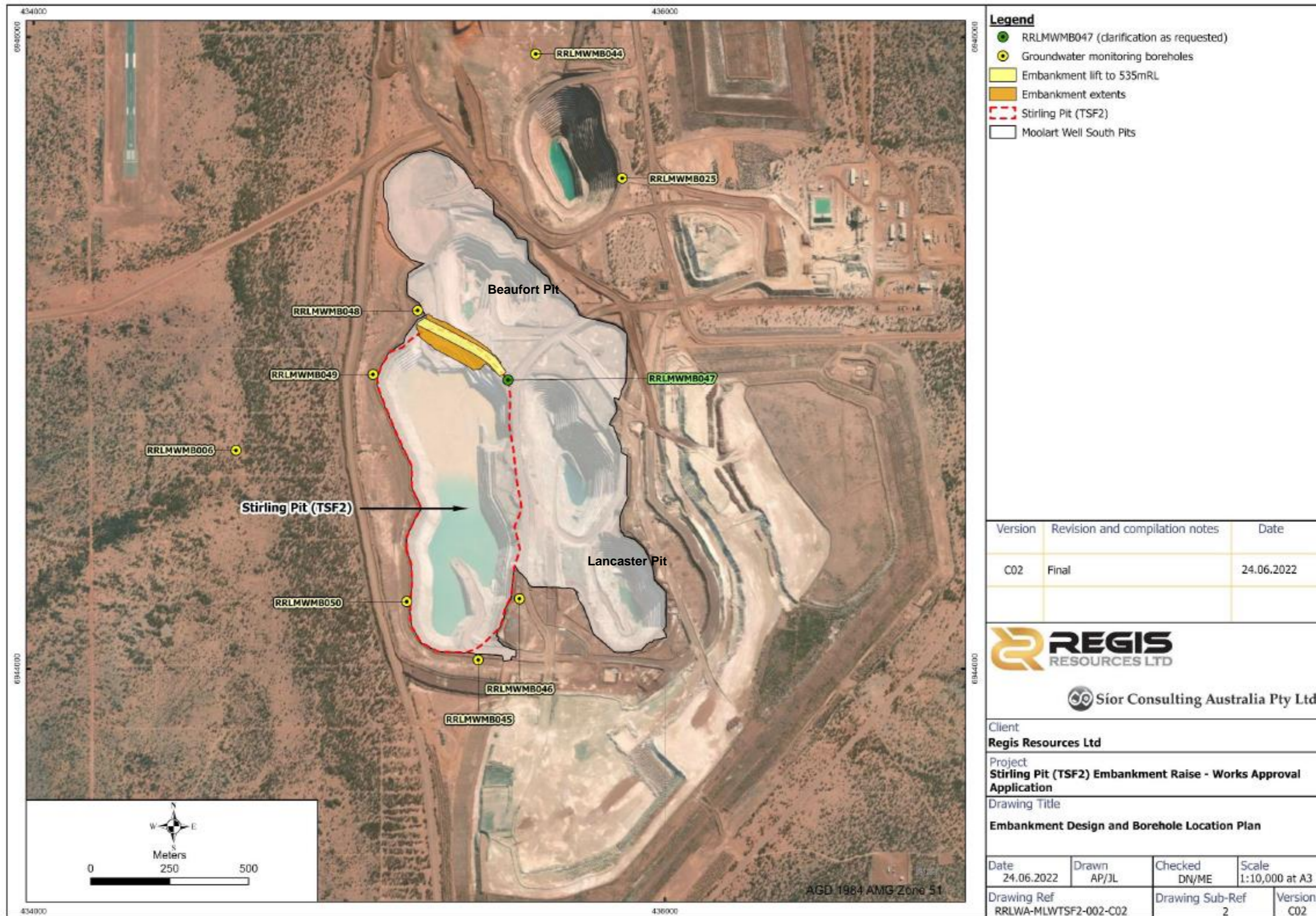


Figure 2: The location of the Stirling in-pit TSF and the proposed embankment raise

