



EA AMENDMENT APPLICATION: RESPONSE TO NPM / OTHER ISSUES BARBARA PROJECT

PREPARED FOR
AERIS RESOURCES PTY LTD

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1 Introduction

AARC Environmental Solutions Pty Ltd (AARC) has been commissioned by Round Oak Minerals Pty Ltd to prepare an addendum to the environmental authority (EA) amendment application for the Barbara Copper Project (the Project), seeking to authorise underground mining. This document provides the necessary information to address the request for further information from the Department of Environment, Science and Innovation (DESI), and comprises an addendum to the information already provided to DESI as part of the originally submitted EA amendment application. The Project description has been revised to develop and undertake underground mining for approximately two years, until the end of 2026, and to ensure alignment with the critical parts of the approved Progressive Rehabilitation and Closure Plan (PRCP) for the Project.

The Project is owned and operated by Round Oak Minerals Pty Ltd, a wholly owned and operated subsidiary of Aeris Resources Limited (Aeris). The Project operates under EA EPML02840015, which authorises the mining and processing of copper ore.

1.1 Background

On 28 March 2024 (4 April 2024), Aeris resources Pty Ltd (Aeris) on behalf of Round Oak Minerals Pty Ltd, submitted an amendment application for an EA and PRCP schedule.

The amendment application is to allow the extraction, by underground means, of a copper-gold resource that remains beneath the existing South Pit.

The history of the amendment application process, to date, can be summarised as follows:

- 10 November 2023: first pre-lodgement meeting held with DESI.
- 13 March 2024: second pre-lodgement meeting presenting results of detailed investigations and assessments to support the underground and PRCP changes.
- 27 March 2024: Aeris provided a focused presentation on water balance and long-term void water quality to demonstrate no change in the post-mine land use (PMLU).
- 28 March 2024: submission of the amendment application with updated PRCP planning part and schedule.
- 18 April 2024: Notice provided by DESI of a Not Properly Made (NPM) decision.
- 29 April 2024: Aeris sought clarification on matters via email and various meetings.
- 30 May 2024: Preliminary re-submission of the amendment application to address NPM issues, including updated Supporting Information document, PRCP planning part and schedule.
- 6 June 2024: Aeris provided a post-submission presentation on the analytical groundwater modelling and sensitivity analysis approach.
- 26 June 2024: Aeris re-submitted the amendment application with an updated summary of management strategies targeted to achieve rehabilitation milestones, along with an updated Supporting Information document, PRCP planning part and schedule.
- 5th July 2024: DESI advised they had two outstanding issues related to the PRCP schedule being:
 - suggested modifications to the waste rock dump; and
 - concern that the proposed PRCP schedule timeframes would be unlikely to allow the achievement of a stable, safe, non-polluting and self-sustaining landforms.

In addressing these issues, and in consultation with DESI, Aeris has changed the proposed underground mining operation Project to be conducted in two stages. The information provided within this addendum document provides a description of Stage 1 of the Project now proposed and consolidates Aeris's responses to questions raised by DESI through both the formal Not Properly Made decision notice as well as the outstanding issues raised formally by DESI in their correspondence date 15 August 2024.

2 Updated proposal description

Aeris Resources plans to extract a significant copper-gold resource that remains under the South Pit, and from the extension of mineralisation to the north, by underground (UG) mining. The original EA amendment application proposed transitioning to underground mining via a decline in the South Pit. The mining method was proposed to be undertaken by sub-level open stope operation, using waste to backfill the stopes. The stopes have been designed with 25 m sub-level intervals to a maximum stope height of 100 m. Sequence of mining is bottom-up to provide a working platform for subsequent stopes following the waste backfilling process. Prior to mining within 50 m of the of the pit floor (crown pillar) from underground, the South Pit would need to be dewatered resulting in the delayed recovery of water return in the voids post mining.

To address DESI concerns, the underground mining proposal has been reconfigured to comprise two stages, with Stage 1 only the subject of this EA amendment application. The second stage refers to additional underground mining and activities to recover the resource, which Aeris will seek approval for in the future.

The first stage of mining, proposed to be undertaken from approximately January 2025 to January 2027, (the subject of this amendment application), is described as:

- underground mine development, surface and underground drilling for mineral resource definition, and stoping (refer to Figure 1);
- the crown pillar will be retained (pits will remain as water storages);
- Non-acid Forming (NAF) waste from the development will be hauled to the existing waste rock dump (WRD) for temporary storage (250,000 t), with Potentially Acid Forming (PAF) waste (40,000 t) hauled to the RoM Pad for temporary storage prior to being returned underground for ground support or permanent disposal;
- there will be no movement of in-situ waste rock from the existing WRD as fill for underground stopes during Stage 1 of mining (the waste generated by underground mine development will be sufficient for stope fill); and
- should mining end at Stage 1 (and Stage 2 not proceed), the mining domains will become available for rehabilitation as per the PRCP schedule.

Figure 1 illustrates Stage 1 underground mining activities, as envisaged at the end of December 2026. It indicates one year of development and one year of underground mine production. There are no material differences from the initial life of mine (LOM) proposed; it is only the first two years of mining as previously presented in the EA amendment application, and is referred to as Stage 1.

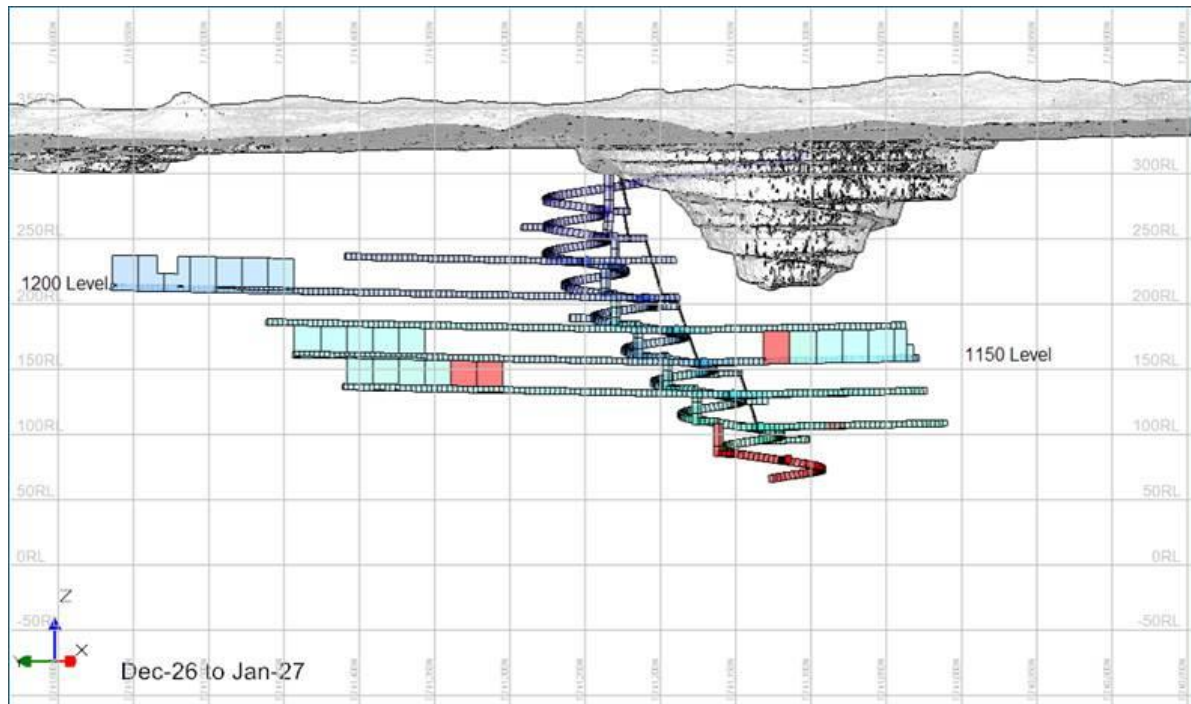


Figure 1: Barbara Mine, Stage 1 Long Section as at January 2027

Stage 2 of underground mining will require a further amendment to be applied for and approved during the Stage 1 mining period, to allow mining to continue. Stage 2 (Figure 2 and Figure 3) is proposed to include as a minimum:

- Underground mining (production) advancing upwards from the 1110 Level with the eventual removal of the crown pillar below the South Pit (Figure 2). The mining block under the South Pit from the 1110 Level to the pit floor includes the Project's highest-value ore.
- Continuation of mining in the North Pit to recover remnant ore.
- Waste rock storage and use of waste (NAF) sourced from mining to be used as a cover system material on the WRD necessitating a modified WRD landform design.
- An extended PRCP timeframe to accommodate Stage 2 mine life and future life of mine development.

The first 12 months of Stage 2 is illustrated in Figure 2. The end of mine life, as it is currently defined, as presented previously in the EA amendment application and the subject of the supporting studies, is illustrated in Figure 3.

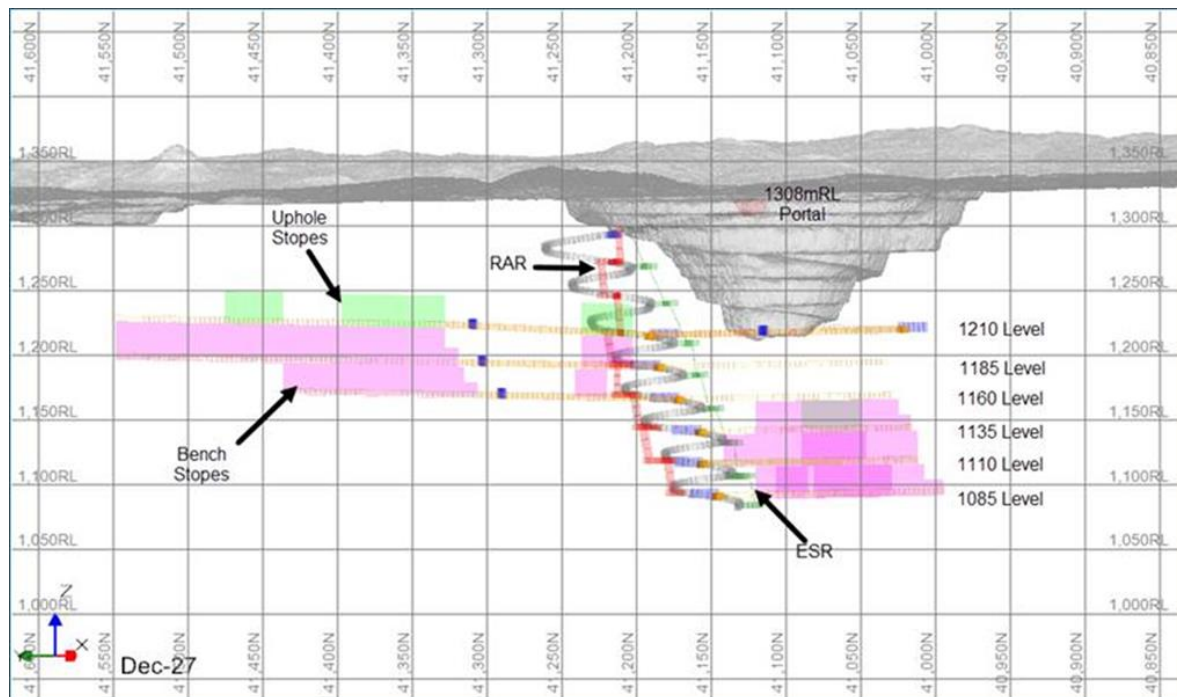


Figure 2: Barbara Mine, Stage 2 long section, as at January 2028

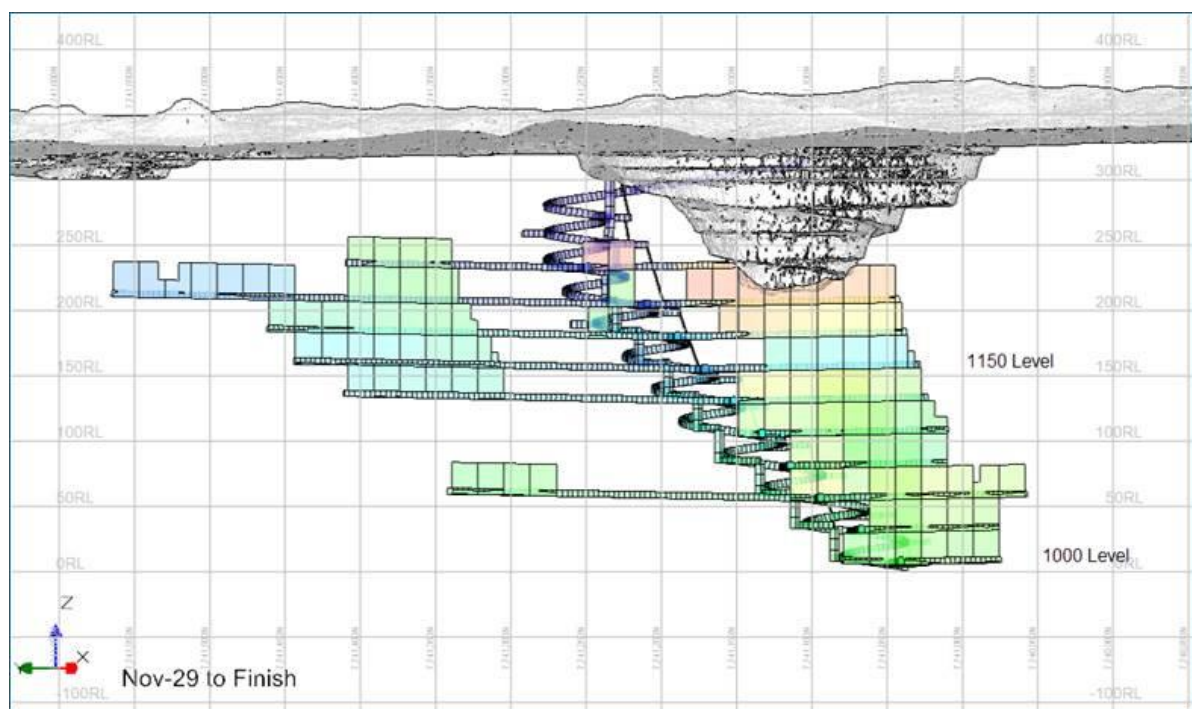


Figure 3: Barbara Mine, Stage 2 long section as at November 2028 (mining to level 1210 undertaken)

2.1 Schedule of proposed Stage 1 activities

The proposed Stage 1 activities are aligned with the proposed PRCP schedule (Appendix B, Figure 4).

