



Application for Works Approval

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

Works Approval Number W6690/2022/1

Applicant Agnew Gold Mining Company Pty Ltd

ACN 098 385 883

File number DWER2022/000231

Premises Agnew Gold Mine
Mining Tenements: M36/27, M36/32, M36/53, M36/55,
M36/65, M36/150, M36/174, M36/248, M36/314 and M36/450.
LEINSTER WA 6437
As depicted in Schedule 1 of the Works Approval.

Date of report 12/09/2022

Decision Works approval granted

**A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES**

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

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6690/2022/1 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 25 May 2022, the Agnew Gold Mining Company Pty Ltd (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 relating to a pipeline in order to support Category 5 activities at the Agnew Gold Mine, the layout of the pipeline is depicted in Figure 1. The premises is approximately 22 km north-east of Leinster.

The Agnew Gold Mine consists of 2 underground mines, processing plant, two active in-pit tailings storage facilities (TSF) and administration facilities. The premises relates to Category 5 activities and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6690/2022/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessment* (DWER 2020) are outlined in works approval W6690/2022/1.

The applicant is proposing to construct and commission a replacement tailings delivery pipeline approximately 10.6 kilometres (km) in length.

The construction of this new pipeline is part of a staged expansion over the next 3-5 years where the applicant plans to increase the capacity of the processing plant on the premises. This expansion will include an increase of tailings disposal requirements in both tonnage and hydraulic demand. The increased pressure profile is created by the increased slurry viscosity of the expected tailings in the future. The upgrade of this pipeline is required to meet these operational demands. The new pipeline is to be constructed with a larger bore, higher specification HDPE and limited steel pipes. A new radiometric density and pressure controls will also be installed in the new pipeline within the plant bund.

Category 5 activities are already authorised under the current licence L4611/1987/11 for 1,400,000 tonnes per annual period. The applicant has advised that they will apply for a separate licence amendment to increase the assessed production capacity as part of the staged expansion. The applicant is intending to increase the capacity from 1.35 Mtpa to 1.7 Mtpa. The upgraded pipeline is a mitigation measure to reduce the risk of environmental incidents, decrease pressure issues and to be reliable for future operational needs.