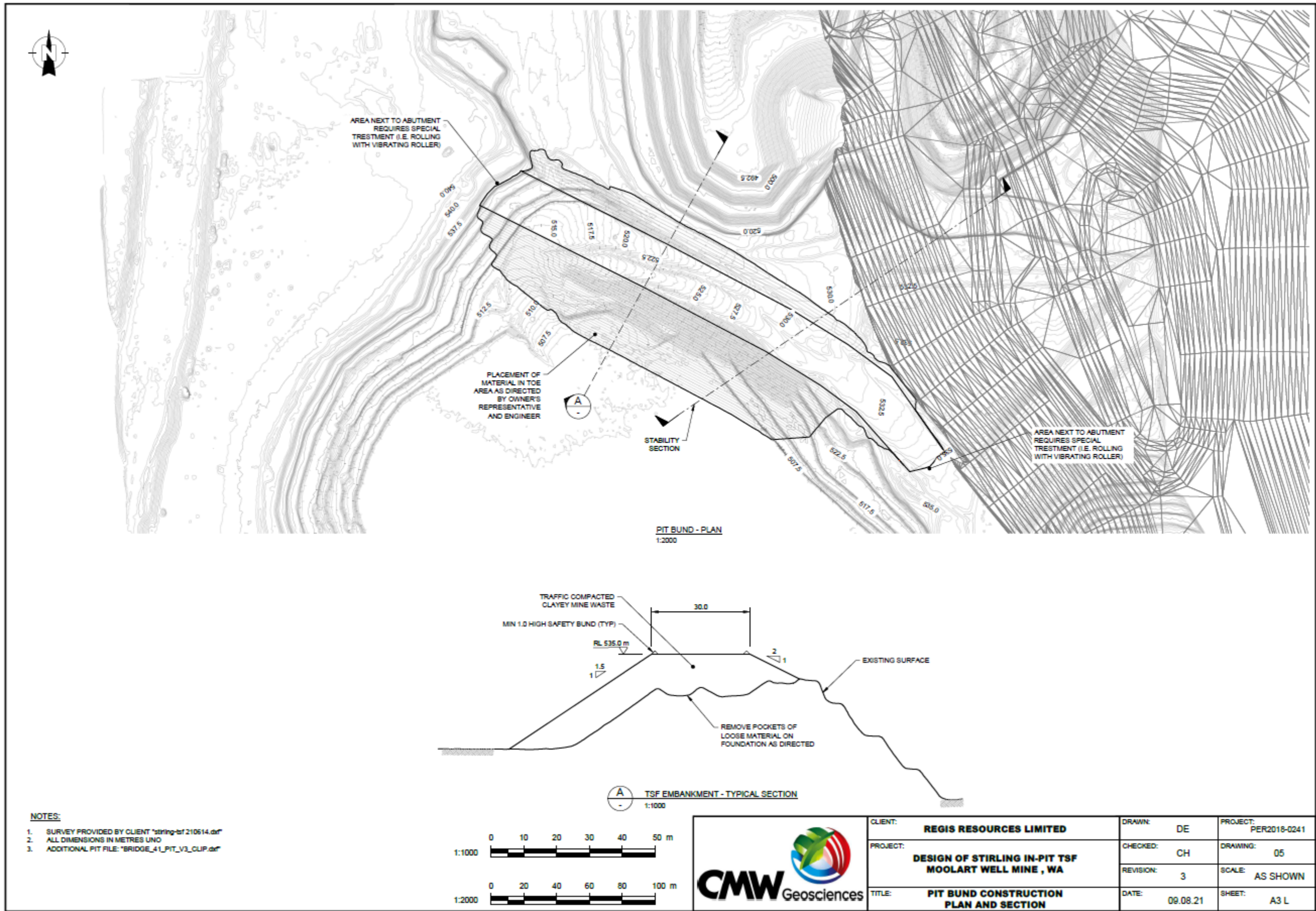


Figure 3: Cross section drawing of the proposed embankment raise of the Stirling in-pit TSF

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2.2.1 Proposed construction works and design

The applicant is proposing that the embankment at the northern end, between the Stirling in-pit TSF and the Beaufort pit, be raised by 5 m, from 530 mRL to maximum crest elevation of 535 mRL, allowing tailings deposition to 534 mRL to allow for a 1 m freeboard. The applicant has advised that a mining proposal; Duketon Gold Project Mining Proposal Version 7 which includes the proposed embankment raise, was assessed and approved by DMIRS in June 2022.

Foundation preparations are to be carried out as the first phase of the construction activities. Firstly, pockets of loose/segregated/softened materials will be removed from the surface of the embankment footprint. The foundation will then be proof compacted using loaded dump trucks. The proof compaction will achieve 95% of the Standard Maximum Dry Density (SMDD) as determined from laboratory testing in accordance with AS1289.5.1.1. No fill will be placed until the base of the embankment surface footprint is inspected and approved. All the pipework areas will be graded smooth and be free of any rock, cobbles and other deleterious materials that could damage the pipework.

The embankment will be constructed using compacted clayey mine waste. The embankment is designed to have a wide crest to suit construction using the mining fleet (i.e., loaded dump trucks) and the batters will be 1:1.5 (v:h) upstream, and 1:2 (v:h) downstream. The placement of the fill materials will be continuous and will be cured to ensure moisture is thoroughly mixed and evenly spread through all materials proposed for embankment construction.

Existing safety bunding around the Stirling Pit and the flood bund to the west of/around the pit area will be retained. The pipeline corridor route is located to the west from the plant along existing haul roads. All the slurry and return water pipelines are bunded between the plant and the TSF.

Besides, as a result of the construction activities of the embankment raise, monitoring boreholes such as RRLMWMB047 (see Figure1) can be impacted due to the proximity. Monitoring borehole RRLMWMB047 is located on the eastern extent of the proposed embankment and has a depth of 80 mBGL. Applicant is therefore committed to undertake protective measures to minimise any risk of potential damage to the bore during the construction phase.