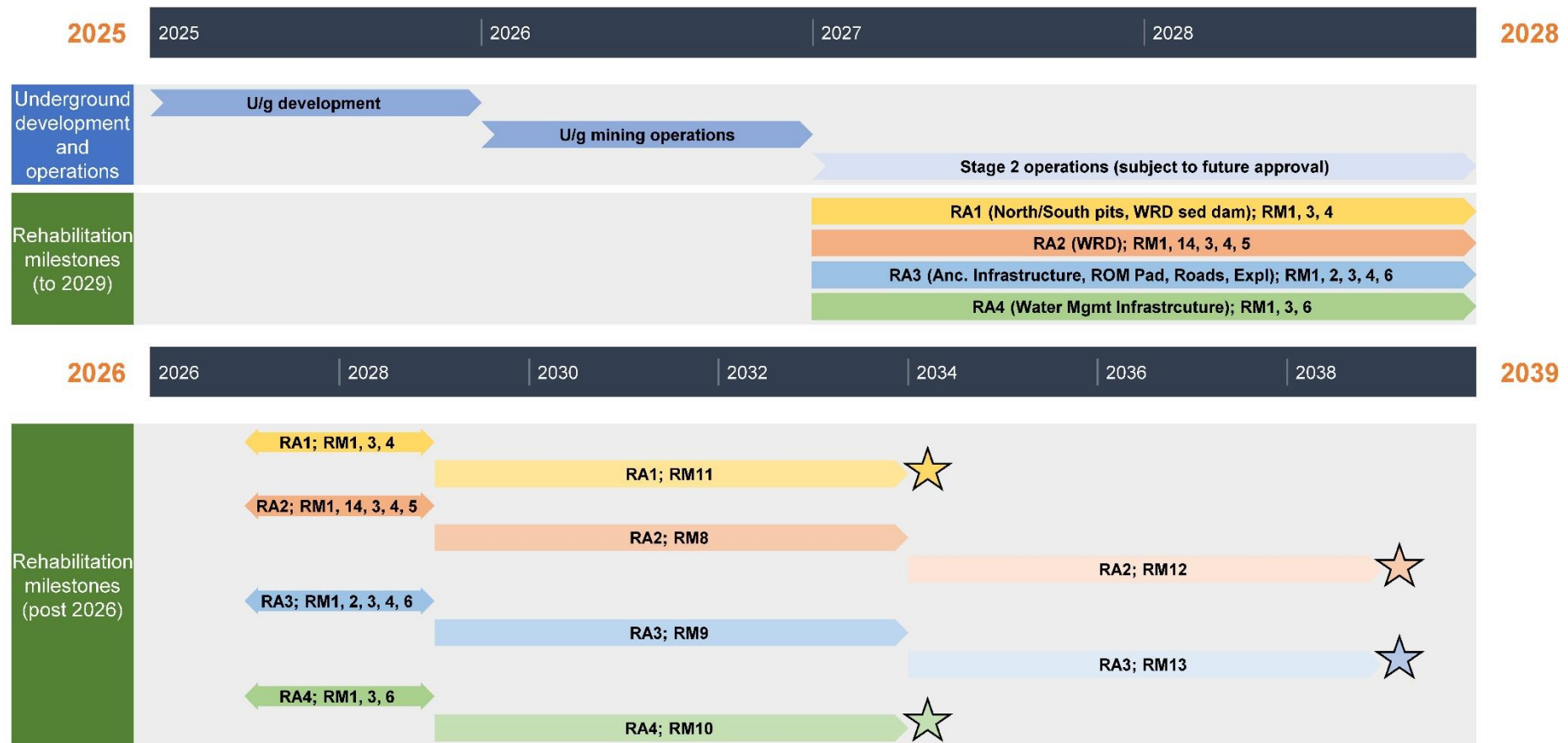


Figure 4: Staged operation timeline

3 Response to outstanding issues

A preliminary response to the not properly made decision dated was provided to the department on 26 June 2024.

Following that submission, further correspondence was received from DESI dated 15 August 2024 identifying a number of outstanding concerns with the EA amendment application. All but one of these concerns were related to the proposed removal of the crown pillar and the proposed level of 'compression' of milestone dates.

To address these concerns, Aeris has revised the proposed Project to retain the crown pillar and amend the mining dates to provide for Stage 1 of a staged underground mining approach, as detailed in Section 2 of this report.

A detailed response to the remaining outstanding issues is provided in the following subsections.

3.1 'Availability of water within water storages for sampling'

As outlined above in Section 2, the revised Project proposal, which retains the crown pillar, addresses this concern. The correspondence from DESI dated 15 August 2024 noted this issue as having been addressed via the updated 'staged approach' to the Project.

Stage 1 underground development will not affect the water balance of the WRD Sediment Dam, the North Pit and the South Pit. The water balance of the existing voids (WRD Sediment Dam, North Pit and South Pit) is considered negligible as (Appendix A):

- The Stage 1 underground development does not require dewatering of the South Pit.
- There is negligible hydraulic connectivity between the underground development and the South Pit, as the portal for the underground development is at 1308 mRL (which is above the water level in the pit), and as the crown pillar will remain in place.
- Given the limited size of the underground development, groundwater inflow and radius of drawdown are considered minimal and are not considered to affect the water levels in the South Pit and North Pit.
- The water demand for the Stage 1 underground development (e.g. for dust suppression is minimal and estimated to be 10 ML/month, i.e. ± 120 ML/year). Based on the South Pit storage curve (Figure 5), this volume can be sourced from the South Pit without significantly affecting the water level in the South Pit.
- There is no requirement to transfer/use water from the North Pit or WRD Sediment Dam for the Stage 1 underground development.

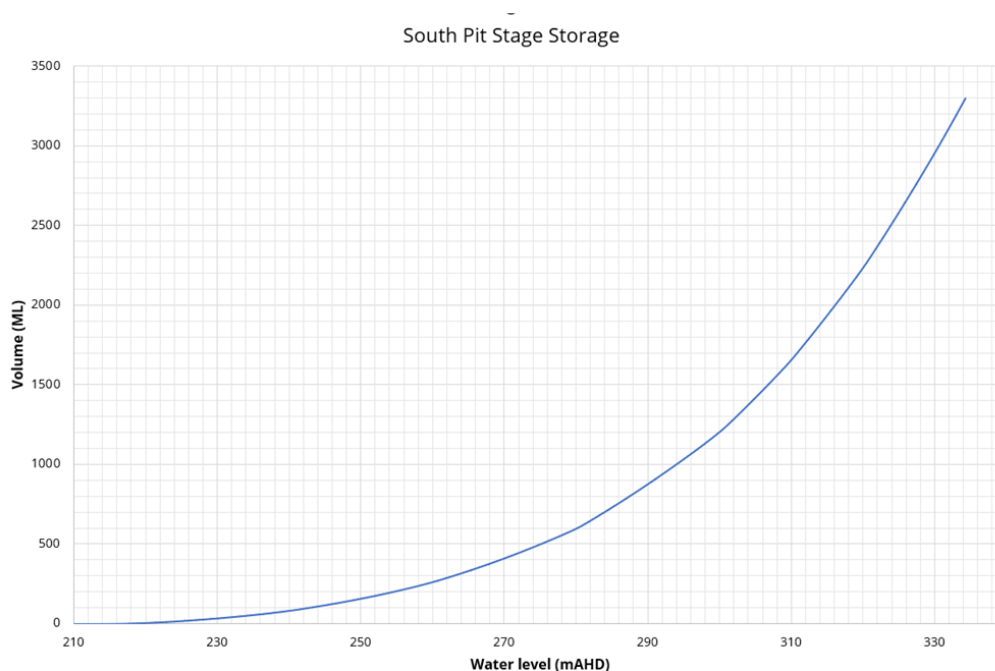


Figure 5: South Pit storage curve (WMV Environmental 2024)

3.2 'Ability to achieve water sampling criteria'

3.2.1 DESI commentary

DESI noted in their correspondence dated 15 August 2024, that the current, endorsed PRCP schedule has rehabilitation milestones RM11, RM12 and RM13 requiring five (5) consecutive years of water storage, groundwater and surface water monitoring. Further noting that the proposed PRCP schedule compresses the timeframe to achieve this from five (5) years to three (3) years.

DESI further noted that *Table 8-7 Summary of management techniques*, provided by Aeris as part of their 26 June 2024 submission, provided a justification that water sampling would commence during operations to provide the continuous data set required for RM11 and RM13. DESI then stated that information within RM12 does not specifically state how the consecutive years of data will be achieved, and that, as these criteria relate to demonstrating achievement of PMLU, and the intent is to demonstrate that rehabilitation is successful; it is unclear how water sampling during operations is suitable and applicable and would need to be further addressed.

DESI further indicated that, depending on how the staged approach might impact timeframes (e.g. if the commencement date of the rehabilitation milestones can be brought forward), then the proposed timeframes may not require such compression. DESI stated a requirement that, regardless of the proposed commencement dates, any compressed timeframes would need to be accompanied by justification, including water modelling, showing that the water quality limits within the PRCP schedule would be able to be achieved.

3.2.2 Aeris response

Aeris notes DESI's concerns in relation to the compressed timeframes proposed within the original EA amendment application. To address this, Aeris has amended the Stage 1 proposal to shorten the mining operations timeframe to two (2) years ending in December 2026 (refer Section 2), thereby retaining the current intermediate and final milestone dates nominated in the PRCP.

Water balance modelling of the voids undertaken in 2023 (ATC Williams), was reviewed in WMV Environmental 2024 (Appendix A). There are no constraints on water sampling opportunities at the North Pit,

South Pit, and WRD Sediment Dam, as these voids will not run dry during or after Stage 1 underground development, and water levels will rise to achieve an equilibrium level. Therefore, the requirement for quarterly monitoring over a minimum of five consecutive years under rehabilitation milestone RM11 can be achieved.

An assessment of the long-term water quality criteria in the voids was undertaken by WMV Environmental (Appendix A). The assessment indicates that the modelled solute concentrations at all times, and including for Stage 1) and for both models (i.e. mixing and equilibrium models) remain below the applicable ANZECC 2000 Water Quality Guideline values for livestock watering and the PRCP schedule PRCP EPML02840015 – Table 5: Water quality limits for North and South Pits and WRD Sediment Dam. Further assessment of final void water quality undertaken included the statistical extrapolation of the water quality modelling results from 55 years to 2000 years. The statistical assessment indicates that the long-term (200-yr) water quality levels remain below the adopted guidelines.

In summary, for each of the rehabilitation areas RA1, RA2, RA3 and RA4, where the current approved date that the nominated area becomes available is proposed to be modified from 10 December 2022 to 10 December 2026. All other milestone schedule dates remain as currently approved.

This approach provides the equivalent duration already approved within the PRCP to achieve the final critical milestone criteria. Table 1 identifies the milestone activities that will be subject to a compressed timeframe and highlights that impacted activities are only those that rely on physical earthworks or decommissioning activities that are able to be completed within the two (2) year period now nominated. The additional risk associated with this amendment on these rehabilitation areas can be readily mitigated through sufficient forward planning.

This Project amendment addresses DESI's concerns regarding the ability of the Project to achieve the water quality criteria nominated.

Table 1: Implications associated with later 'date area is available'

Rehabilitation area	Milestone	Milestone activities	Justification
RA1 (Water storage)	RM1	Infrastructure decommissioning	With appropriate forward planning, the required activities can be completed within the 2 year period now nominated.
	RM3	Landform development and reshaping/ reprofiling	
	RM4	Surface preparation	
	RM7	Achievement of surface water requirements	Criteria requires APQ certification and ongoing RPEQ inspections as well as fencing/bunding and signage which can be achieved within this timeframe.
RA2 (Waste rock dump)	RM1	Infrastructure decommissioning	With appropriate forward planning, the required activities can be completed within the 2 year period now nominated.
	RM14	Installation of cover system/ cap	
	RM3	Landform development and reshaping/ reprofiling	
	RM4	Surface preparation	
	RM5	Revegetation (Native ecosystem)	
RA3 (Ancillary infrastructure, RoM pad, roads, exploration and	RM1	Infrastructure decommissioning	With appropriate forward planning, the required activities can be completed within the 2 year period now nominated.
	RM2	Remediation of contaminated land	
	RM3	Landform development and reshaping/ reprofiling	

Rehabilitation area	Milestone	Milestone activities	Justification
abandonment bund)	RM4	Surface preparation	
	RM6	Revegetation	
RA4	RM1	Infrastructure decommissioning	With appropriate forward planning, the required activities can be completed within the 2 year period now nominated.
	RM3	Landform development and reshaping/ reprofiling	
	RM6	Revegetation	

3.3 ‘Ability to achieve revegetation and soil targets specified within the PRCP Schedule’

3.3.1 DESI commentary

DESI noted that RM12 and 13 have criteria relating to revegetation and soil parameters and that, in the current, endorsed PRCP schedule, RA2 and RA3 are to achieve these criteria within five (5) years. DESI further noted that the proposed PRCP schedule compresses the timeframe to achieve these requirements within three (3) years, and that the ability to achieve the targets within the current, endorsed PRCP timeframes is supported by the *SLR Technical Memorandum* (dated 13 June 2023).

DESI noted that, in response to the NPM notice, *Table 8-7 Summary of management techniques*, provided by Aeris as part of their 26 June 2024 submission, justifies the compressed timeframe with the caveat that:

Achievement of target revegetation criteria is dependent on good climatic conditions and growth media preparation.

DESI indicated that the information provided to date does not provide confidence that criteria relating to revegetation and soil parameters can be achieved within the proposed compressed timeframe; based largely on the fact that previously provided information supported the current timeframes within the PRCP schedule. DESI indicated a requirement that information based upon site specific research and appropriately qualified person (AQP) advice would be expected to be provided to give confidence for acceptance of any compression to the endorsed timeframe.

3.3.2 Aeris response

As outlined at Section 3.2.2, the amended Project timeframe and retention of all approved milestone dates following the date that areas become available, addresses this concern.

3.4 ‘WRD final landform’

3.4.1 DESI commentary

On 7 August 2024, DESI highlighted that information provided to date did not provide clarity on the implications of the removal of NAF material from the WRD on the final landform design. It was stated that the information discussed, including implications on the final landform design model, capping methodology and slope and erosion rates of any altered design, should be included with the NPM response. It was further requested that, if the staged approach is elected, the final landform should reflect the correct amount of material required to be removed and utilised as backfill for the underground workings.

3.4.2 Aeris response

For the 'staged approach', as described in Section 2, with mining activities for Stage 1 to conclude in December 2026; there is an updated material balance for Stage 1 only that results in a net NAF waste rock surplus of 174,000 t. For the purposes of this application, it is proposed that this surplus material be rehandled underground.

Consequently, at the cessation of Stage 1 activities, there will be no change to the waste rock dump as described in the current, approved PRCP, including the final landform, capping methodology, waste rock dump slope gradients and lengths. There will therefore be no change to the erosion rates as estimated from the erosion modelling undertaken for the PRCP.

4 Responses to Not Properly Made decision

In consultation with DESI, Aeris has changed the proposed underground mining operation to be staged. Aeris has provided a response to each outstanding issue raised by DESI in their correspondence dated 15 August 2024. A complete set of responses is provided in Table 2.

Table 2: Not Properly Made (NPM) and additional responses

Ref.	Issue	DESI NPM Reason	Aeris Response
Information provided in response to outstanding issues post NPM response dated 26 June 2024			
OI1	Availability of water within water storages for sampling		Aeris has revised the Project proposal to a 'staged approach', which retains the crown pillar for Stage 1 (refer Section 2 of this report), addressing this concern.
OI2	Ability to achieve water sampling criteria	The current, endorsed PRCP schedule has RM11, RM12 and RM13 relating to five consecutive years of water storage, groundwater and surface water monitoring. The proposed PRCP schedule has compressed the timeframe to achieve this from 5 years to 3 years. Table 8-7 Summary of management techniques provides a justification that water sampling will commence during operations for RM11 and RM13 to provide the continuous data set (information within RM12 does not specifically state how the consecutive years of data will be achieved). As these criteria relate to demonstrating achievement of PMLU and the intent is to demonstrate that rehabilitation is successful, it is unclear how water sampling during operations is suitable and applicable and will need to be addressed. Depending on how the staged approach will impact timeframes (e.g. if the commencement date of the rehabilitation milestones can be brought forward), this timeframe may not require such a compression. Regardless of the proposed commencement dates, any compressed timeframes would need to be accompanied by justification, including water modelling, showing that the water quality limits within the PRCP schedule can be achieved for the period during operations	Aeris has amended Stage 1 of the 'staged approach' to shorten the mining operations timeframe to two (2) years, ending in December 2026 (refer Section 2 of this report). This allows the retention of the current intermediate and final milestone dates nominated in the PRCP (Appendix B).

Ref.	Issue	DESI NPM Reason	Aeris Response
OI3	Ability to achieve revegetation and soil targets specified within the PRCP schedule	RM12 and 13 have criteria relating to revegetation and soil parameters. In the current, endorsed PRCP schedule, RA2 and RA3 are to achieve these criteria within 5 years. The proposed PRCP schedule has compressed the timeframe to achieve this to 3 years. The ability to achieve the targets within the current, endorsed PRCP timeframes is supported by the SLR Technical Memorandum (dated 13 June 2023). In response to the NPM Notice, Table 8-7 Summary of management techniques was provided which justifies the compressed timeframe as below: <i>Achievement of target revegetation criteria is dependent on good climatic conditions and growth media preparation.</i> The information provided to date does not provide confidence that criteria relating to revegetation and soil parameters can be achieved within the proposed compressed timeframe. Particularly due to the previously provided information which supported the current timeframes within the PRCP schedule. Information based upon site specific research and AQP advice would be expected to provide confidence in any compression to the endorsed timeframe.	Aeris has amended Stage 1 of the 'staged approach' to shorten the mining operations timeframe to two (2) years, ending in December 2026 (refer Section 2 of this report). This allows the retention of the current intermediate and final milestone dates nominated in the PRCP (Appendix B).
OI4	WRD final landform	This issue was discussed on 7 August 2024, in which the department highlighted that information provided to date did not provide clarity on the implications of the removal of NAF material from the WRD on the final landform design. The information discussed during this meeting, including implications on the final landform design model, capping methodology and slope and erosion rates of any altered design, should be included with the NPM response. Please note that if the staged approach is elected, ensure that the final landform reflects the correct amount of material required to be removed and utilised as backfill for the underground workings.	For the 'staged approach' as described in Section 2 of this document; with mining activities to conclude in December 2026, updated material balances result in a net NAF waste rock surplus of 174,000 t. This surplus material is to be rehandled underground. Consequently, at the cessation of Stage 1 activities, there will be no change to the waste rock dump as described in the current, approved PRCP, including the final landform, capping methodology, waste rock dump slope gradients and lengths. There will therefore be no change to the erosion rates as estimated using erosion modelling provided for the PRCP.