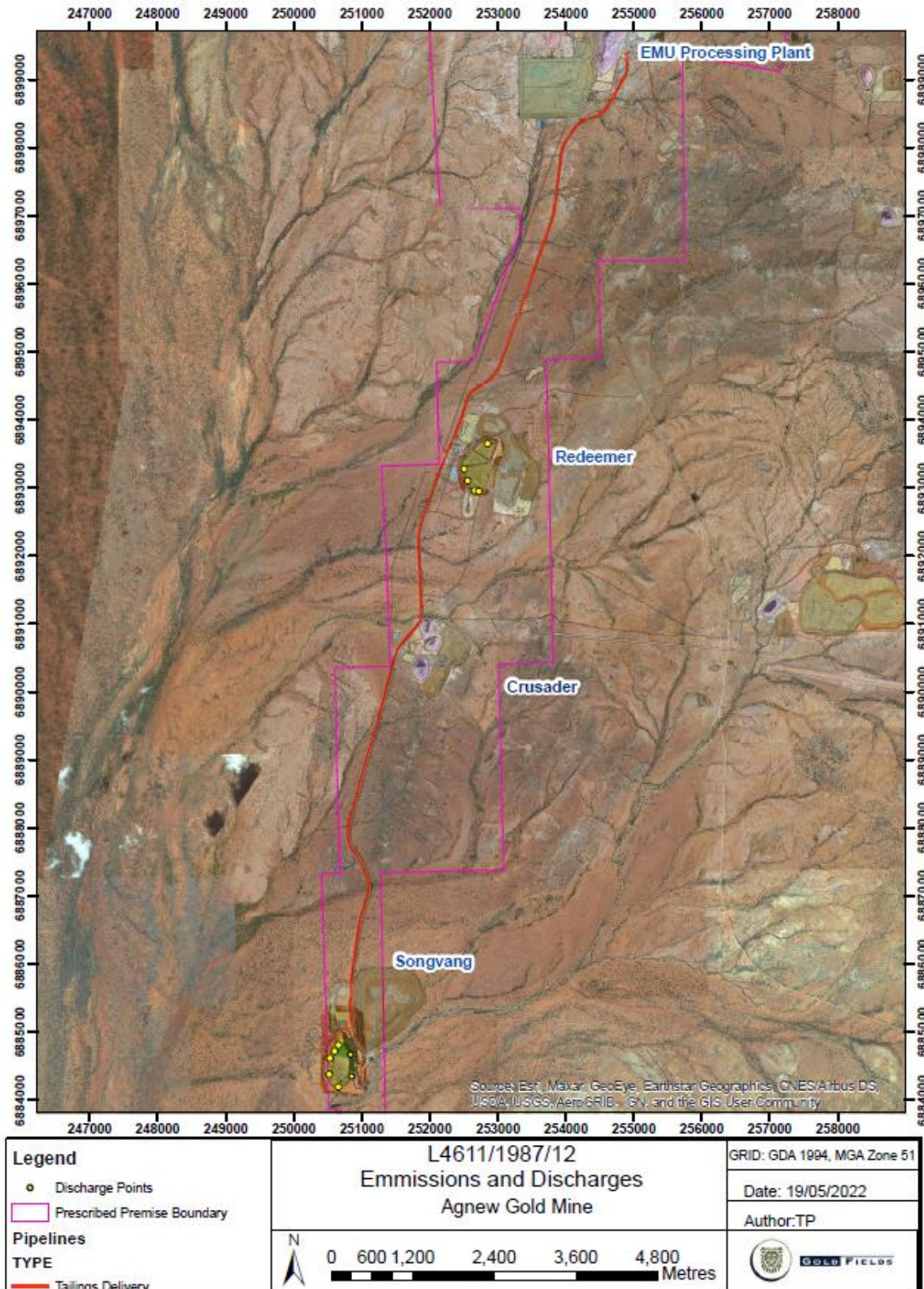


Figure 1. Tailings delivery pipeline – approximately 10.6km of the northern section of the pipeline will be replaced

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/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 of pipeline and associated vehicle movements.	Air / windborne pathway	No proposed controls.
Commissioning and Operation			
Tailings	Pipeline rupture or leaks	Direct discharge to land	<ul style="list-style-type: none"> • Construction of pipeline will occur within existing pipeline corridor with minor changes (no vegetation clearing required): <ul style="list-style-type: none"> - Bypasses the booster pumps at Redeemer - Minor changes to plant bund to allow for new piping and instrumentation. • Incident, spill and emergency response processes in place. • Spill collection pits (or sumps) at either side of creek crossings (Figure 2) • Pipeline double sleeved and buried under creek crossings • Pipeline design by a qualified and professional engineer • Construction compliance inspection by a suitably qualified professional • Environmental commissioning to inspect pipeline function and the extra instrumentation (new pressure transmitter and local indicators

Emission	Sources	Potential pathways	Proposed controls
			& new density element and transmitter) <ul style="list-style-type: none"> • Automatic cut-outs in the event of pipeline failure • Telemetry systems and pressure sensors • Secondary containment – existing bunds will be used with the capacity reviewed and altered appropriately to suit new future operational throughput • Planned maintenance • Daily inspections

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

Table 2: Sensitive environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Native vegetation	Surrounding dewatering pipeline infrastructure
Groundwater	<p>Tenements located within the Goldfields Groundwater Area.</p> <p>Agnew holds a current GWL64335(10) and GWL55840(9) with allocation of 4.11 GL/per annum from the Fractured Rock aquifer.</p> <p>Average depth to groundwater based on monitoring undertaken in 2017 for the surrounding historical bores at the Crusader Complex (Pilgrim, Deliverer and Cox pits) is approximately 28.87 mbgl (Goldfields Australia Pty Ltd, 2021).</p> <p>No other groundwater users located in the Crusader Complex area (Goldfields Australia Pty Ltd). The nearest station is Pinnacles Stations located 10.5km west of the Crusader Complex (Goldfields Australia Pty Ltd, 2021).</p> <p>Screened out as a sensitive receptor</p>
Ephemeral creek lines	There are several ephemeral creek lines which intercept the corridor of the pipeline. They are depicted in Figure 2.
Priority Flora	<ul style="list-style-type: none"> • <i>Eremophila pungens</i> (P3)