2.2.2 Operation of Stirling in-pit TSF at 535 mRL

Tailings deposition

Once the construction of the Stirling in-pit embankment raise is complete, the tailings will be deposited sub-aerially via single-point discharge locations from the northern and southwestern pit walls in the form of slurry. The tailings discharge point will be separately moved along both the northern and southern boundary to ensure an even build-up of a tailings beach, sloping gradually towards the floating pontoon decant at a central east location of TSF. It is assumed that a cone of depression will be formed on the top surface.

Stirling in-pit TSF is designed such that a 1% AEP, 72-hour duration storm event can be temporarily stored on top of the facility. Proposed embankment raise will allow 1m total freeboard, while maintaining tailings at 534 mRL.

Water recovery system

The proposed tailings deposition method will maintain the decant pond towards the central east area of the TSF. The decant pump of the Stirling in-pit TSF is currently located on a floating pontoon or similar structure. Therefore, the decant pump will be moved up the ramp as tailings and water levels rise. Return water will be pumped directly to the process plant for reuse.

Water Balance

Due to the pit dewatering and mill supply from the bore fields, a large depression in groundwater has resulted in the regional system. Thus, it is expected that, it will take 10 to 15 years after cessation of dewatering to achieve a water balance in the Duketon mining area (Morgan, 2019). An updated 2D numerical groundwater flow model has been completed (EMM, 2021) for the proposed 5 m embankment raise in Stirling in-pit TSF and the following predictions have been made.

- During and post tailings deposition into the Stirling in-pit TSF, seepage is likely to flow towards Lancaster Pit and evaporate.
- Approximately 50 ML will seep from the tailings to the surrounding rock during the period of tailings deposition.
- Both the saprolite and bedrock hydraulic conductivities impede the horizontal movement of water.
- The increased tailings height to 534 m AHD will marginally increase the rate of water entering the groundwater system over a long duration. The primary flow path is likely to be via the weathered transitional material.
- Model results show the rate of seepage from the tailings being an order of magnitude smaller than the evaporation rates likely to occur within Lancaster Pit. As a result, there will be negligible change to groundwater flow paths if tailings within TSF2 were increased to 534 m AHD.

Inspection and monitoring

Routine inspection, maintenance and monitoring procedures are in place as required by the current operating licence (L8578/2011/1) and the applicant is committed to continue those procedures. These inspections include a variety of components including tailings delivery and water return pipelines, discharge locations, return water pumps, decant, pit walls, changes in boreholes, etc. The in-pit TSF will be monitored daily by plant operators when active. Additionally, pit inspections will be conducted monthly by the site geotechnical engineer. Existing survey prisms have been installed near the pit crest and will be used to monitor pit wall movements.

The Applicant will be authorised to undertake time limited operations for tailings to be deposited into Stirling in-pit TSF provided that relevant requirements of this works approval (W6704/2022/1) are met. Ongoing operation of the TSF will require licence L8578/2011/1 to be amended.

2.2.3 Stability analysis of the Stirling in-pit TSF embankment

A geotechnical stability analysis was undertaken to assess the interaction between the proposed Stirling TSF and adjacent Lancaster and Beaufort open pits. During that assessment, mining opportunity in the area between Lancaster and Beaufort pits was explored and an extended new pit, i.e., Eindhoven pit, has been proposed (Figure 4). Based on the proximity of the proposed Eindhoven pit, it is expected that the proposed Eindhoven pit will interact with the Stirling In-Pit TSF in a similar way to the Lancaster and Beaufort pits.

Observations of the performance of both the Beaufort and Lancaster North pit walls adjacent to the Stirling TSF have not shown any signs of distress or seepage since TSF filling commenced in December 2019. Additional geotechnical analysis has been undertaken to confirm that adequate stability conditions are maintained for the new proposed pit.