Ref.	Issue	DESI NPM Reason	Aeris Response
Information previously provided 26 June 2024 in response to NPM notice dated 18 April 2024			Please note that references below relate to the original Supporting Information document unless otherwise indicated.
1	Section 226(1)(d) An amendment application must describe the proposed amendment	In reference to the proposed amendments to the Environmental Authority (EA), proposed amendments relating to blasting noise limits were not described. Application supporting document titled 23B044_Barbara (EA Amendment) (V1 Aeris) states that “It would be preferable, particularly during the initial stages of development, to be able to conduct development blasting at any time...If this request is likely to trigger a major amendment, then ignore it”. This request is unclear as the applicant has provided proposed amendments to Schedule D – Table D2 Blasting noise limits being inclusion of blasting between 6pm to 7am without information describing the specific amendment or the reasons behind. It is not clear what amendment is sought in relation to blasting.	Appendix G has been updated to remove statement, and the supporting information more clearly states that it is a condition conversion to the blasting limits for UG mining (Section 3.2). Justification for this amendment has been included (i.e. to allow blasting at shift changes, when there are no personnel in the blasting area).
		In reference to the proposed amendments to the Progressive Rehabilitation and Closure Plan (PRCP) schedule, the submitted PRCP schedule had amendments to rehabilitation milestones (RM) and milestone criteria (MC) not described in the application form or the application supporting information being: • Amendment to the date available for RM11 in Rehabilitation Area (RA)1 • Amendment of commencement dates of RA2, RA3 and RA4 to 2024 and 2028 (inconsistent commence dates stated) • Amendments to MC in every RM including: - o amendments of words within each criterion; - o removal of criteria including soil testing, erosion rate, growth media depth, landform shaping, waste rock dump (WRD) design, ongoing water monitoring requirements and; - o addition of criteria including tree stem count, ground cover species and landholder agreement. • Removal of all footnotes and tables from the PRCP Schedule. A description, information or justification of the abovementioned undeclared amendments has not been provided in the application.	PRCP schedule (Appendix B) has been updated to reflect the approved schedule, including footnotes and tables. This includes adding the portal and vent fan in RA1, updating RM1 to include backfilling of the portal and sealing of the vent fan, and updating the timings for each RA as per Section 3 of this addendum report. Schedule timings have been amended to reflect the current mine schedule and reduce risk from any mining delays to ensure that PMLUs can be achieved by their required completion dates.

Ref.	Issue	DESI NPM Reason	Aeris Response
		All proposed amendments must be described in the application form and/or the application supporting documents. Note – the application form submitted on 4 April 2024 was on a superseded version. The current version of the form must be utilised in the response to this Notice.	An updated application form was submitted 30 May 2024. (DESI updated the form based on the initial submission, and this was followed up with further discussions/emails outlining that a new form was not required. The new form is required for any submission after NPM due date 19 August 2024.)
2	Section 226A(1)(f)(ii) The amendment application must include an assessment of the likely impact of the proposed amendment on the environmental values, including details of emissions or releases likely to be generated by the proposed amendment	The application did not consider the impacts of the proposed amendment on all environmental values (i.e., air, acoustic, land, land use and waste, wetland, water and groundwater) including: - Details of any emissions or releases likely to be generated by the proposed amendment: - The impact of vibration from blasting and air and noise emissions on land environmental values being mapped Matters of State Environmental Significance (MSES) or Environmentally Sensitive Areas (ESA) values within and surrounding the tenure. - Section 6.2.2.3 of the application supporting document provides an assessment of blasting emissions based on 51 blasts per year (p. 31). However, Appendix G Memorandum: Supporting Technical Information for Potential Impacts from Change in Blasting Practices states that their assessment is based upon 1,340 blasts per year (p. 1204). Therefore, it is unclear how many blasts are proposed for this application and which of these assessments are valid for the purposes of describing the emissions or releases likely to be generated by this amendment. Provide details of any emissions or releases likely to be generated by the proposed amendment, with consideration to mapped MSES and ESA values. Clearly state predicted number of blasts per year to be assessed for the proposed underground operation and provide modelling and assessments based upon the stated number of blasts.	The impact of vibration from blasting and air and noise emissions on land environmental values, namely MSES and ESA has been included in the Supporting Information document. There are no ESAs within the mining lease or within close proximity to the operations (Section 6.1.1) . MSES that are mapped within the ML and / or within 10 km of the ML (Section 6.1.1.1 and Figure 4) and the supporting information considers how they may be potentially impacted by air emissions (Section 6.2.3.1), or blasting and noise emissions (Section 7.1.2). Generally impacts are assessed as no greater than those assessed for open cut operations. A more detailed description of blasting emissions and the distances at which EA limits can be met (Section 7.1.2). In the Supporting Information document, the emissions from blasting Section has been updated (Section 6.2.2.3). An NPI report has been attached, with emissions that better represent what is expected from Barbara UG. There were less blasts in the NPI reporting year than the 'peak per year' amount (1,340), but significantly more explosives were used, making it more representative of what is expected from Barbara underground mining.

Ref.	Issue	DESI NPM Reason	Aeris Response
3	Section 226A(1)(f)(iii) The amendment application must include an assessment of the likely impact of the proposed amendment on the environmental values, including a description of the risk and likely magnitude of impacts on the environmental values	The application did not provide a description of the risk and likely magnitude of impacts on the environmental values: South Pit's Consequence Category Assessment (CCA) is currently 'significant' according to the EA. Considering that stopes are proposed to daylight into the Pit and the crown pillar will be removed, effectively joining South Pit to underground workings, an assessment of this change on the CCA is required to determine the risk and likely magnitude of impacts to the regulated structure as a result of the proposed amendment.	A consequence category assessment (CCA) has been completed for the South Pit and underground by ATC Williams Pty Limited (ATC Williams). Section 8.2.3 has been updated with the CCA outcome. The reassessed CCA for South Pit (underground) resulted in a LOW consequence category on the basis that: - there is low risk of dam break failure (not considered a credible failure scenario); - low risk of failure to contain -overtopping since the water balance model indicates peak water surface elevations in the void would not reach the portal (310 m AHD) or spill; and - low risk of failure to contain (seepage) since the pit is a sink. The underground workings and South Pit will be a containment (sink) with no modelled overtopping that will be suitable as a water storage for livestock watering (achieve PMLU).
		A risk assessment of impacts from underground mining, including drawdown impacts and blind stopes, to terrestrial groundwater dependent ecosystems (GDEs) has not been provided.	The risk assessment (Appendix A) has been updated to include the potential impacts to GDEs and a description of these impacts has been provided in Section 8.2.5.
		Appendix G - Memorandum: Supporting Technical Information for Potential Impacts from Change in Blasting Practices is premised upon the closest sensitive receptor being 23km away and an assessment from their open-pit blasting in 2014. The application supporting documents did not consider impacts from noise and vibration to land environmental values i.e. MSES or ESA values mapped within or nearby the tenure. Additionally, as open-pit and underground blasting pose different potential environmental impacts, the assessment from the open-pit blasting does not describe the likely impact of the proposed amendment on the environmental values. Provide a description of expected and modelled impacts from noise and vibration associated with underground blasting on environmental values including mapped MSES or ESA values within and nearby the tenure.	Appendix F (previously G) has been updated to clarify that standard conditions for underground mining will be adopted. The supporting information has been updated to demonstrate that there are no ESAs within the ML (Section 6.1.1). There are MSES that are within the ML and / or within 10 km of the ML (Section 6.1.1.1 and Figure 4). Potential impacts have been assessed on these environmental values for air emissions (Section 6.2.3.1), blasting and noise emissions (Section 7.1.2).

Ref.	Issue	DESI NPM Reason	Aeris Response
		Appendix N - Calibrated erosion model report (WEPP) for the Waste Rock Dump is dated 2021 and does not appear to include the proposed amendment to utilise waste rock from the WRD as backfill of the stope voids or the additional waste non-acid forming (NAF) material as cover for the WRD (as described in s 9.2.1 of the application supporting document). An updated erosion model was not provided with the application nor was there any information regarding the applicability of this model considering the proposed amendment. Therefore, an assessment of the risk and likely magnitude of impacts on the environmental values (i.e., land, water, groundwater and wetlands) associated with the removal of waste rock from the WRD, the disposal of WRD in the underground stopes and WRD final cover has not been provided. Provide a description of potential environmental harm to values (i.e., land, water, groundwater and wetlands) associated with the removal of waste rock from the WRD, the disposal of WRD in the underground stopes and WRD final cover.	Erosion modelling completed in 2021 is still applicable as the slope geometry of the WRD will not change for Stage 1. As indicated in Section 9.2.1, placement of PAF material UG has been considered in the groundwater report. As indicated in Section 9.2.1, the WRD final cover is NAF material (i.e. no change) and therefore, it is unlikely to result in any additional impact to identified EVs.

Ref.	Issue	DESI NPM Reason	Aeris Response
4	Section 226B An amendment application for a PRCP schedule must be accompanied by an amended rehabilitation planning part that complies with section 126C in relation to the proposed amendment. Section 126C(1)(e) A proposed PRC plan must for each proposed PMLU for land, state the proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule.	The application must, for each proposed post mining land use for land, state the applicant's proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule: - South Pit currently has a PMLU of water storage. The applicant has not provided information detailing how the proposed amendment, of commencing underground mining under South Pit, will continue to achieve this PMLU. - The Groundwater Technical Report (J23011-RP01 - BCP UG EA (Final v2.00)) provides void water quality modelling for 25 years. This timeframe is not considered sufficient to demonstrate that the PMLU can sustain a post-mine land use of water storage in the long-term. Provide void water modelling that demonstrates that the PMLU can sustain a post-mine land use of water storage in the long-term that supports the rehabilitation milestones.	PRCP Sections 4 and 4.2.1 state that the South Pit (including underground workings) will have a PMLU of water storage. The proposed Stage 1 provides sufficient time to achieve the PMLU in the longer term.. The results of the 2023 water quality model for the open cut are considered relevant and representative of the Stage 1 underground mining operations. Refer to PRCP Sections 6.1.2.1 and 6.1.4.2. Refer also WMV (2024(c)) provided as PRCP Appendix U(c). For clarity PRCP Section 6.9 has been updated to include reference to supporting sections of the PRCP. Section 6.9.1 provides rehabilitation methodology for the underground: the Portal will be backfilled with inert waste rock and a shotcrete bulkhead in front of the backfill and the vent fan will be decommissioned and sealed (RM1 items 11 and 12 in the schedule).

Ref.	Issue	DESI NPM Reason	Aeris Response
		Appendix E Memorandum: Barbara Total Carbon Assays provided within the supporting document notes that further samples are recommended and that pulp samples are awaiting further tests. Therefore, the veracity of the water quality modelling to demonstrate the PMLU can be achieved is unclear due to the possible lack of waste rock data its potential interactions with groundwater following deposition in the underground workings.	Appendix E has been updated to clarify that no further immediate testwork is required on the pulp samples and that Validation sampling as per the Waste Rock and Management Plan will be undertaken during operations to update the Total Sulphur % Block Model (standard industry practice). All waste rock identified > 0.3% Total Sulphur will be classified and handled as Potentially acid forming (PAF) as per the site's Waste Rock and Management Plan. Section 9.1.3 of the Supporting Document has been updated. Kinetic Leach Columns (KLC's) offer a more detailed evaluation of acid generation, salt and metal release than static tests, which is crucial for understanding waste behaviour and its potential environmental impacts. KLCs are more representative of site conditions as there is a continuous flow of water to simulate natural rainfall and / or groundwater flow. Because testing occurs at various intervals, they can quantify leaching rates for different contaminants over time which is critical for modelling and predicting long-term environmental impacts. The KLC were run over a 52-week period and leachate concentrations were either stable or declining at the end of this test period and below the ANZECC 2000 livestock drinking water guidelines . Time series charts are provided in PRCP Appendix U(a) Groundwater Technical Report - Appendix L. The long-term void water quality modelling assumes placement of both PAF and NAF underground as per the waste volumes generated by UG, considering volumes required for backfill and using the qualities generated from the KLC results, refer to PRCP Appendix T and U. The results of the mixing modelling indicate that groundwater quality in the UG voids remains below the relevant water quality guidelines values (livestock watering and PRCP criteria for voids) and that the underground workings and voids are suitable for a livestock watering PMLU.

		As the amendments to timeframes within the PRCP schedule have not been discussed within the supporting documents, the applicant has not stated proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones. Additionally, the applicant did not provide any justification that management practices will be implemented to make the reduced timeframes realistic and attainable. Discuss proposed amendments to timeframes within the PRCP schedule, including proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones. Provide justified management practices that will be implemented to make the reduced timeframes realistic and attainable.	Section 4.3 of the PRCP and schedule has been updated to clarify the schedule updates for amending timeframes. The schedule includes the portal and vent fan for underground in the South Pit as Rehabilitation Area 1 (RA1) and rehabilitation activities in RM1 as per the methods presented in section 6.8.2 and 6.9.1.1. The availability date of RAs have been adjusted to December 2026 and the remainder of the achievement dates have remained the same. The PRCP has been updated in Section 8.5 with Table 8-7 that provides a summary of the measures discussed in Section 8 to be undertaken in determining the achievement of each rehabilitation milestone, proposed management strategies and justification for assigned timeframes. Timeframes have been developed with consideration for the size of the RA, the activities applicable to the milestone and interim rehabilitation activities that are scheduled to occur or anticipated to be required prior to the area becoming available for rehabilitation. Assessment against completion criteria will be incorporated into the ongoing environmental management of the Project and assessment of the RAs for revegetation, water quality and achievement against PMLUs will be completed as part of the annual rehabilitation monitoring program as detailed in PRCP Sections 8.1, 8.2 and 8.3. The management strategies for engineering works consist of appropriate supervision, verification and audit in the form of inspections, reviews and /or assessment.
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Ref.	Issue	DESI NPM Reason	Aeris Response
5	Section 226B An amendment application for a PRCP schedule must be accompanied by an amended rehabilitation planning part that complies with section 126C in relation to the proposed amendment. Section 126C(1)(f) A proposed PRC plan must identify the risks of a stable condition for land mentioned in paragraph (e) not being achieved, and how the applicant intends to manage or minimise the risks	The application must identify the risks of a stable condition for land mentioned in section 126C(1)(e) not being achieved, and how the applicant intends to manage or minimise the risks: Appendix S - Hydraulic Assessment recommends creating a new gully at South Pit. However, Appendix Y - Geotechnical Assessment Underground Subsidence and the application supporting document do not appear to account for this. Appendix Y also identifies unstable zones around South Pit, however there was no assessment whether these zones will impact the post-mine land use. Additionally, it is unclear whether the geotechnical assessment within Appendix Y is conducted by an AQP (as defined in the EA) and therefore the veracity of the results cannot be confirmed. As the risks associated with achieving a stable condition for the land that may be impacted by the underground mining have not been appropriately addressed in the application, the application does not identify how to manage or minimise these risks. Identify risks associated with achieving a stable condition for the land that may be impacted by the underground mining including how to manage or minimise these risks.	PRCP Appendix Y and PRCP Section 6.8.2 has been updated. The diversion drain and the planned gully are situated outside the South Pit safety controls (abandonment bund). The potential subsidence /void instability zone is entirely located and managed within the South Pit abandonment bund and as such the gully does not impact any void or surface subsidence risk, therefore the PMLU can be achieved. Geotechnical Report (Appendix Y) completed by Appropriately Qualified Person (AQP)- Sidney Chishala MminEng, BminSc, MAusIMM (CP), RPEQ Geotechnical (Mining)- ID 15151 Senior Geotechnical Engineer-Technical & Studies (Aeris Resources). PRCP Section 6.10.2 includes the gully. Appendix R Risk Assessment has been updated to include this matter (access to voids) and technical report outcomes.