	<ul style="list-style-type: none">• <i>Hybanthus floribundus</i> subsp. <i>Chloroxanthus</i> (P4) <p>Both located in close proximity to the northern portion of the pipeline. Although they occur upgradient from the pipeline so unlikely to be impacted by any unplanned discharge incident.</p>
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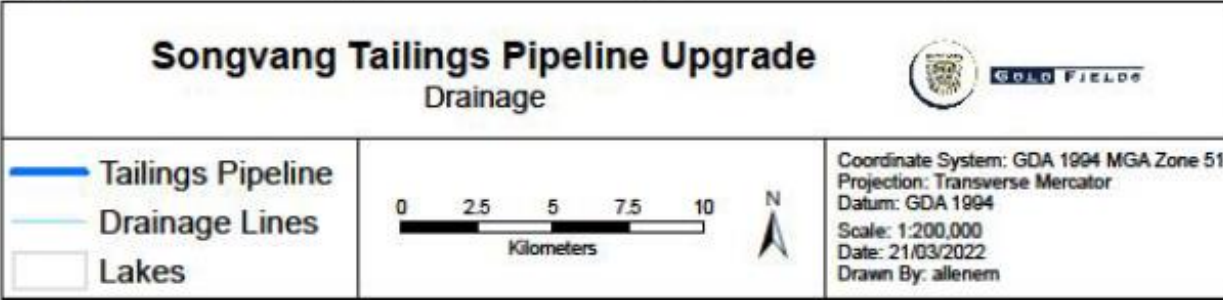
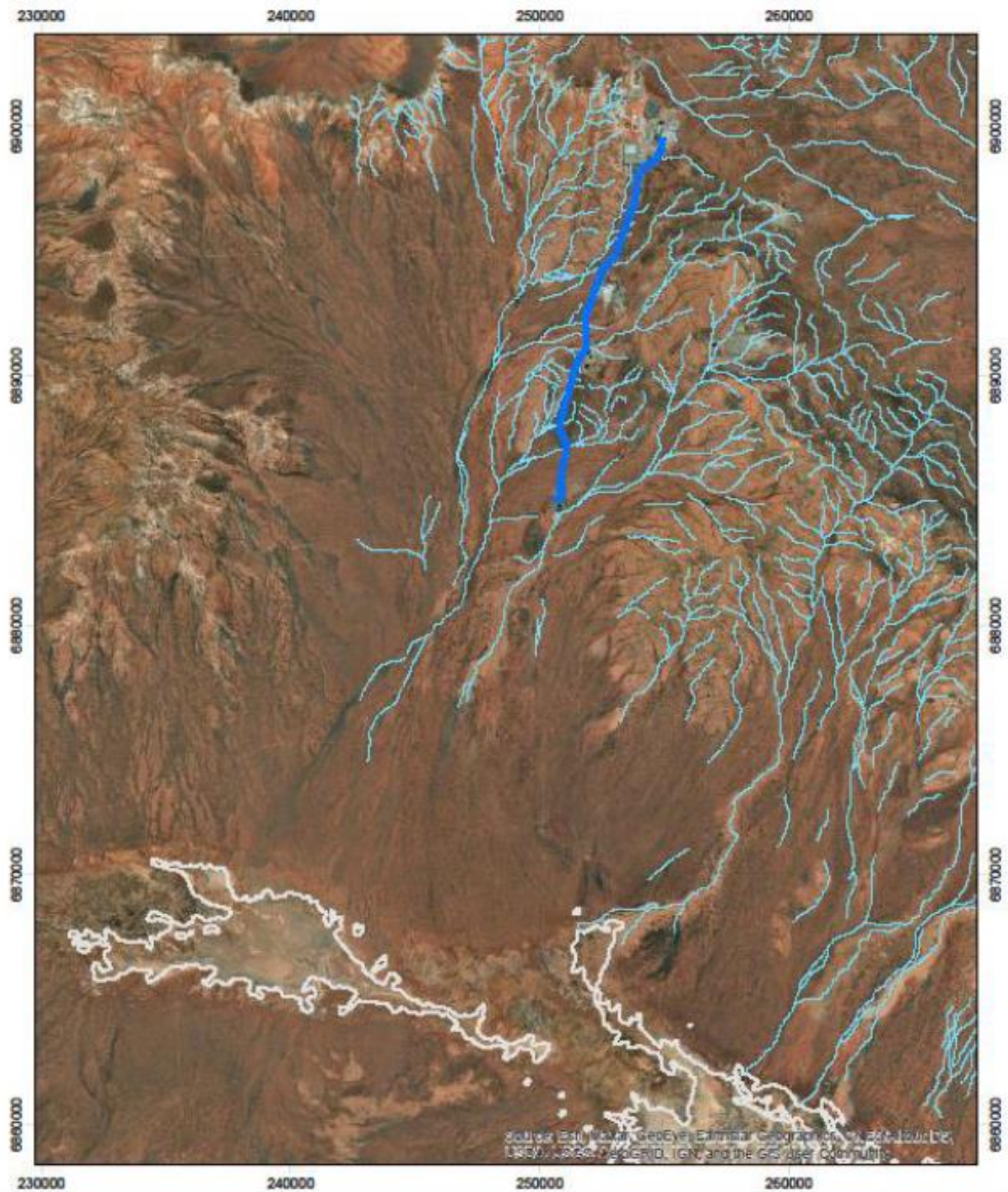