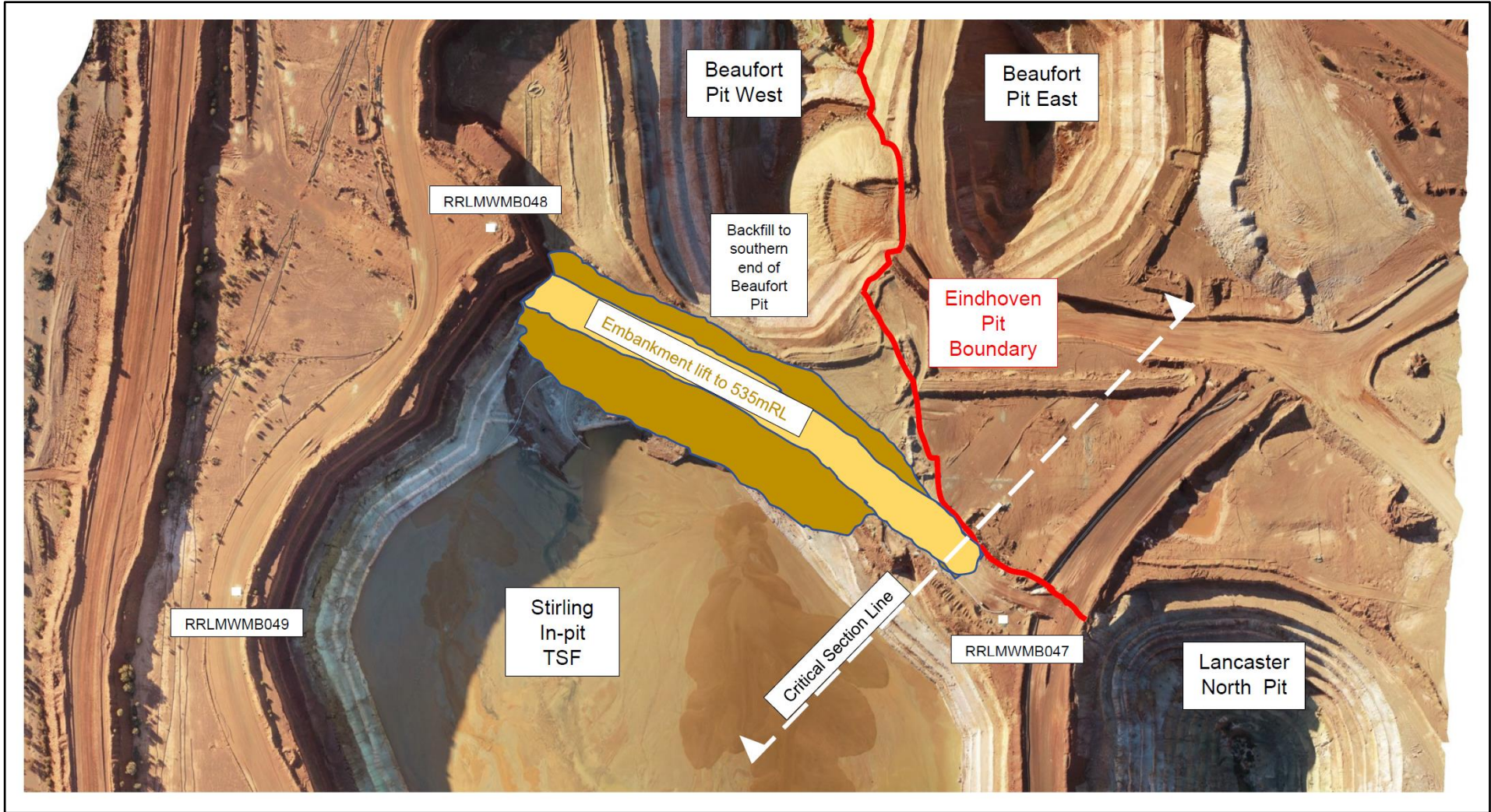


Figure 4: Existing Stirling in-pit TSF showing adjacent pits

Based on the DMP Code of Practice (2013), the hazard rating for the TSF2 has been assigned a hazard rating of 'High C', Category 3 considering that:

- Active mining will be occurring downstream of the land bridge between Stirling Pit and the proposed Eindhoven Pit.
- No active mining will be occurring in Beaufort Pit downstream of the land bridge. The southern end of Beaufort Pit is being backfill with mine waste.
- Negligible impact on natural environment

Therefore, an external perimeter embankment is not required for containment of tailings, to prevent tailings flowing to the downstream environment. Thus, the facility poses a low risk to the surrounding environment and a dam break study is not required.

However, the department would like to emphasise that the TSF dam stability, safety and construction requirements are regulated by the *Mining Act 1978* and a Mining Proposal is required to authorise construction, operation or closure of the TSF. Additionally, the *Mines Safety and Inspection Act 1994* and related Regulations also apply.

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 construction and operation which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction works of Stirling in-pit TSF embankment lift by 5m	Air/windborne pathway	<ul style="list-style-type: none"> • All haul roads to be sprayed and wetted to totally prevent the generation of airborne dust • Fill material to be cured to adjust the moisture content • Human receptors are not considered to be impacted during construction or operations due to separation distance.
Noise			<ul style="list-style-type: none"> • No control proposed. Human receptors are not considered to be impacted during construction or operations due to separation distance.

Emission	Sources	Potential pathways	Proposed controls
Operation			
Seepage	Deposition of Tailings into Stirling in-pit TSF	Direct seepage to groundwater	<ul style="list-style-type: none"> Regular groundwater monitoring Flood/safety bunding around the pit Substantial cone of depression at Moolart Well. Seepage will be drawn towards the deeper Lancaster pit east of Stirling in-pit TSF which will be a perpetual groundwater sink
Tailings	Pipeline leaks / rupture	Direct discharge	<ul style="list-style-type: none"> Bunded pipelines along the side of the existing haul road Leak detection in pipelines Pipeline inspections to detect spills below sensitivity of leak detection Inspection of northern tailings discharge spigot once construction of the embankment has been completed
	Tailings / contaminated water	Overtopping from Stirling in-pit TSF	<ul style="list-style-type: none"> Deposition to 534 mRL provides 1 m total freeboard, which exceeds the 1:100-year AEP 72 hours storm event and minimum operational freeboard Flood/safety bunding around the pit Spilled water or tailings will flow back to sumps or the Stirling in-pit TSF Daily inspections be undertaken Decant water pond to be kept to a minimum
	Ingestion of supernatant from Stirling in-pit TSF by wildlife	Ingestion by wildlife	<ul style="list-style-type: none"> safety bunding around the pit Daily inspections be undertaken