5 PRCP planning part amendments

An updated PRCP Planning Part accompanies this response. Updates to the PRCP Planning Part are confined to those changes relating to inclusion of the Stage 1 underground mining activities proposed; as well as any rehabilitation and closure implications outlined within this amendment application.

Appendix A. Water Balance and Water Quality Report

From: Willy Van Vaerenbergh
To: Gemma Brown, Principal Environment & Mine Closure Planning
Cc: David Eason, Senior Environment & Community Advisor
Date: 19 August 2024
Project: J23011 – BCP UG Stage 1 EA Amendment
Re: Water Balance and Water Quality Modelling Results

1 Introduction

1.1 Proposed underground development project

The Barbara Copper Project (BCP or the Project) is a former open-cut copper and gold mine located within Mining Lease (ML) ML90241. BCP is authorised under Environmental Authority (EA) EPML02840015 for resource activities relevant to mining metals (copper, lead, silver, zinc, gold and iron ore). The Project is an open-cut copper mine that has extracted approximately 772,000 tonnes of ore. The mine operated from June 2019 until March 2021 and was placed in care and maintenance in April 2021.

Round Oak Minerals Pty Limited (Round Oak Minerals), wholly owned by Aeris Resources Limited (Aeris), is the EA holder. Aeris plans to extract a significant copper-gold resource that remains under the South Pit through underground (UG) mining, with the development of the underground mine to be undertaken in two distinct stages, i.e. a, Stage 1 and Stage 2 development.

Stage 1 underground development

Stage 1 of the underground mine development would include surface and underground drilling for mineral resource definition and some stoping, as presented in [Figure 1](#). Relevant information regarding stage 1 is as follows:

- Stage 1 development would be undertaken over a 24-month period between January 2025 and December 2026/January 2027.
- Dewatering of the South Pit is not required.
- The crown pillar will not be removed during the Stage 1 development.
- NAF waste from the development (± 250 kilo tonnes) will be hauled to the existing waste rock dump (WRD) for temporary storage, with PAF waste (± 40 ktonnes) hauled to the ROM pad for temporary storage
- There will be no movement of in-situ waste rock from the existing WRD as fill for underground stopes during this stage of mining as the waste generated by underground mine development will be sufficient for stope fill, with surplus NAF, also from the underground development, to be rehandled underground in voids at the end of Stage 1.

Aeris is seeking a minor amendment of the current EA for the implementation of the Stage 1 development. Following the completion of the Stage 1 development, Aeris may decide to implement a Stage 2 development, which would likely require a major EA amendment. Alternatively, Aeris may decide not to proceed with the Stage 2 development, with the Project transitioning to rehabilitation and closure.

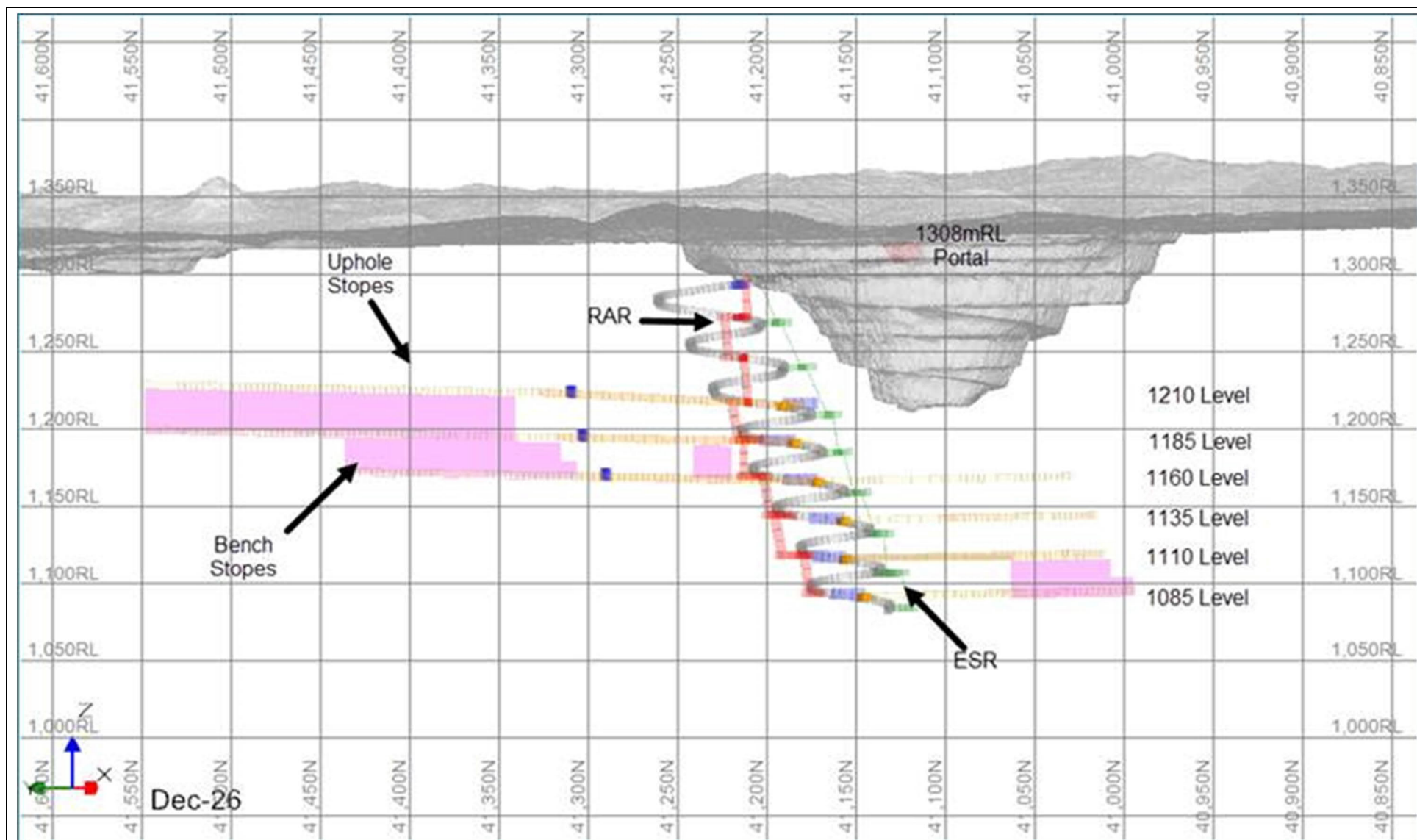


Figure 1 Stage 1 development long section (December 2016/January 2027)

1.2 Stage 1 EA amendment requirements regarding water sampling criteria

Aeris has undertaken a consultation process with the Department of Environment, Science and Innovation (DESI) regarding the submission and approval of a minor EA amendment application for the Stage 1 development. As part of this process, DESI provided feedback that Aeris needs to demonstrate that it can achieve the water sampling criteria as per the current endorsed Progressive Rehabilitation and Closure Plan (PRCP).

The currently approved PRCP Schedule (PRCP-EPML02840015-V1), effective from 23/10/2023, includes the following relevant rehabilitation milestones relating to achieving water sampling criteria:

- RM11 - Achievement of post-mining land use (Water Storage for Stock Water):
 - 3. Long-term water quality in the water storages (RA1) monitored quarterly does not exceed the limits specified in Table 5 for a minimum of 5 consecutive years.

2 Achieving RM11 criteria during/post Stage 1 development

2.1 Impact of Stage 1 underground development on void water balance

The impact of the Stage 1 underground development on the water balance of the existing voids (WRD Sediment Dam, North Pit and South Pit) is considered negligible as:

- The Stage 1 underground development does not require dewatering of the South Pit.
- There is negligible hydraulic connectivity between the underground development and the South Pit, as the portal for the underground development is at 1308mRL (which is above the water level in the pit) and as the crown pillar will remain in place.
- Given the limited scale of the underground development, groundwater inflow and radius of drawdown are considered minimal and are not considered to affect the water levels in the South Pit and North Pit.
- The water demand for the Stage 1 underground development (e.g. for dust suppression is minimal and estimated to be 10ML/month, i.e. ± 120 ML/year. Based on the South Pit storage curve (Figure 2), this volume can be sourced from the South Pit without significantly affecting the water level in the South Pit.
- There is no requirement to transfer/use water from the North Pit or WRD Sediment Dam for the Stage 1 underground development.

Based on the above, it can be concluded that the Stage 1 underground development will not affect the water balance of the WRD Sediment Dam, the North Pit and the South Pit. In fact, it can be considered that the timeframe for rehabilitation and closure monitoring of the voids has already started, provided that the Stage 2 underground development does not take place.

Therefore, the results of the water balance and water quality studies from the currently approved PRCP, which assumed no underground development, and the associated PRCP Schedule relating to the voids remain valid.

Reference is made to the following technical studies/reports that are included in the Project's PRCP Version 2.0, finalised in response to DESI's RFI:

- Appendix P: *"Barbara Copper Project Progressive Rehabilitation and Closure Planning – Water Management Plan and Water Balance Model"*. ATC Williams, March 2023 (Ref 118131.12)

- Appendix T: “Barbara Copper Project Progressive Rehabilitation and Closure Plan. Water Quality Assessment of North Pit, South Pit and WRD Sediment Dam”. WMV Environmental, March 2023)

2.2 Voids water balance modelling results

Water balance modelling of the voids not affected by underground mining was undertaken by ATC Williams in 2023.

South Pit

Modelled long-term water levels (Figure 3) indicate that the water level in the pit increases rapidly in the first 18 years (to 2040), with the rate of water level rise reducing by 2060 when a state of ‘dynamic equilibrium’ is achieved. The ‘dynamic equilibrium’ has minor variations throughout the subsequent years to account for periods of rainfall and evaporation. The mean (average) water level in the South Pit reaches a level of approximately RL 286.5 m to RL 287.5 m.

The water balance modelling indicates that the South Pit will not run dry.

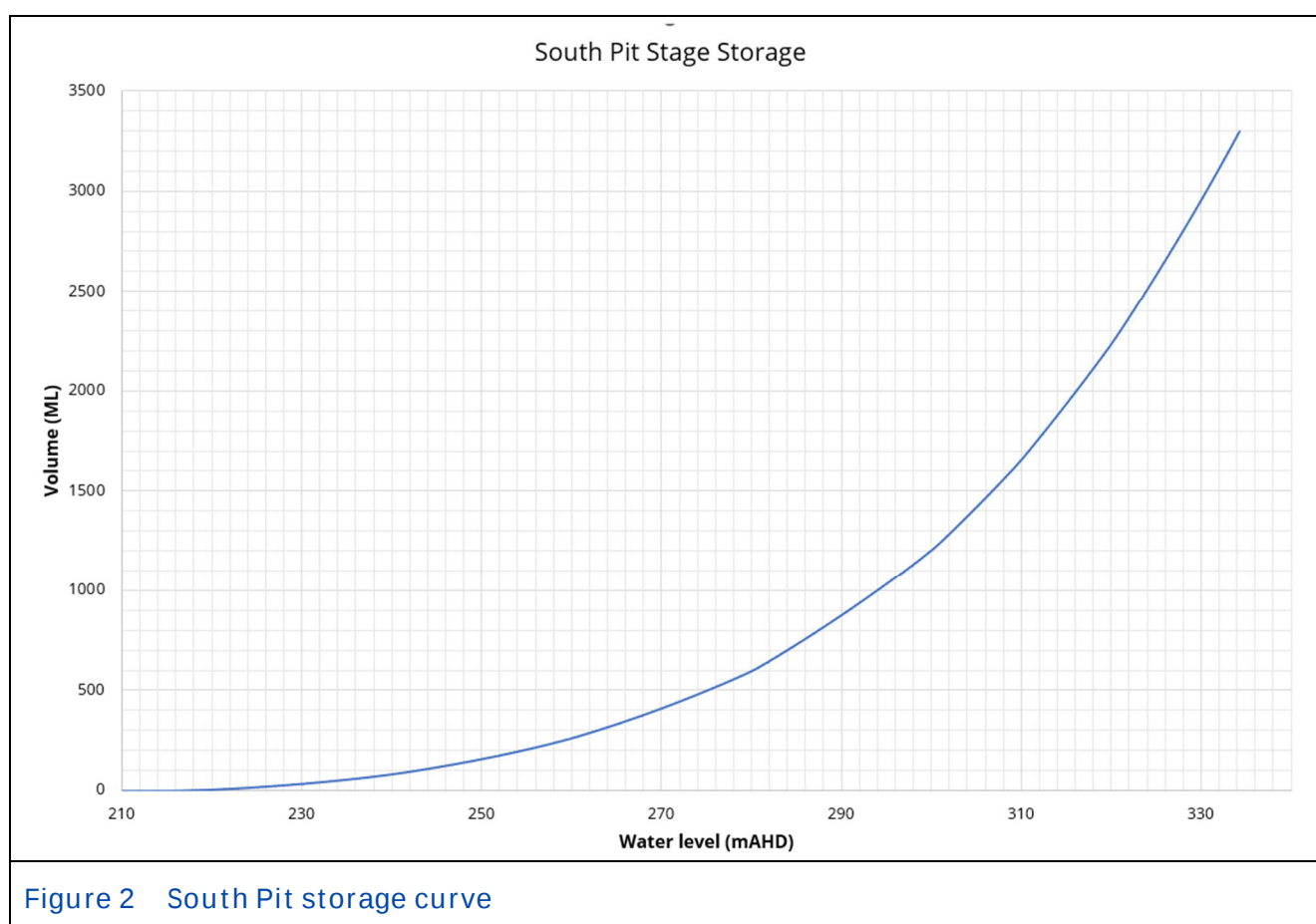


DIAGRAM 16: SOUTH PIT WATER SURFACE ELEVATION – SCENARIO 1

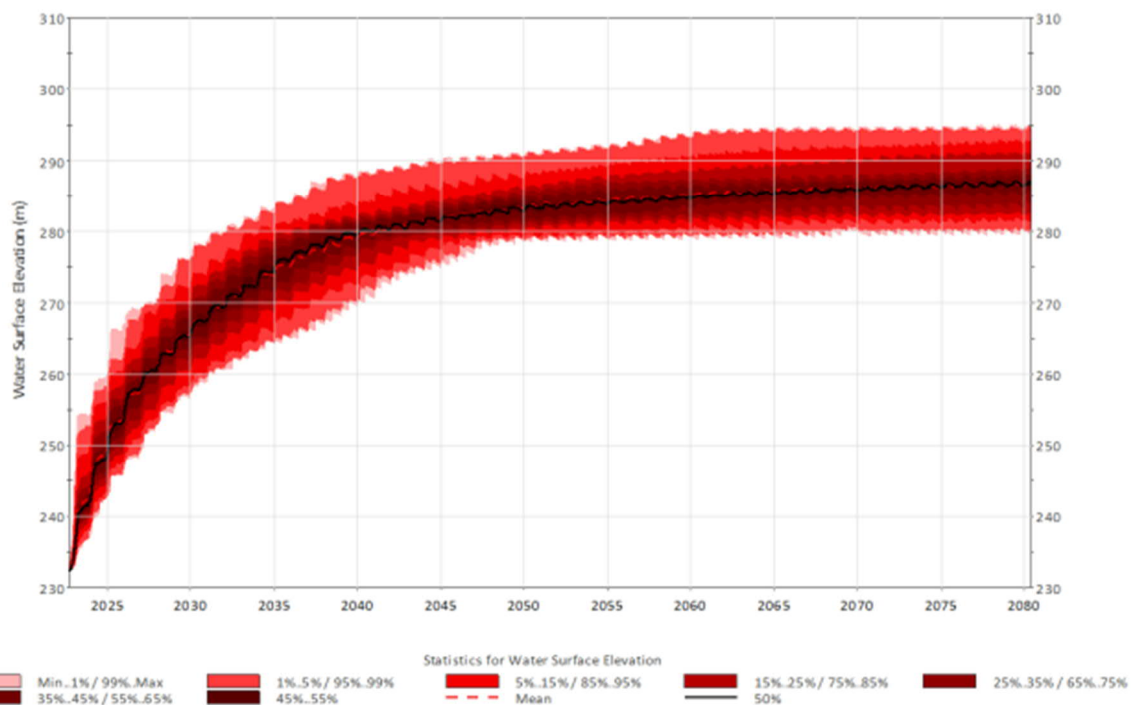


Figure 3 South Pit water levels (2022-2080)

North Pit

Modelled long-term water levels (Figure 4) indicate that the water level in the pit increases rapidly in the first 10-12 years (to 2033/35), with the rate of water level rise then reducing to achieve a state of 'dynamic equilibrium'. The 'dynamic equilibrium' has minor variations throughout the subsequent years to account for periods of rainfall and evaporation. The mean (average) water level in the North Pit reaches a level of approximately RL 308.5 m to RL 309.5 m

The water balance modelling indicates that the North Pit will not run dry.