Figure 2. Ephemeral creek lines near the tailings pipeline route

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 W6690/2022/1 that accompanies this decision report authorises construction and commissioning phase. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and time-limited operation

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Construction								
Construction of 10.6km pipeline (replacing existing pipeline)	Dust	Pathway: Air / windborne Impact: poor vegetation health/death of adjacent native vegetation	Adjacent native vegetation & priority flora Pastoral land	Refer to Section 3.1	C = Slight L = Unlikely Low Risk	N/A	N/A	N/A
Commissioning								
Commissioning of a 10.6km pipeline (replacing existing pipeline)	Tailings discharge (fine ore tailings and contaminated water)	Pathway: direct discharge to land Impact: poor vegetation health or death and contamination of ephemeral creek lines	Adjacent native vegetation	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Condition 1: design and construction requirements Condition 2 & 3: ECR conditions Condition 4 & 5: pipeline commissioning	The Delegated Officer considers the applicant's proposed controls sufficient in managing the risk of pipeline rupture and therefore they have been added to the works approval as regulatory controls. The Delegated Officer has also included environmental commissioning reporting to be prepared following the commissioning phase to ensure correct operations of the pipeline and additional infrastructure. As there is no TLO or licence amendment associated with this Works Approval, this report will provide proof that the risks associated with the operation of the pipeline have been sufficiently addressed. Refer to Section 3.3 for detailed information on commissioning phase/reporting
			Ephemeral creek lines		C = Moderate L = Unlikely Medium Risk			
			Priority flora		C = Moderate L = Unlikely Medium Risk			

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 Commissioning of the pipeline

3.3.1 Construction phase

The construction of this new pipeline will follow almost entirely the same route as the existing pipeline. The only expected changes to the route will be to bypass the booster pumps near the Redeemer TSF3 and minor changes within the bund of the EMU Processing plant to allow for the new piping and additional instrumentation. Due to this there will be no clearing required for the construction of this replacement pipeline. Existing bunds will be used and modified to be of sufficient size to contain increased volume carried in replacement pipeline.

3.3.2 Environmental Commissioning phase

After the construction of the pipeline and installation of additional instrumentation including, radiometric density and pressure controls, there will be a period of environmental commissioning proposed by the applicant. During this time, the operational quality of the pipeline and additional instrumentation will be tested to ensure correct functionality. The commissioning phase will be used to test the following:

- Pipeline structure and integrity
- Leak detection systems
- Correct calibration of pressure transmitters
- Automatic trip in the event of a leak or over operating pressures

Commissioning will commence in stages, designed to test pipeline integrity prior to the transfer of tailings discharge. The pipeline will be tested in two segments. The section from the processing plant to Redeemer TSF3 will be tested first, followed by operation of the entire length of the pipeline from the processing plant to Songvang TSF4. To reduce the consequences of potential pipeline leaks, each segment will be initially tested transferring process water for a period of one day. After the pipeline is determined to be functioning correctly, transfer of tailings discharge may commence.