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), 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 2 and Figure 5 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 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Nearest town	Laverton is approximately 100 km south of the

	<p>premises</p> <p>Note: screened out as a receptor due to separation distance</p>
Nearest residences are in the Mulga Queen community	<p>29 km west of the premise boundary</p> <p>Note: screened out as a receptor due to separation distance</p>
Environmental receptors	Distance from prescribed activity
Priority 4 flora	<i>Eremophila pungens</i> has been recorded in vegetation within the Works Approval premises boundary in vegetation east of the mining area
Priority 4 fauna	<p>Mulgara reported within 3 km</p> <p>Long-tailed Dunnart – potential habitat within premises, not recorded during surveys</p>
Underlying groundwater (Goldfields Groundwater Area)	<p>Underlying the operation</p> <p>Average pre-mining groundwater depth was approximately 15 to 20 meters below ground level (mbgl). The average total salinity of the groundwater in the Stirling pit are ranges from 1,109 – 2,050 mgL⁻¹ TDS (considered to be potable to brackish in the Goldfields). The underlying groundwater of the Stirling pit considered to be neutral as the pH is ranging between 7-8. Also, heavy metal levels in the groundwater are also identified as very low. As a result of pit dewatering, a large depression has resulted in the regional groundwater system. Final water level is predicted to remain at 35 to 50 mbgl.</p> <p>The nearest pastoral bore is located approximately 5 km to the north of the Stirling TSF.</p>

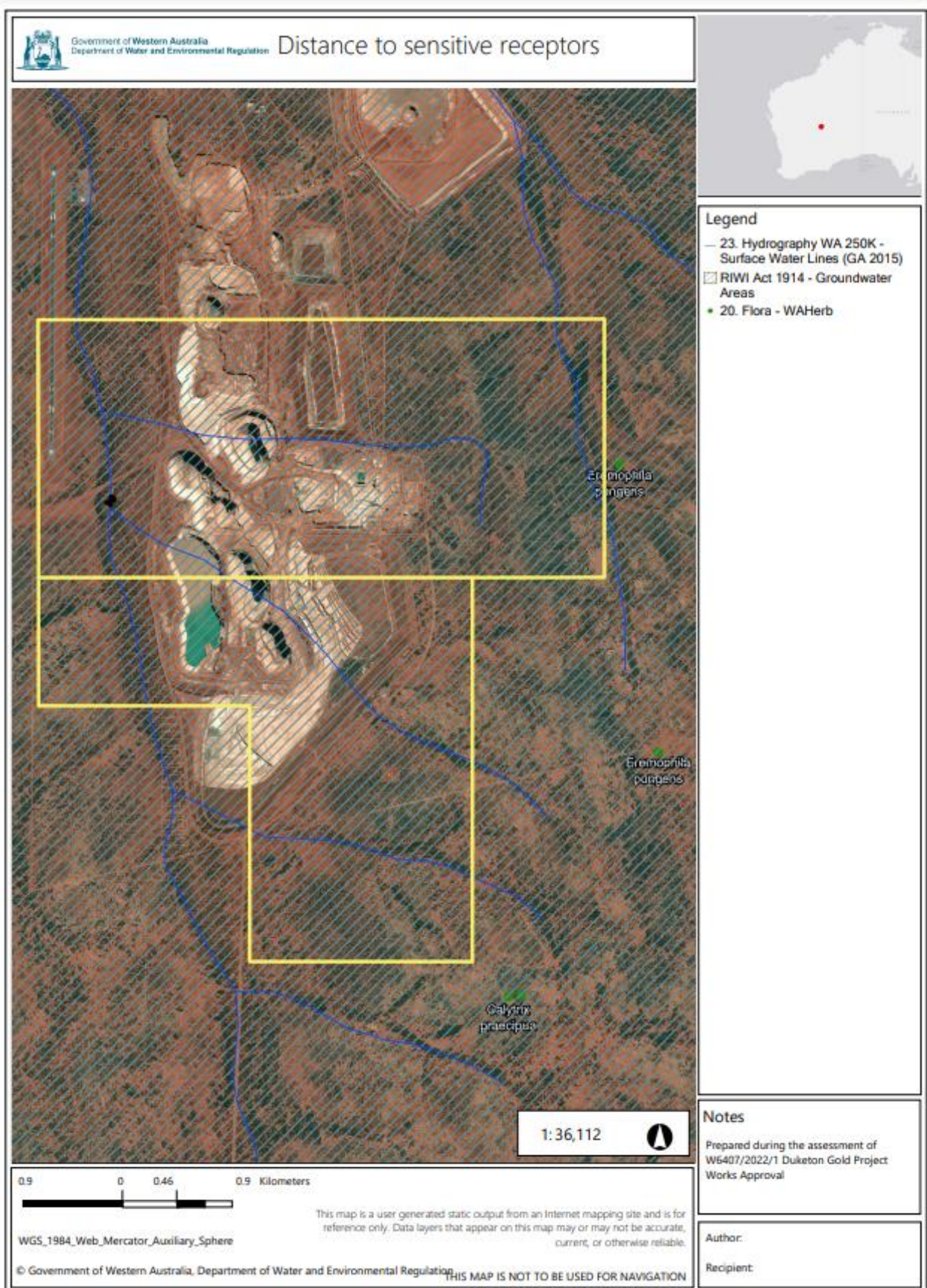


Figure 5: Distance to sensitive receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source 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 applicant 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 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 3.