WRD Sediment Dam

Modelled long-term water levels (Figure 5) indicate that the water level in the sediment dam increases rapidly in the first 5 years (to 2027) with the rate of water level rise then reducing to achieve a state of 'dynamic equilibrium'. The 'dynamic equilibrium' has minor variations throughout the subsequent years to account for periods of rainfall and evaporation. The mean (average) water level in the WRD Sediment Dam reaches a level of approximately RL 333 m to RL 334 m.

The water balance modelling indicates that the WRD Sediment Dam will not run dry.

DIAGRAM 13: NORTH PIT WATER SURFACE ELEVATION

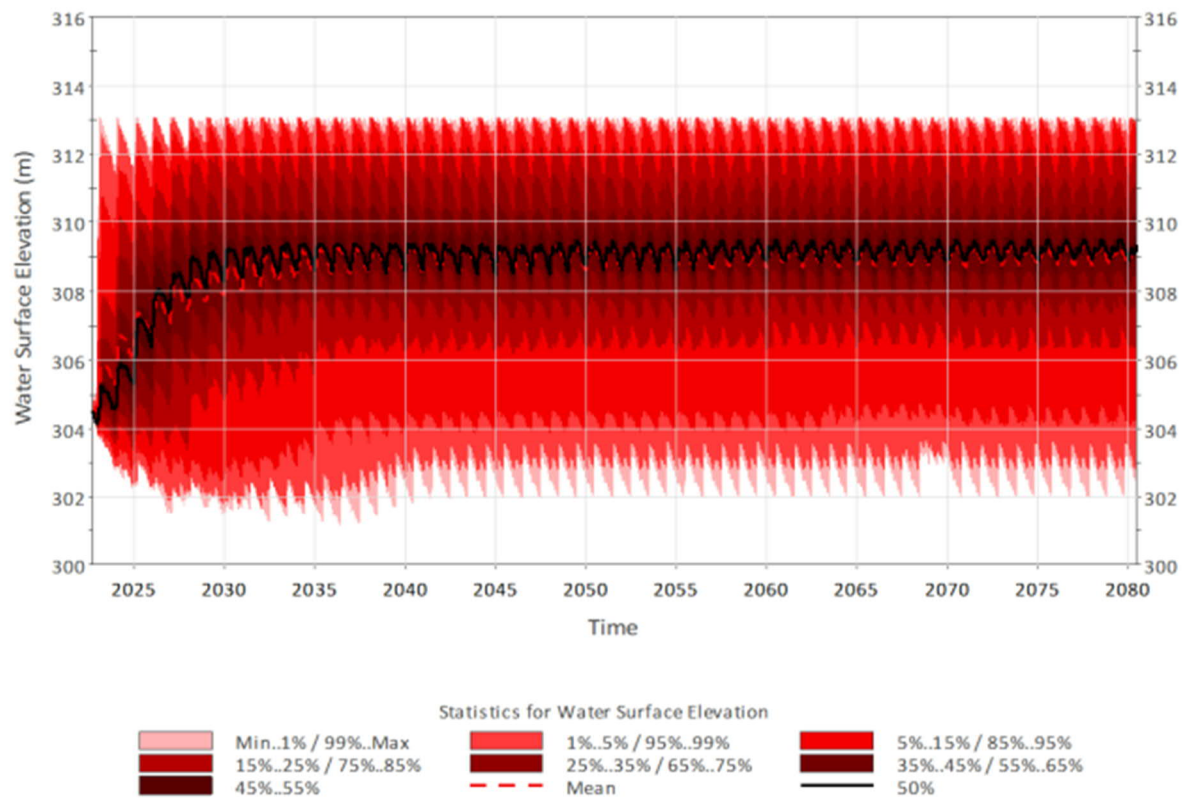


Figure 4 North Pit water levels (2022-2080)

DIAGRAM 20: WRD SEDIMENT DAM WATER SURFACE ELEVATION

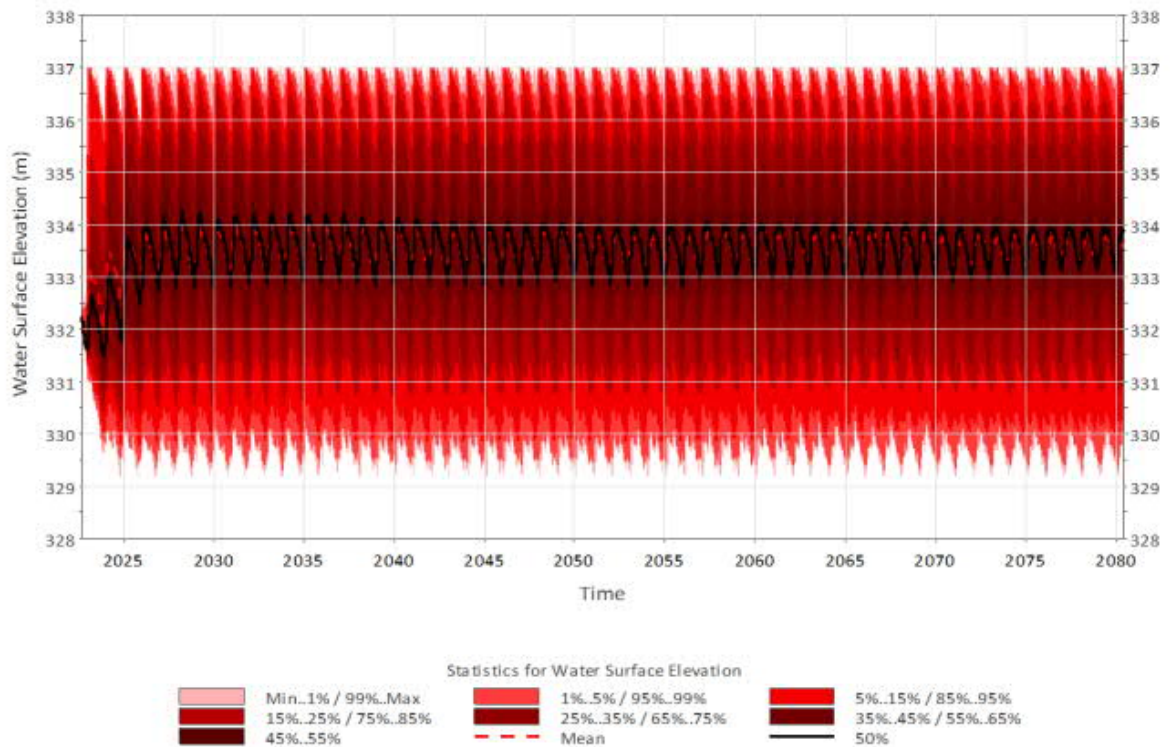


Figure 5 WRD Sediment Dam water levels (2022-2080)

Conclusion with respect to rehabilitation milestone RM11

There are no constraints on water sampling opportunities at the North Pit, South Pit, and WRD Sediment Dam, as these voids will not run dry during and after Stage 1 underground development, and water levels will rise to achieve an equilibrium. [Therefore, the requirement for quarterly monitoring over a minimum of 5 consecutive years under rehabilitation milestone RM11 can be achieved.](#)

2.3 Voids water quality modelling results

An assessment of the long-term water quality criteria in the voids was undertaken by WMV Environmental in 2023. The results of the assessment are presented in [Appendix A](#).

The assessment indicates that the modelled solute concentrations at all times and for both models (i.e. mixing and equilibrium models) remain below the applicable ANZECC 2000 Water Quality Guideline values for livestock watering and below the PRCP schedule PRCP EPML02840015 – Table 5: Water quality limits for North and South Pits and WRD Sediment Dam.

Further assessment of final void water quality undertaken by WMV Environmental in 2024, as documented in the technical memo “J23011 – BCP UG EA Amendment and PRCP. Groundwater impact assessment – sensitivity/uncertainty analysis and long-term water quality.” (WMV Environmental, May 2024) included the statistical extrapolation of the water quality modelling results from 55 years to 2000 years.

The statistical assessment indicates that the long-term (200-yr) water quality levels remain below the adopted guidelines.

Conclusion with respect to rehabilitation milestone RM11

The water quality assessments undertaken in 2023 and 2024 demonstrate that long-term water quality in the WRD Sediment Dam, North Pit and South Pit remain below the adopted water quality criteria. [Therefore, the requirement for long-term water quality in the water storages \(RA1\) monitored quarterly not to exceed the limits specified in PRCP Schedule Table 5 for a minimum of 5 consecutive years under rehabilitation milestone RM11 can be achieved.](#)

3 Limitations

This technical memo has been prepared by WMV Environmental Pty Ltd for Round Oak Minerals Ltd/Aeris Resources Limited and may only be used and relied upon by Round Oak Minerals Ltd/Aeris Resources Limited for the purpose agreed between WMV Environmental and Round Oak Minerals Ltd/Aeris Resources Limited as set out in this memo.

WMV Environmental Pty Ltd accepts no duty of care or liability to any third parties who may use or rely on this memo other than as expressly agreed by WMV Environmental Pty Ltd. Without limiting the foregoing sentence in any way, in no circumstances will WMV Environmental Pty Ltd be liable to any third party whether that liability arises in contract, tort (including negligence or breach of statutory duty) or otherwise for any loss whatsoever arising out of or in any way related to this site investigation project. WMV Environmental Pty Ltd consents to the Department of Environment, Science and Innovation considering this memo.

The services undertaken by WMV Environmental Pty Ltd in connection with preparing this memo were limited to those specifically detailed in the memo and are subject to the scope limitations set out in the memo.

The opinions, conclusions, and recommendations in this memo are based on conditions encountered and information reviewed at the date of preparation of the memo. Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this

memo. WMV Environmental Pty Ltd does not accept responsibility arising from, or in connection with, any change to the site conditions. WMV Environmental Pty Ltd is also not responsible for updating this memo if the site conditions change.

The opinions, conclusions and any recommendations in this memo are based on assumptions made by WMV Environmental Pty Ltd described in this memo. WMV Environmental Pty Ltd disclaims liability arising from any of the assumptions being incorrect.

For the purposes of this memo, WMV Environmental Pty Ltd may have relied upon previous investigations carried out and a review of available reports. It is assumed by WMV Environmental Pty Ltd that all relevant information and reports have been provided by those persons from whom it has been requested and that such information provided is accurate.

Any advice, opinions, or recommendations contained in this document should be read and relied upon only in the context of the document as a whole and should be considered current to the date of this document. WMV Environmental Pty Ltd believes that its opinions are reasonably supported by the testing and analysis that have been done and that those opinions have been developed according to the professional standard of care for the environmental consulting profession in this area at this time.

That standard of care may change, and new methods and practices of exploration, testing, analysis and remediation may develop in the future, which might produce different results. WMV Environmental Pty Ltd professional opinions contained in this document are subject to modification if additional information is obtained through further investigation, observations, or testing and analysis during any future assessment or remedial activities. This document may only be reproduced in its entirety.

Appendix A Results of water quality modelling

A.1 WRD Sediment Dam

Table 4 Long-term modelled (2080) water quality in WRD Sediment Dam

Parameter/ solute		ANZECC 2000 WQG for Livestock Watering	Mixing Model						Speciation Equilibrium Model					
			P25		P50		P75		P25		P50		P75	
Physico-chemical			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final
pH	6.5 - 8.5		8.22	7.91	8.22	7.91	8.22	7.91	8.36	8.36	8.36	8.36	8.36	8.36
TDS (mg/L)	4000		3004	2238	2918	2238	3023	2255	1397	162	1002	161	1426	189
Major Ions (mg/L)			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final
Calcium	1000		712.6	629.3	712.6	629.3	712.6	629.2	153.9	17.8	110.3	17.7	157.1	20.7
Magnesium	-		67.7	7.8	48.6	7.8	69.2	9.1	67.8	7.8	48.6	7.8	69.2	9.1
Sodium	-		159.0	18.4	123.9	18.3	162.3	21.4	159.0	18.4	123.9	18.3	162.4	21.4
Potassium	-		45.4	5.2	32.5	5.2	46.3	6.1	45.4	5.2	32.5	5.2	46.4	6.1
Sulphate	2000		1852.4	1548.2	1754.7	1548.0	1859.6	1554.7	715.2	82.7	512.4	82.3	730.2	96.2
Chloride	-		280.8	19.5	280.8	19.4	280.8	22.6	280.8	19.5	280.8	19.4	280.8	22.7
Fluoride	2		1.7	0.2	1.3	0.2	1.8	0.2	1.7	0.2	1.3	0.2	1.8	0.2
Bicarbonate	-		184.2	9.7	184.2	9.7	184.2	11.3	184.2	10.6	184.2	10.6	184.2	12.3
Metals (mg/L)			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final
Aluminium	5		0.0130	0.0000	0.0130	0.0000	0.0130	0.0000	0.0130	0.0000	0.0130	0.0000	0.0130	0.0000
Arsenic	0.5		0.0180	0.0006	0.0180	0.0006	0.0180	0.0008	0.0180	0.0006	0.0180	0.0006	0.0180	0.0008
Barium	-		0.0030	0.0002	0.0030	0.0002	0.0030	0.0002	0.0030	0.0002	0.0030	0.0002	0.0030	0.0002
Chromium	1		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Copper	0.5		0.0140	0.0016	0.0100	0.0016	0.0143	0.0019	0.0140	0.0016	0.0100	0.0016	0.0143	0.0019
Manganese	-		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Molybdenum	0.15		0.0712	0.0082	0.0510	0.0082	0.0727	0.0096	0.0713	0.0082	0.0510	0.0082	0.0727	0.0096
Nickel	1		0.0126	0.0015	0.0090	0.0014	0.0128	0.0017	0.0126	0.0015	0.0090	0.0014	0.0128	0.0017
Uranium	0.2		0.0838	0.0097	0.0601	0.0096	0.0855	0.0113	0.0838	0.0097	0.0601	0.0096	0.0856	0.0113
Zinc	20		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