3.3.3 Operations phase

The applicant has advised in their application that controls and operational requirements will not differ between potential time-limited operations for this pipeline and those already completed under the licence conditions. The Delegated Officer considers the risks associated with the pipeline operation will be sufficiently managed under existing licence conditions and the construction requirements outlined in this works approval. As there will be no departures from the current licence conditions regarding the operational requirements for this replacement pipeline, no time-limited operations will be included as part of this instrument.

The applicant plans to apply for an amendment to the Agnew Gold Mine operating licence to seek approval for an increase in the Category 5 processing plant throughput from 1,400,000 tpa to 1,500,000 tpa. Any additional risks associated with an increase in tailings discharge to the in pit TSFs at the Premises will be assessed during this licence amendment process.

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 29 June 2022	No comments received	N/A
Local Government Authority (Shire of Leonora) advised of proposal on 29 June 2022	No comments received	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal [29 June 2022]	DMIRS replied on 30 June 2022 stating that proposed activities of the works approval application do not appear to conflict with any Mining Proposals. They did state that it is the tenement holder's responsibility to ensure they have relevant approvals under the <i>Mining Act</i> for any activities associated with their mining operations. No further comments were made.	Noted.
Applicant was provided with draft documents on 30 August 2022.	Applicant replied on 8 September 2022, with minor comments on an administrative error in draft and wishing to waive the consultation period.	Noted and actioned.

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. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. *Environmental Protection Authority (EPA) 2018, Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual*, Environmental Protection Authority, Perth, WA.

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY	
Application type	
Works approval	<input checked="" type="checkbox"/>
Date application received	25/5/2022
Applicant and Premises details	
Applicant name/s (full legal name/s)	Agnew Gold Mining Company Pty Ltd (AGMC)
Premises name	Agnew Gold Mine
Premises location	Mining tenements M36/27, M36/32, M36/53, M36/55, M36/65, M36/150, M36/174, M36/248, M36/314 and M36/450 LEINSTER WA 6437
Local Government Authority	Shire of Leonora
Application documents	
HPCM file reference number:	2012/006836-1~3
Key application documents (additional to application form):	Environmental commissioning plan (page 40 of pdf) Proposed activities document (page 52 of pdf) Tailings pipeline detailed design report (page 57 of pdf) Tailings pipeline laboratory test work (page 87 of pdf) Emissions and discharges document (page 106 of pdf)
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	<p><u>Works approval</u></p> <p>Construction of a new tailings pipeline (replacement of existing tailings pipeline) to accommodate future planned increased tonnage and hydraulic demand. The upgrade will involve replacing the first ~10.6km of existing tailings pipe with larger bore, higher specification HDPE and limited steel pipe tying into the existing tailings line to the Songvang pit. New radiometric density and pressure control will be installed on the new pipeline within the plant bund.</p> <p>The pipeline will be along the same corridor as the previous pipeline and run from the Agnew Mine site to the Redeemer pit (TSF3) and Songvang pit (TSF4).</p> <p>Category 5 is already authorised under licence L4611/1987/11 for 1,400,000 tonnes per annual period. The applicant has advised a separate licence amendment will be submitted to apply for an increase to the assessed production capacity.</p>

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	1,400,000 tonnes per annual period	The applicant has advised a separate licence amendment will be submitted to apply for an increase to the assessed production capacity.

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 type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Planning approvals exempt under the <i>Mining Act</i>
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: N/A No clearing is proposed – existing pipeline corridor to be used.
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"/>	Licence/permit No: GWL64335(10) expires Jan 3, 2026 GWL55840(9) expires Dec 3, 2023

<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Regional office:</p>
<p>Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: N/A Priority: 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 checked="" type="checkbox"/></p>
<p>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>)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Mining Act 1978 Dangerous Goods Safety Act 2004</p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Classification: Awaiting classification Date of classification: N/A</p>