Works approval W6704/2022/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence amendment is required to authorise emissions associated with the ongoing operation of the premises i.e. Category 5 activities. 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 3: Risk assessment of potential emissions and discharges from the premises during construction, and 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 Stirling in-pit TSF embankment up to 535 mRL.	Dust	Air/windborne pathway causing impacts to health and amenity	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	N/A	The Delegated Officer considers that the construction works are temporary and the applicant controls, summarised in section 3.1, are sufficient to mitigate any impacts from the potential dust emissions during construction. Also, the provisions of the Environmental Protection (Noise) Regulations 1997 applies and are sufficient to regulate any impacts from the potential noise emissions from the premises during construction. Therefore, additional regulatory controls are not required.
	Noise		No nearby receptors	Refer to Section 3.1	No pathway to receptor. Further risk assessment not required.	Y	N/A	
Time-limited-operations								
Deposition of Tailings into Stirling in-pit TSF	Dust (Dry tailings)	Air / windborne pathway causing impacts to vegetation health due to dust deposition leading to reduced ability for photosynthesis and smothering	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Possible Low Risk	Y	N/A	N/A
	Seepage	Increase in groundwater table, impacting root zone of vegetation Impacts: Mounding of groundwater Inundating vegetation rootzones	Surrounding vegetation Groundwater contamination.	Refer to Section 3.1	C = Moderate L = Possible Medium Risk	Y	Condition 1 – Infrastructure requirements Condition 1 – Infrastructure requirements: Groundwater monitoring bores Condition 6 – Time limited operation	Refer to Section 3.3

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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				
		Contamination of groundwater					requirements	
	Tailings slurry	Overtopping from poor tailings management or rainfall event Impacts: Causing impacts to vegetation health Soil contamination	Surrounding vegetation Land/soil Groundwater	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1 – Infrastructure requirements Condition 6 – Time limited operation requirements	The Delegated Officer considers that the applicant controls, summarised in section 3.1, are sufficient to mitigate any impacts from overtopping of tailings from Stirling in-pit TSF. Those controls have conditioned within the works approval in accordance with the department's <i>Guideline: Risk Assessments</i> (DER 2017). Current conditions in the operating licence L8578/2011/1 include the requirement to maintain a minimum 300 mm operational freeboard (existing condition 1.2.7). However, within this works Approval application, the applicant is proposing to maintain a 1 m total freeboard as more conservative control. Additionally, daily visual inspection of the TSF embankment freeboard (existing condition 1.2.10); and the requirement to conduct annual water balance (existing condition 1.2.12) is also required under the current operating licence. Thus, conditions in this issued works approval together with the conditions in the current operating licence adequately regulate the risk of overtopping.
	Tailings slurry	Ingestion of supernatant from TSF2 by wildlife	Wildlife	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	N/A	WAD cyanide concentration in decant water is below 50 mg/L, which complies with levels recommended in the <i>International Cyanide Management Code for the Manufacture, Transport, and use of Cyanide in the Production of Gold</i> for protection of wildlife. No additional controls are deemed required.
Tailings delivery or return water pipeline leaks / rupture	Tailings slurry or return water	Direct discharge of decant water/tailing slurry from pipeline rupture or leak Impacts: Degradation of soil structure and soil contamination Impacts to vegetation growth and health	Surrounding vegetation Land/soil Groundwater	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	<u>Condition 1 – Infrastructure requirements</u> Condition 6 – Time limited operation requirements <u>Condition 6 – Time limited operation requirements: Tailings and return water pipelines</u>	The premises licence has existing conditions relating to the regulation of spills and leaks from pipelines. These include the requirement that all the pipelines need to be equipped with telemetry, pressure sensors and automatic cut-outs (existing condition 1.2.11); requirement to provide sufficient secondary containment to contain any spills (existing condition 1.2.11); requirement for pipeline inspection daily to ensure integrity (existing condition 1.2.10). The Delegated Officer considers the applicant controls, which are conditioned in the issued works approval and in the current operating licence are sufficient to mitigate and regulate the risk of spills or leaks from pipelines.

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

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

3.3 Detailed risk assessment of seepage impacts to groundwater and vegetation

3.3.1 Tailings characteristics

A mill tailings sample was tested and detected that the Moolart well tailings are non-plastic, sandy silt consisting of high fines content (73% passing 75 micron). Consequently, moderate settling rates resulted during the settling test. The consolidation test indicated that consolidation is comparatively rapid.