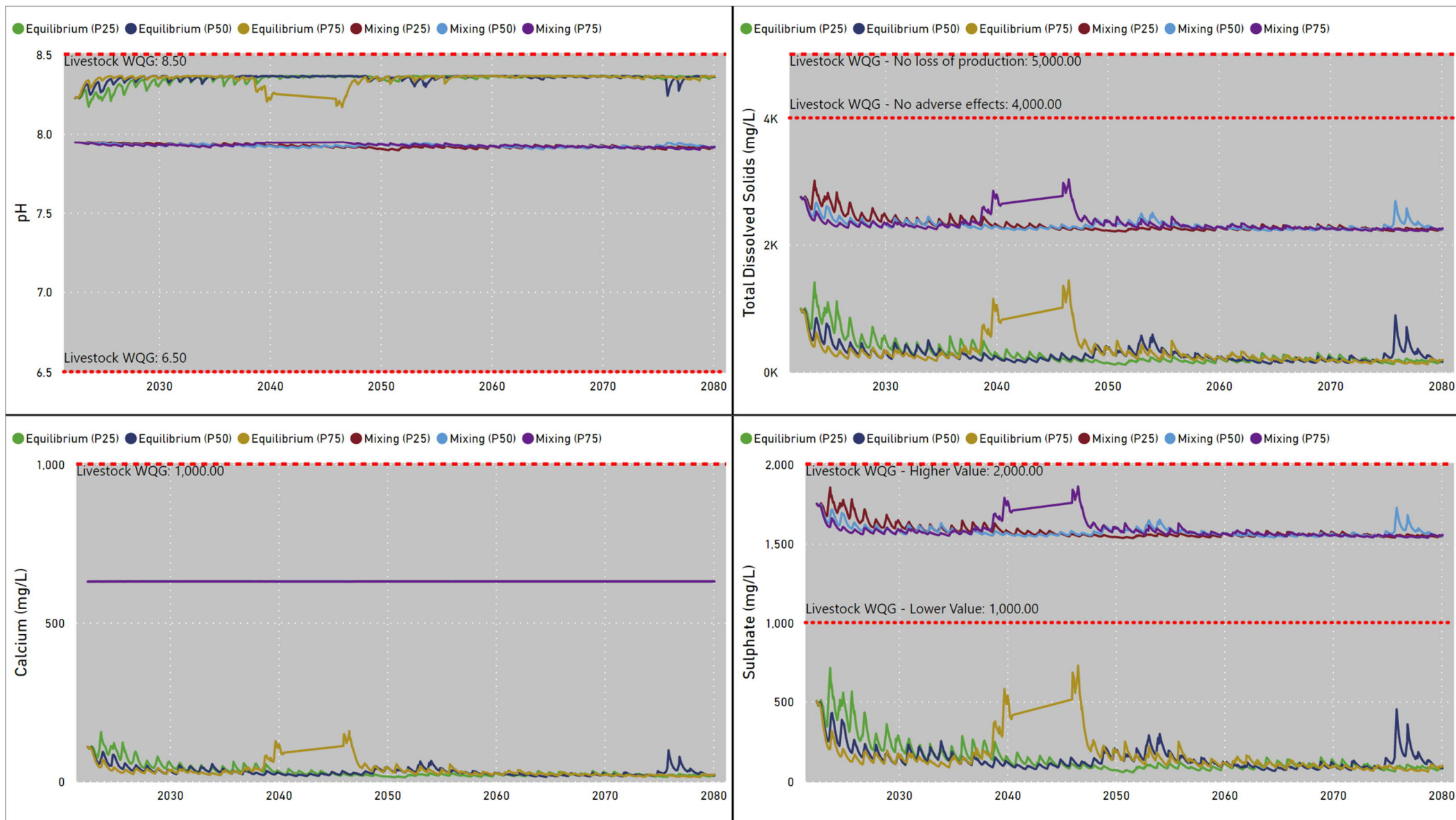


Figure 4 WRD Sediment Dam modelled water quality – pH, TDS, calcium and sulphate

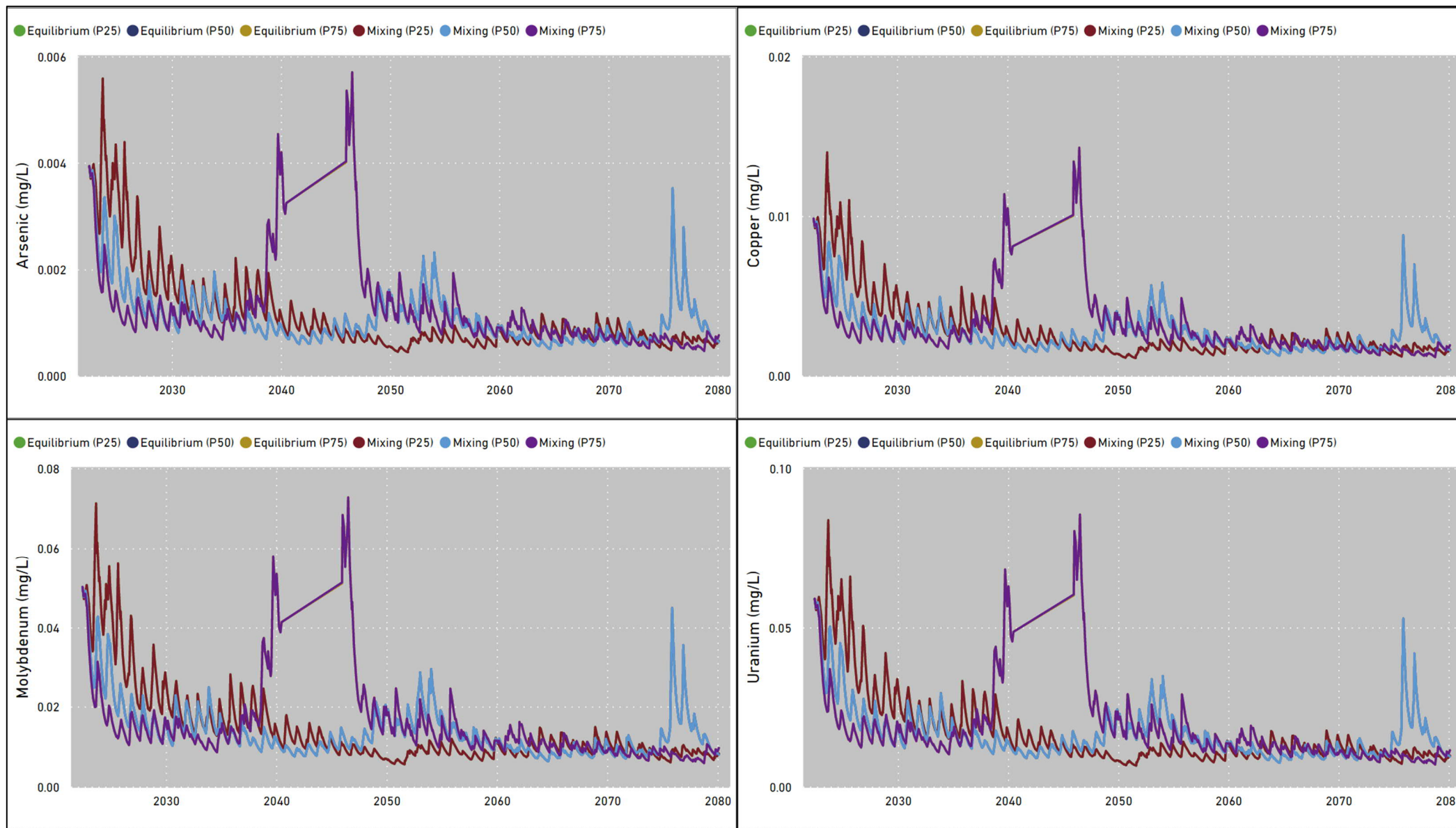


Figure 5 WRD Sediment Dam modelled water quality – arsenic, copper, molybdenum and uranium

A.2 South Pit

Table 6 Long-term modelled (Feb-2080) water quality in South Pit (scenario 1)

Parameter/ solute		ANZECC 2000 WQG for Livestock Watering		Mixing Model						Speciation Equilibrium Model					
		P25		P50		P75		P25		P50		P75			
Physico-chemical		Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final		
pH	6.5 - 8.5	8.20	7.79	8.20	7.79	8.20	7.79	8.20	8.04	8.20	8.04	8.20	8.05		
TDS (mg/L)	4000	4154	3074	4154	2976	4154	2893	1981	1200	1981	1103	1981	1022		
Major Ions (mg/L)		Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final		
Calcium	1000	696.1	651.7	696.1	648.3	696.1	645.4	140.4	98.0	140.4	94.9	140.4	92.6		
Magnesium	-	81.5	57.1	81.5	53.0	81.5	49.7	81.5	57.1	81.5	53.0	81.5	49.7		
Sodium	-	535.4	196.9	535.4	171.4	535.4	149.6	535.4	197.0	535.4	171.4	535.4	149.7		
Potassium	-	27.3	21.9	27.3	21.4	27.3	21.1	27.3	21.9	27.3	21.4	27.3	21.1		
Sulphate	2000	1984.2	1800.9	1984.2	1777.7	1984.2	1758.1	705.3	473.9	702.2	451.5	699.9	433.3		
Chloride	-	801.4	244.0	801.4	205.8	801.4	173.2	801.4	244.2	801.4	205.9	801.4	173.3		
Fluoride	2	1.2	0.8	1.2	0.7	1.2	0.7	1.2	0.8	1.2	0.7	1.2	0.7		
Bicarbonate	-	101.5	101.5	98.2	98.2	95.8	95.8	108.1	108.1	104.6	104.6	102.2	102.2		
Metals (mg/L)		Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final		
Aluminium	5	0.0130	0.0076	0.0130	0.0075	0.0130	0.0074	0.0130	0.0076	0.0130	0.0075	0.0130	0.0074		
Arsenic	0.5	0.0060	0.0045	0.0060	0.0043	0.0060	0.0043	0.0060	0.0045	0.0060	0.0043	0.0060	0.0043		
Barium	-	0.0509	0.0509	0.0482	0.0482	0.0481	0.0461	0.0509	0.0509	0.0482	0.0482	0.0481	0.0461		
Chromium	1	0.0015	0.0004	0.0015	0.0003	0.0015	0.0002	0.0015	0.0004	0.0015	0.0003	0.0015	0.0002		
Copper	0.5	0.0164	0.0132	0.0163	0.0126	0.0163	0.0122	0.0164	0.0132	0.0163	0.0127	0.0163	0.0122		
Manganese	-	0.0070	0.0017	0.0070	0.0014	0.0070	0.0011	0.0070	0.0017	0.0070	0.0014	0.0070	0.0011		
Molybdenum	0.15	0.0445	0.0253	0.0445	0.0248	0.0445	0.0245	0.0445	0.0253	0.0445	0.0248	0.0445	0.0245		
Nickel	1	0.0190	0.0105	0.0190	0.0104	0.0190	0.0102	0.0190	0.0105	0.0190	0.0104	0.0190	0.0102		
Uranium	0.2	0.0251	0.0118	0.0251	0.0105	0.0251	0.0095	0.0251	0.0118	0.0251	0.0106	0.0251	0.0095		
Zinc	20	0.0461	0.0111	0.0461	0.0089	0.0461	0.0071	0.0461	0.0111	0.0461	0.0089	0.0461	0.0071		

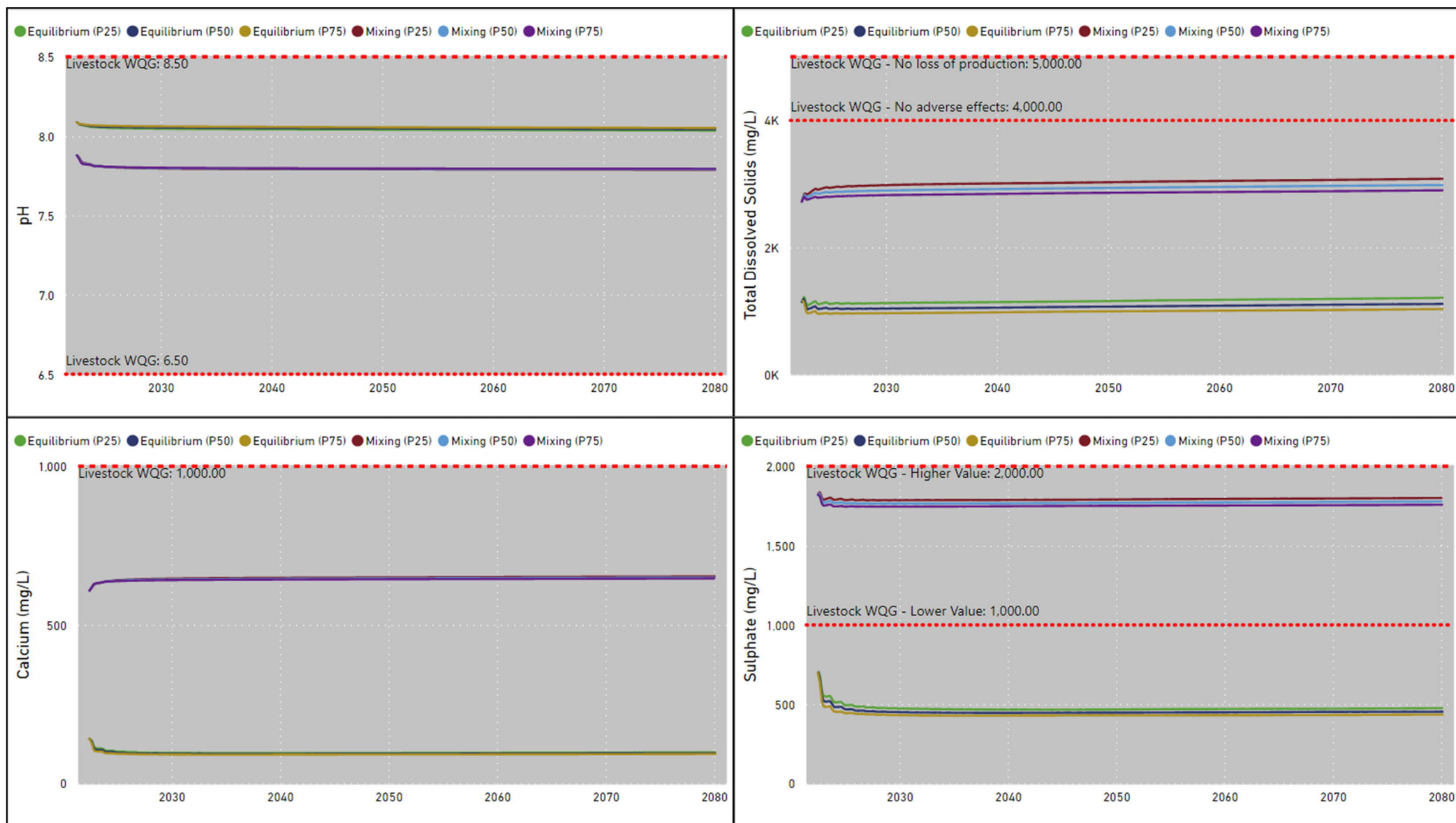


Figure 8 South Pit (scenario 1) modelled water quality – pH, TDS, calcium and sulphate

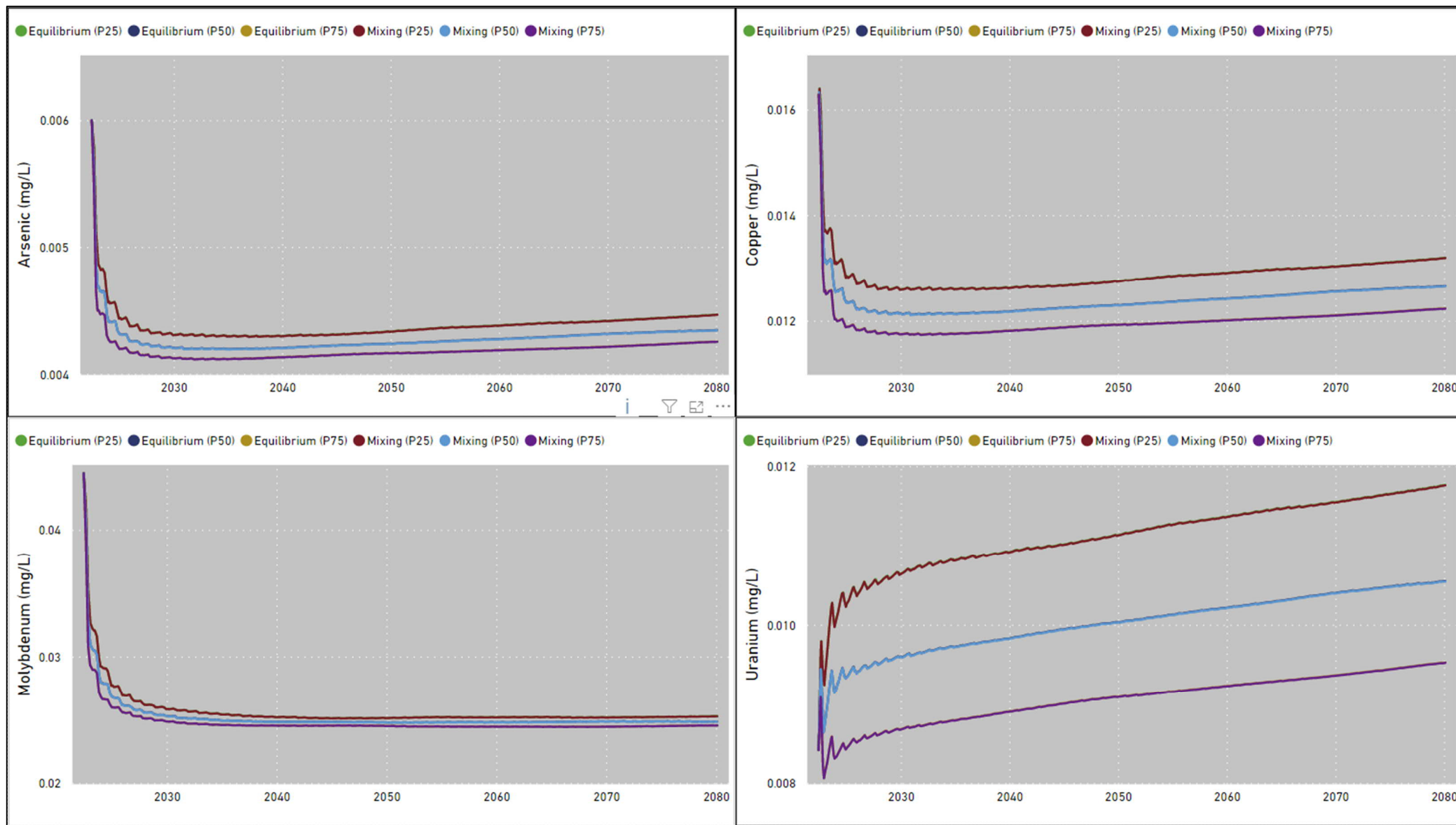


Figure 9 South Pit (scenario 1) modelled water quality – arsenic, copper, molybdenum and uranium