Tailings will comprise of ore from a number of project areas including Lancaster/Lancaster South, Wellington, Halifax, North, Beaufort, Blenheim, Wallace and Mitchell, and some other satellite pits. Tailings will be discharged as approximately 50% solids slurry with a specific gravity of approximately 2.7. Initial and final tailings densities are 1.00 t/m³ (dry) and 1.35 t /m³ (dry), respectively. Tailings beach slope is expected to be 0.5% and the permeability of the tailings expected to be between 10⁻⁷ to 10⁻⁸ m/s.

The Applicant expects that the chemical composition of the tailings and return water remain similar to that of former discharge into MLW TSF1 and the laboratory leaching tests performed in 2019. The Delegated Officer notes that these geochemical test results appear to be outdated as they are unlikely to represent the range of ore lithologies that are currently being processed and may not have the same leaching behaviour.

Based on the geochemical tests performed using ore and waste recovered from the operation, all tailings have been classified as Non-acid forming (NAF) with some minor outliers in Petra pit transitional sample, two of eight samples from Wallace pit and one sample in the Mitchell pit. Therefore, it is expected that acid generation potential, associated mobilisation and leaching of heavy metals from the tailings will be minimal.

3.3.2 Groundwater standing levels and quality

Underlying groundwater around the Stirling in-pit TSF is considered to be potable to brackish and the total salinity range of 1,109 to 2,050 mgL⁻¹ TDS and the pH ranges between 7 to 8 units and thus considered to be neutral. The main use of this groundwater is for mining purposes.

Average pre-mining groundwater depth was approximately 15 to 20 mbgl. As mentioned in section 3.1.2, it is evident that the groundwater in the Stirling in-pit TSF area has been modified by dewatering and mining activities and a substantial cone of depression has been formed in the regional groundwater system. It is expected that there will be slow recovery of the regional groundwater system when dewatering ceases.

Ongoing metals and WAD cyanide concentrations in groundwater around the TSF area have been monitored since 2019. All the analyses of WAD cyanide concentrations resulted well below 0.5 mgL⁻¹ limit required by the operating licence.

3.3.3 Seepage impacts to groundwater and vegetation

Seepage analysis modelling conducted in 2021 indicated that during and post tailing deposition into Stirling in-pit TSF, seepage is likely to flow towards the Lancaster pit. The primary flow path of the seepage is likely to be through the base of the pit and flow via transitional material as the saprolite and the bedrock hydraulic conductivity hinder the horizontal movement of water. Based on the above model conducted by EMM Consulting Pty Ltd in 2021, it is mentioned that the rate of seepage from the Stirling in-pit TSF at 354 m RL is lower than that of the evaporation rate which is like to occur in the Lancaster pit. Therefore, the model confirms that the elevated tailings height (354 mRL) will marginally increase the volume of seepage entering into the local groundwater system.

Detecting WAD cyanide in groundwater monitoring bores surrounding the TSF indicates the presence of tailings seepage. Given the fact that WAD cyanide concentrations are

predominately less than 0.5mg/L in groundwater samples, the applicant claims that seepage is not an issue and therefore likely to be no impacts to the quality of groundwater.

Another key potential impact from tailings seepage is inundation of the rootzone of surrounding native vegetation by rising groundwater levels. A total of 26 vegetation associations were identified across the Moolart Well operations areas during a level 2 assessment conducted in 2007. These vegetation types were considered relatively widespread across the north-eastern Goldfields region. No Threatened flora have been recorded within the premises boundary. *Eremophila pungens* has been recorded in vegetation within the Works Approval premises boundary in vegetation east of the mining area. Stirling in-pit TSF is completely located within an area that has been cleared for mining and no vegetation is present in the immediate vicinity. The current operating licence has a standing water limit of 4 mbgl and requires quarterly monitoring for any fluctuations. Ongoing monitoring will ensure any changes to groundwater quality and levels are detected early and corrective actions implemented as required.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 10 October 2022	None received	N/A
Local Government Authority advised of proposal on 06 October 2022 Shire of Laverton	Council advised the department on 24 October 2022 that Shire of Laverton has no objections to the Works Approval request by Regis Resources Limited for construction of a 5 m embankment raise.	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal 06 October 2022	None received	N/A
Applicant was provided with draft documents on 22 December 2022	Received on 20 January 2023. Refer Appendix 1.	Refer Appendix 1.

5. 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. Email titled "L8578/2011/1 - Regis Resources application for an amendment to License - Works Approval for the Moolart Well TSF2 5m Embankment Raise" dated 01/07/2022 authored by Malcolm Wealleans, available at DWER records (DWERDT625582).
2. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Decision Making*, Joondalup, Western Australia.
4. DWER 2016, *Guideline: Environmental siting*, Joondalup, Western Australia.
5. DWER 2017, *Guideline: Risk assessments*, Joondalup, Western Australia.
6. EMM, 2021. Stirling Pit Tailings study: Two-dimensional numerical groundwater flow model, EMM Consulting Pty Ltd, Adelaide
7. Morgan, 2019. Proposed Tailings Deposition Stirling Open Pit, Moolart Well Gold Mine Regis Resources Limited, KH Morgan and Associates.
8. ICMA 2022. *International Cyanide Management Code for the Manufacture, Transport, and use of Cyanide in the Production of Gold. Available online via world wide web: [The Cyanide Code](#)* International Cyanide Management Institute, Washington, USA

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition/Section	Summary of applicant's comment	Department's response
Condition 1, Table 1 item 2	<p>Applicant suggested replacement of “bunded open trenches” with “secondary containment” to be consistent with condition 1.2.11(c) of Licence L8578/2011/1 which is quoted below.</p> <p>“(c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.”</p> <p>Applicant also suggested replacement of “telemetry systems, pressure sensors and automatic cut-outs” with “telemetry systems, pressure sensors and/or automatic cut-outs” to be consistent with condition 1.2.11 (a) and (b) of Licence L8578/2011/1, which is quoted below.</p> <p>“The licence holder shall ensure that all pipelines containing tailings, decant water, saline water and mine dewater are either:</p> <p>(a) equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; and/or</p> <p>(b) equipped with automatic cut-outs in the event of a pipe failure;”</p>	<p>DWER noted the request and updated the construction requirements condition of the works approval to be consistent with the existing conditions in the current operating licence.</p>
Condition 6, Table 2 item 2	<p>As described for Condition 1, Table 1, Item 2, Applicant suggested replacement of “bunded open trenches” with “secondary containment” to be consistent with condition 1.2.11(c) of Licence L8578/2011/1.</p> <p>Applicant also suggested replacement of “telemetry systems, pressure sensors and automatic cut-outs” with “telemetry systems, pressure sensors and/or automatic cut-outs” to be consistent with condition 1.2.11 (a) and (b) of Licence L8578/2011/1.</p>	<p>DWER noted the request and updated the operational requirements condition of the works approval to be consistent with the existing conditions in the current operating licence.</p>
Decision Report - Section 3.1.2 Receptors	<p>Figure 5 cross-reference has malfunctioned. Suggested the cross reference is reinserted.</p>	<p>Noted and cross reference corrected.</p>

Decision Report - Section 3.2 Risk ratings	Correction of the TSF name	TSF name corrected.
	Applicant suggested the wording of the justification to be changed to align with condition 1.2.11 of the existing Licence 8578/2011.	Justification wording related to the condition 1.2.11 of the existing Licence 8578/2011 changed from “and” to “and/or” to align with the existing licence.
Several places throughout the documents	Within the decision report, “Stirling” is spelt as “Sterling” on several occasions. The correct name is “Stirling”.	DWER noted the typographical error and corrected.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
Application type				
Works approval	<input checked="" type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input type="checkbox"/>	Current licence number:		
		Relevant works approval number:	N/A	<input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:	None	<input type="checkbox"/>
Date application received		1 July 2022		
Applicant and Premises details				
Applicant name/s (full legal name/s)		Regis Resources Limited (ACN: 009 174 761)		
Premises name		Moolart Well - TSF 2		
Premises location		M 38/500 and M 38/499		
Local Government Authority		Shire of Laverton		
Application documents				
HPCM file reference number:		DER2022/000301		
Key application documents (additional to application form):		<p><i>Works Approval Application Supporting Documents</i> <i>Including appendices:</i></p> <ul style="list-style-type: none"> - <i>Stirling Pit TSF In-pit Bund Construction</i> - <i>Stirling In-Pit TSF – Geotechnical Stability of Adjacent Pits</i> - <i>Stirling In-Pit TSF Scope of Works and Technical specification</i> - <i>Design Report Stirling Pit Tailings Storage Facility</i> - <i>Stirling Pit Tailings Study – Two-Dimensional Numerical Groundwater flow model</i> - <i>Proposed Tailings Deposition Stirling Open Pit – Moolart well gold mine (2019)</i> - <i>DMIRS Approval for Duketon Mining Proposal Version 7 – 3</i> 		

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
		June 2022
Scope of application/assessment		
Summary of proposed activities or changes to existing operations.	<u>Works approval</u> Construction of a 5m embankment between a current in-pit tailings facility and the adjacent pit, to allow for additional tailings deposition.	
Category number/s (activities that cause the premises to become prescribed premises)		
Table 1: Prescribed premises categories		
Prescribed premises category and description	Proposed production or design capacity	
Category 5: Processing or beneficiation of metallic or non-metallic ore	Increasing the current in-pit TSF embankment by 5m to 535 mRL	
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"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input 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"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input checked="" type="checkbox"/> Expiry: 2028 Other evidence <input type="checkbox"/> Expiry: However, we need the full ASIC company information extract.
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: No clearing is proposed.

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
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: N/A Licence/permit No: N/A No clearing is proposed.
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"/>	Application reference No: Licence/permit No: GWL169314(3)
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Name: Goldfields Groundwater Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: P1 / P2 / P3 / N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> <i>Mining Act 1978</i>
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 type="checkbox"/> No <input checked="" type="checkbox"/>	Classification: N/A Date of classification: N/A