A.3 North Pit

Table 5 Long-term modelled (Feb-2080) water quality in North Pit

Parameter/ solute		ANZECC 2000 WQG for Livestock Watering		Mixing Model						Speciation Equilibrium Model					
				P25		P50		P75		P25		P50		P75	
Physico-chemical			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	
pH	6.5 - 8.5		8.20	7.71	8.20	7.72	8.20	7.74	8.20	7.88	8.20	7.93	8.20	7.96	
TDS (mg/L)	4000		3766	3764	3320	3288	3020	3018	1772	1765	1316	1275	1014	1012	
Major Ions (mg/L)			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	
Calcium	1000		758.2	758.1	717.8	716.5	700.7	690.6	163.7	162.8	122.7	118.6	95.8	95.5	
Magnesium	-		88.2	88.0	64.6	62.6	48.8	48.7	88.3	88.0	64.6	62.6	48.9	48.7	
Sodium	-		243.5	242.7	179.4	173.6	135.7	135.4	243.6	242.9	179.5	173.7	135.8	135.4	
Potassium	-		61.6	61.3	44.8	43.5	34.3	34.3	61.6	61.4	44.8	43.6	34.4	34.3	
Sulphate	2000		1768.7	1764.3	1724.0	1708.9	1720.3	1680.3	502.6	337.6	451.6	275.9	444.0	254.1	
Chloride	-		458.6	458.3	357.6	312.6	357.6	224.7	458.9	458.5	357.6	312.7	357.6	224.8	
Fluoride	2		1.8	1.3	1.5	1.1	1.5	0.9	1.8	1.4	1.5	1.1	1.5	0.9	
Bicarbonate	-		391.1	390.8	275.8	270.0	204.8	204.6	413.6	413.3	293.4	287.4	218.9	218.7	
Metals (mg/L)			Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	Max	Final	
Aluminium	5		0.0601	0.0601	0.0408	0.0401	0.0286	0.0286	0.0601	0.0601	0.0409	0.0401	0.0286	0.0286	
Arsenic	0.5		0.0087	0.0087	0.0062	0.0060	0.0046	0.0046	0.0087	0.0087	0.0062	0.0060	0.0046	0.0046	
Barium	-		0.2476	0.2474	0.1902	0.1736	0.1902	0.1302	0.2477	0.2475	0.1902	0.1737	0.1902	0.1303	
Chromium	1		0.0007	0.0003	0.0007	0.0002	0.0007	0.0001	0.0007	0.0003	0.0007	0.0002	0.0007	0.0001	
Copper	0.5		0.0411	0.0399	0.0353	0.0305	0.0347	0.0263	0.0412	0.0399	0.0353	0.0305	0.0347	0.0263	
Manganese	-		1.5012	0.6787	1.5012	0.4676	1.5012	0.3141	1.5012	0.6790	1.5012	0.4678	1.5012	0.3142	
Molybdenum	0.15		0.0161	0.0140	0.0139	0.0109	0.0137	0.0095	0.0162	0.0140	0.0139	0.0109	0.0137	0.0095	
Nickel	1		0.0108	0.0069	0.0096	0.0057	0.0094	0.0053	0.0108	0.0069	0.0096	0.0057	0.0095	0.0053	
Uranium	0.2		0.0152	0.0151	0.0110	0.0107	0.0083	0.0083	0.0152	0.0151	0.0110	0.0107	0.0083	0.0083	
Zinc	20		0.0140	0.0063	0.0140	0.0044	0.0140	0.0029	0.0140	0.0063	0.0140	0.0044	0.0140	0.0029	

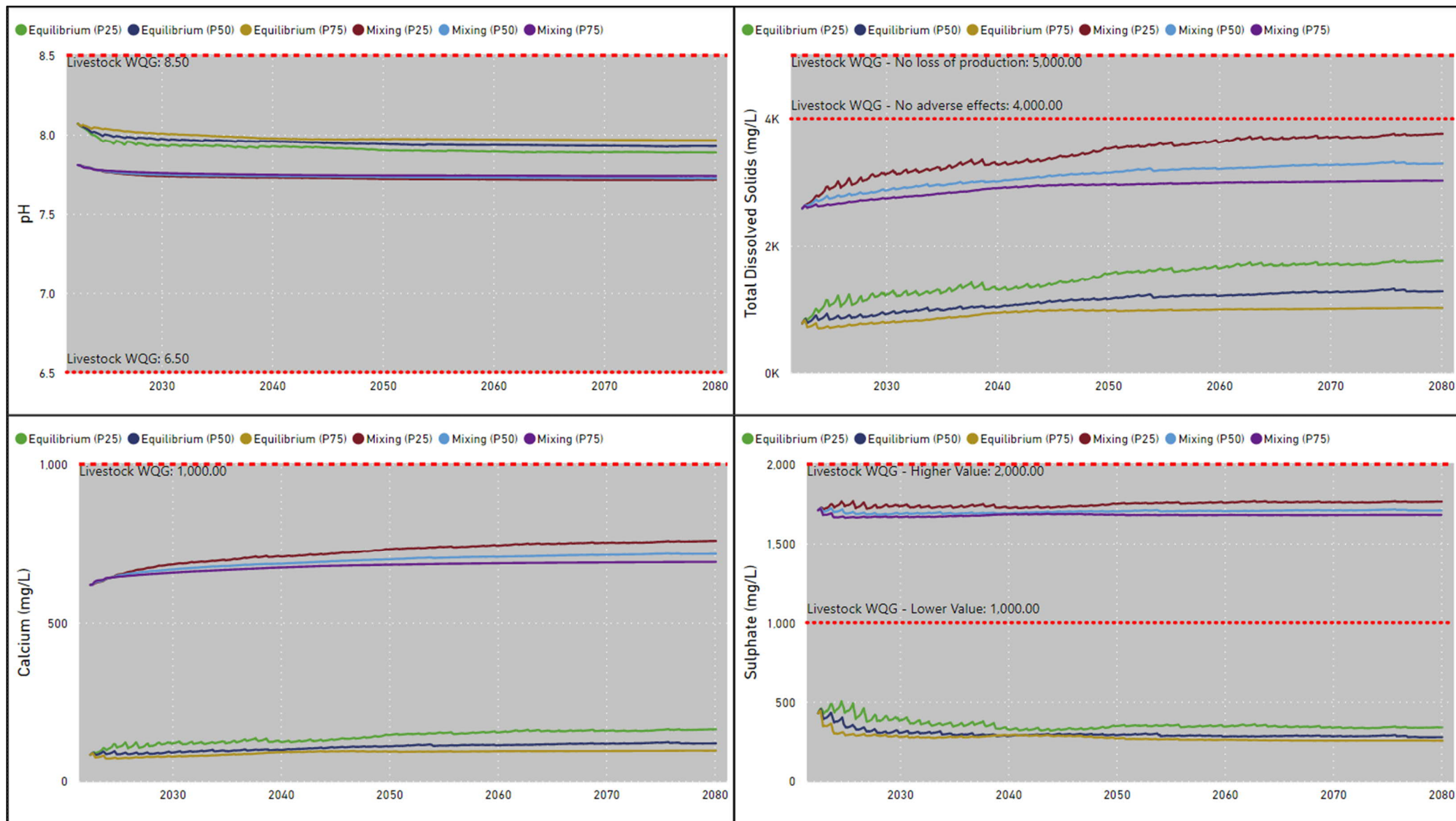


Figure 6 North Pit modelled water quality – pH, TDS, calcium and sulphate

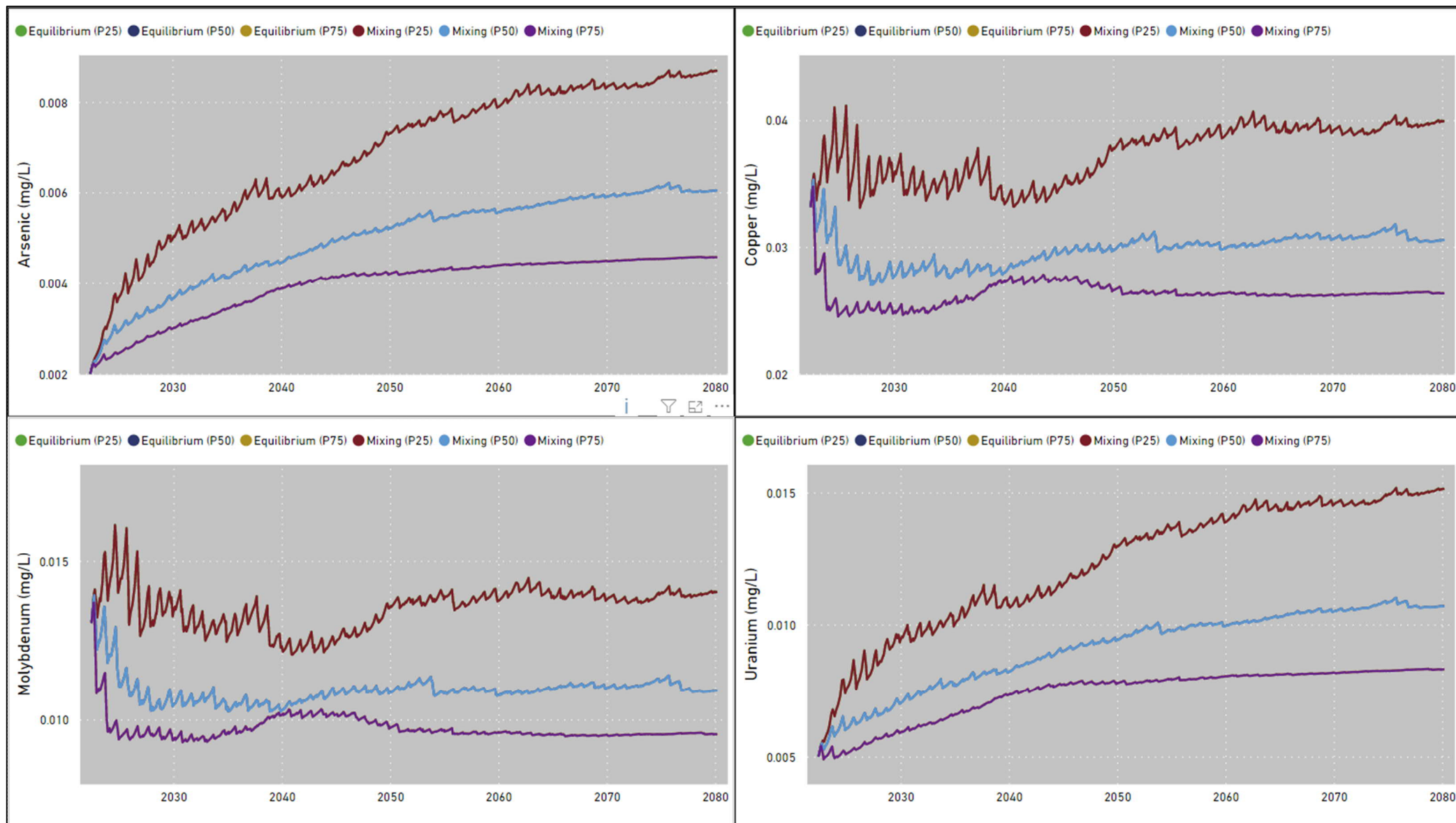


Figure 7 North Pit modelled water quality – arsenic, copper, molybdenum and uranium

Appendix B. Revised PRCP Schedule

Post-mining land uses (PMLU)										
Rehabilitation area			RA1							
Relevant activities			North Pit, South Pit (Portal & Vent), WRD Sediment Dam							
Total rehabilitation area size (ha)			19.5							
Commencement of first milestone: RM1			10/12/2026							
PMLU			Water Storage for Stock Water							
Date area is available	10/12/2026	10/12/2028	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx
Cumulative area available (ha)	19.5	19.5								
Milestone completed by	10/12/2028	10/12/2033	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx
Milestone Reference	Cumulative area achieved (ha)									
RM1	19.5									
RM3	19.5									
RM4	19.5									
RM7	19.5									
RM11		19.5								

- 1) Insert new columns to the yellow table to include further rehabilitation milestone dates.
- 2) Insert new columns to the blue table to match rehabilitation milestone dates.
- 3) Insert new rows to the blue table to include additional rehabilitation milestone references.
- 4) Insert the relevant number in the "Milestone reference" column (i.e. RM1).

Post-mining land uses (PMLU)										
Rehabilitation area				RA2						
Relevant activities				Waste Rock Dump (WRD)						
Total rehabilitation area size (ha)				23.4						
Commencement of first milestone: RM1				10/12/2026						
PMLU				Native Ecosystem						
Date area is available	10/12/2026	10/12/2028	10/12/2033	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx
Cumulative area available (ha)	23.4	23.4	23.4							
Milestone completed by	10/12/2028	10/12/2033	10/12/2038	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx
Milestone Reference	Cumulative area achieved (ha)									
RM1	23.4									
RM14	23.4									
RM3	23.4									
RM4	23.4									
RM5	23.4									
RM8		23.4								
RM12			23.4							

1) Insert new columns to the yellow table to include further rehabilitation milestone dates.

2) Insert new columns to the blue table to match rehabilitation milestone dates.

3) Insert new rows to the blue table to include additional rehabilitation milestone references.

4) Insert the relevant number in the "Milestone reference" column (i.e. RM1).

Post-mining land uses (PMLU)										
Rehabilitation area				RA3						
Relevant activities				Ancillary Infrastructure, ROM Pad, Roads, Exploration, Abandonment Bund						
Total rehabilitation area size (ha)				18.4						
Commencement of first milestone: RM1				10/12/2026						
PMLU				Low Intensity Grazing						
Date area is available	10/12/2026	10/12/2028	10/12/2033	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx
Cumulative area available (ha)	18.4	18.4	18.4							
Milestone completed by	10/12/2028	10/12/2033	10/12/2038	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx
Milestone Reference	Cumulative area achieved (ha)									
RM1	18.4									
RM2	18.4									
RM3	18.4									
RM4	18.4									
RM6	18.4									
RM9		18.4								
RM13			18.4							

1) Insert new columns to the yellow table to include further rehabilitation milestone dates.

2) Insert new columns to the blue table to match rehabilitation milestone dates.

3) Insert new rows to the blue table to include additional rehabilitation milestone references.

4) Insert the relevant number in the "Milestone reference" column (i.e. RM1).

Post-mining land uses (PMLU)										
Rehabilitation area			RA4							
Relevant activities			Water infrastructure (retain North Pit Creek Diversion and Levee, Diversion Northeast of North Pit, Diversion east of WRD Sediment Dam. Decommission all other diversions)							
Total rehabilitation area size (ha)			1.4							
Commencement of first milestone: RM1			10/12/2026							
PMLU			Water Management Infrastructure							
Date area is available	10/12/2026	10/12/2028	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx	10/12/xxxx
Cumulative area available (ha)	1.4	1.4								
Milestone completed by	10/12/2028	10/12/2033	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx	xx/xx/xxxx
Milestone Reference	Cumulative area achieved (ha)									
RM1	1.4									
RM3	1.4									
RM6	1.4									
RM10		1.4								

- 1) Insert new columns to the yellow table to include further rehabilitation milestone dates.
- 2) Insert new columns to the blue table to match rehabilitation milestone dates.
- 3) Insert new rows to the blue table to include additional rehabilitation milestone references.
- 4) Insert the relevant number in the "Milestone reference" column (i.e. RM1).

Milestone reference	Rehabilitation milestone	Milestone criteria
RM1	Infrastructure Decommissioning	1. All services disconnected to redundant infrastructure. 2. All road materials (bitumen, concrete, gravel) removed (ripped and revegetated) where not to be retained. 3. All pipelines drained and removed unless otherwise agreed with landowner. 4. All fencing that is not part of the PMLU removed. 5. All buildings are demolished and removed. 6. Any remaining infrastructure to be removed unless agreed to be retained by the landholder. 7. All machinery and equipment removed. 8. All surface water drainage infrastructure including foundations not required in the PMLU has been removed (Where drains or bunding are not required for flood and/or erosion protection they will be levelled or used as fill). 9. All diversions and levees not to be retained are removed. 10. All waste material, explosives, hazardous chemicals and dangerous goods to be handled, removed, and disposed of in accordance with environmental authority (EA) EPML02840015. 11. Areas which contained ancillary infrastructure cannot contaminate receiving waters or surface waters or cause offsite environmental impacts. 12. The portal is backfilled (minimum 50 m down the decline) with benign waste rock and a shotcrete bulkhead is placed in front of the backfill. An inert bund will be installed just outside the portal entrance and a metal grate gate fitted at the portal. 13. The surface vent fan is decommissioned and sealed.
RM2	Remediation of contaminated land	1. All hazardous and contaminated materials including sediments from the WRD sedimentation dam have been assessed and identified by an Appropriately Qualified Person (AQP) ¹ , and disposed of lawfully. 2. ROM pad excavated to 1m (or refusal) and benign surface recontoured. 3. A contaminated land investigation has been undertaken, and an accompanying report prepared by an AQP confirming that land is not contaminated and is suitable for the proposed PMLU.
RM3	Landform Development and Reshaping/Reprofiling	1. All earthworks completed. 2. All erosion and sediment control systems have been installed. 3. Bunds and check dams installed across contours. 4. Landform shaped to be gently sloping characteristic of the natural landform and reinstates natural drainage lines (RA3, RA4). 5. The final landform surveyed and certified by an AQP as per the construction designs. 6. Landform of ≥1.5 factor of safety and non batter angles of <25% for final landform design of RA2 (WRD). WRD determined to be geotechnically stable assessed by an AQP.
RM4	Surface Preparation	1. Exposed surfaces ripped and seeded to improve ground cover. 2. For revegetated areas, growth media has been applied and spread (to a depth up to 150 mm). 3. An assessment of the placed growth media health and suitability completed by an AQP to confirm soil is suitable for target vegetation establishment. 4. Any fertilisers/ameliorants recommended as a result of the soil assessment have been applied at the rate recommended by the AQP. 5. Ripping and/or surface contouring (up to depth of 300mm - depending on compaction of soil) has been undertaken (tyne spacing varies depending on slope) where necessary. 6. Waste rock dump (RA2) is capped and growth media applied and spread to a minimum depth of 300 mm. 7. Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 uS/cm), b) Soil pH <9 and >6 as measured at any part of the root zone, c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth).
RM5	Revegetation (Native ecosystem)	1. Seeding has been completed with recommended seeding mix in Tables 1 and 2 at a rate of 1-5 kg/ha.
RM6	Revegetation (Water management infrastructure / Low intensity grazing)	1. Seeding has been completed with recommended seeding mix in Tables 1 and 2 at a rate of 1-5 kg/ha.
RM7	Achievement of surface requirements (Water Storage for Stock Water)	1. The voids have been certified as geotechnically stable by an AQP. 2. RPEQ inspection of regulated structure (until de-registered). 3. Residual Voids have restricted access by means of: a) Fence and abandonment bund unless existing topographical barriers exist; and b) Appropriate signage.
RM8	Achievement of surface requirements (Native ecosystem)	1. Measured indices at rehabilitated sites for Native Ecosystems within a 50x5m plot: a) At least three of the tree and shrub species, and three of the ground cover species listed in RM5 are present; b) Flora cover ⁴ ≥ 50% of that recorded at the analogue sites described in Table 8 (for RE1.11.8 and RE1.11.2/1.11.3); c) Groundcover ⁵ ≥ 50% of the percentage cover recorded at analogue sites described in Table 8 (RE1.11.8 and RE1.11.2/1.11.3); d) Species richness ≥ 50% of that recorded at analogue sites described in Table 8 (RE1.11.8 and RE1.11.2/1.11.3); e) Fauna habitat features equivalent to analogue sites described in Table 8 ; and f) Evidence that fauna is not compromising the integrity of the cover system when assessed by an AQP. g) Declared weeds are no more than 10% greater than the percentage cover at analogue sites. 2. Where there are erosion features on a landform, they must not prevent reinstatement of the nominated post mining land use. No signs of active erosion >30 cm wide or >30 cm deep ² . 3. Average erosion rate is less than 5 t/ha/y. 4. Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 uS/cm), b) Soil pH <9 and >6 as measured at any part of the root zone, c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth). 5. Safe to humans and wildlife - Safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use.

RM9	Achievement of surface requirements (Low intensity grazing)	1. Exploration disturbances are capped, backfilled and grouted (if required) and disturbance areas are scarified for revegetation. 2. Measured indices at rehabilitated sites for Low Intensity Grazing within a 50x5m plot: a) At least three of the tree and shrub species, and three of the ground cover species listed in RM6 are present; b) ≥50% of the productivity (carrying capacity measured as pasture biomass) of that recorded at analogue sites described in Table 8; and c) Percentage ground cover⁵ ≥ 50% of that recorded at analogue sites described in Table 8 (RE1.11.2/1.11.3). 3. Category 3 restricted invasive plant species³ are no more than 10% greater than the percentage cover at analogue sites described in Table 8. 4. Where there are erosion features on a landform, they must not prevent reinstatement of the low intensity grazing PMLU. No signs of active erosion >30cm wide or >30cm deep². 5. Safe to humans and wildlife - Safety hazards in rehabilitation are not significantly different to surrounding unminded landscapes subject to the same land use. 6. Stable - rehabilitation is geotechnically stable (factor of safety ≥1.5).
RM10	Achievement of post mining land use (Water management infrastructure)	1. An AQP has certified that the retained levees and diversions have the design capacity for 0.1% AEP (annual exceedance probability) rainfall event. 2. Certified as conforming with design documents and functioning as designed when assessed by an AQP. 3. Certification from an AQP that the area has achieved a safe and stable condition with no signs of active erosion >30 cm wide or >30 cm deep². 4. Geomorphology of the receiving environment has not been altered when assessed by an AQP. 5. Certification by an AQP that a stable low intensity grazing PMLU has been achieved.
RM11	Achievement of post mining land use (Water storage)	1. Access to the residual void is restricted by the installation of an appropriate abandonment barrier (bund and/or fence), or use of natural topography. As shown in Figure 3. 2. Sediment and erosion control structures removed once disturbed areas are stabilised. 3. Long-term water quality in the water storages (RA1) monitored quarterly do not exceed the limits specified in Table 5 for a minimum of 5 consecutive years. 4. Certification from an AQP that the water storages have achieved a safe and stable condition suitable for use as water storages. 5. North and South Pits can be demonstrated by an AQP as acting as groundwater sinks.
RM12	Achievement of post mining land use (Native ecosystem)	1. Sediment and erosion control structures removed once disturbed areas are stabilised. 2. No active areas of rills or gully erosion and drainage follows intended and appropriate drainage paths. 3. No evidence of erosion classified as Moderate and Severe². 4. Certification from an AQP the WRD cover system is performing as required to achieve a non-polluting landform based on the water balance. 5. The cover system monitoring program by predictive modelling has confirmed the performance criteria, for dry (117mm), average (463mm) and wet (1,198mm) years rainfall, has met average seepage < 6% of rainfall based on 10 year duration rolling average. 6. A BioCondition assessment is completed by an AQP using the methodology outlined in the latest version of the Queensland Herbarium's BioCondition Assessment Manual. 7. The BioCondition Assessment demonstrates achievement that vegetation communities are equal to or greater than comparable species to the analogue site and demonstrate diversity, functionality and sustainability by measured indices at rehabilitated sites for Native Ecosystems within a 50x5m plot: a) Flora cover⁴ ≥27% (RE1.11.8) and ≥48% (RE1.11.2/1.11.3) and comparable to the analogue sites described in Table 8; b) Percentage groundcover⁵ ≥70% (RE1.11.8) and ≥40% (RE1.11.2/1.11.3) and comparable to the analogue sites described in Table 8; c) Species richness - ≥15% for RE1.11.8 and ≥20% for RE1.11.2/1.11.3 and comparable to the analogue sites described in Table 8; d) Fauna habitat features equivalent to analogue site as described in Table 8; and e) Certification by an AQP that Category 3 invasive plant species are no more than 10% greater than the percentage cover at analogue sites described in Table 8. 8. Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 uS/cm), b) Soil pH <9 and >6 as measured at any part of the root zone, c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth). 9. Surface water quality monitored monthly during flow at, but not limited to, downstream locations specified in Table 3 must not exceed the limits in Table 6, for a minimum of 5 consecutive years. 10. If the surface water quality exceeds criteria 9 above, the applicable reference site must be compared to the downstream site result; and quality results measured at a downstream site must be equal to or less than the quality result measured at the applicable reference site. 11. For a minimum of five consecutive years groundwater quality must be monitored quarterly at, but not limited to, compliance bores specified in Table 4, for all quality characteristics listed in Table 7. 12. Groundwater quality results must not exceed the limits in Table 7, for three consecutive results. 13. Rehabilitated landforms have achieved a factor of safety (≥1.5). 14. Rehabilitated landforms have achieved a stable condition when assessed by an AQP for: a) Differential settlement; b) No evidence of salt rise; and
RM13	Achievement of post mining land use (Low intensity grazing)	1. Sediment and erosion control structures removed once disturbed areas are classed as stable. 2. Erosion assessment of final landform: no subsidence or significant (>1m deep) erosion gullies for at least three (3) consecutive years; drainage follows intended and appropriate drainage paths. 3. Average sediment erosion rate of less than 5 t/ha/y has been achieved. 4. Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 uS/cm), b) Soil pH <9 and >6 as measured at any part of the root zone, c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth). 5. Land suitability class of ≤3, based on the latest version of the 'Guidelines for Agricultural Land Evaluation in Queensland' as assessed by an AQP. 6. Measured indices at rehabilitated sites for Low Intensity Grazing within a 50x5m plot: a) ≥70% of the productivity (carrying capacity measured as pasture biomass) of that recorded at analogue sites described in Table 8; b) Flora cover⁴ ≥48% and comparable to the analogue sites described in Table 8; c) Percentage groundcover⁵ ≥40% and comparable to the analogue sites described in Table 8; d) Category 3 restricted invasive plant species³ are no more than 10% greater than the percentage cover at analogue sites. 7. Maintenance requirements for rehabilitated land is no greater than that required for the land prior to its disturbance. 8. No evidence of erosion classified as Moderate and Severe². 9. Surface water quality monitored monthly during flow at, but not limited to, downstream locations specified in Table 3 must not exceed the limits in Table 6, for a minimum of 5 consecutive years. 10. If the surface water quality exceeds criteria 9 above, the applicable reference site must be compared to the downstream site result; and quality measured at a downstream site must be equal to or less than the quality measured at the applicable reference site. 11. For a minimum of five consecutive years groundwater must be monitored quarterly at, but not limited to, compliance bores specified in Table 4, for all quality characteristics listed in Table 7. 12. Groundwater quality results must not exceed the limits in Table 7, for three consecutive years.

RM14	Installation of cover system/cap	1. WRD batter slopes ≤ 37 degrees to prevent erosion. 2. All potentially acid forming materials placed within the WRD is completely encapsulated by compacted non-acid forming material of at least 5 m depth. 3. All PAF material has been placed within the WRD to ensure the distance from the external batter to the encapsulated PAF will not allow seepage or sub-surface lateral flow of PAF contaminated water to be expressed along the external batters or toe. 4. A "store and release" cover system has been constructed as per design criteria and certified by an AQP. 5. Drainage rates from the cover system into the WRD are <1x10⁻⁸ m/s. 6. Soil oxygen levels are at concentrations that will not cause oxidation of PAF. 7. Additional parameters will be measured by an AQP during cover construction and will include (at a minimum): a) In-situ hydraulic conductivity or infiltrability of each layer of the cover system (mean±sd). b) Sampling for and subsequent measurement of soil moisture characteristic for each layer of the cover system; and c) Sampling for and measurement of physical properties of each layer of the cover system including (at a minimum) texture/PSA, aggregate stability, bulk density (mean±sd). 8. Representative sampling of capping material demonstrates absence or below trigger levels of PAF or other contaminated material as assessed by an AQP. 9. Groundwater and surface water (including seepage) monitoring programs confirm the constructed cover is functioning as designed and there is no migration of contaminants. 10. WRD sedimentation dam has been dewatered and sediment removed.
1) Insert new rows below the table to record more Rehabilitation Area Milestones for the project 2) Ensure all Rehabilitation Milestones recorded in this table align with those included in the RA sheets in this form. 3) See the PRCP guideline before developing site-specific Rehabilitation Area Milestones		

¹Appropriately qualified person means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

²Erosion classification framework:

Erosion classification	Minor	Moderate	Severe
	Shallow soil deposits downslope		
Sheet erosion		Partial exposure of roots; moderate soil deposits downslope, etc	Loss of surface horizon; root exposure, etc
Rill/gully erosion	<15 rills and <0.3m deep	15-30 rills and <0.3m deep	>30 rills and/or any >0.3m deep
Tunnel erosion	-	-	Present
Mass movement	-	-	Present

³Australia and New Zealand Environment and Conservation Council, and Agriculture and Resource Management Council of Australia and New Zealand 2000 water quality guidelines.

Table 1 Seeding Mix for the Rehabilitation of the Project Site

Scientific Name	Common Name
<i>Triodia pungens (D)</i>	Soft Spinifex
<i>Cymbopogon bombycinus (A)</i>	Citronella Grass
<i>Triodia bitextura (D)</i>	Feathertop Spinifex
<i>Eriachne mucronata</i>	N/A
<i>Themeda triandra</i>	Kangaroo Grass
<i>Dicanthium sericium</i>	Queensland Bluegrass
<i>Sorghum spp.</i>	Annual Sorghum
<i>Rhynchosia minima</i>	Least snout-bean
<i>Vigna savi</i>	Cowpea

Note
Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3), Community 3 (RE 1.3.6x1b)
Community 5 (RE 1.11.2x4) – rocky outcrops
Community 6 (RE 1.11.2x1b)
Native species
Native pasture species
Native pasture species
Single-generation quick establishing groundcover
Legume suited to north-west Queensland
Legume suited to north-west Queensland

Table 2 Tree and Shrub Species

Scientific Name	Common Name	Note
Tree Layer		
<i>Eucalyptus leucophloia</i> (D)	Snappy Gum	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3),
<i>Corymbia terminalis</i> (A)	Western Bloodwood	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3), Community 3 (RE 1.3.6x1b)
<i>Terminalia aridicola</i> (A)	Arid Peach	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3),
<i>Eucalyptus leucophylla</i> (O)	Cloncurry box	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3), Community 3 (RE 1.3.6x1b)
<i>Corymbia aparrerinja</i> (O)	Ghost Gum	Community 1 (RE 1.11.2d),
<i>Atalaya hemiglauca</i>	Whitewood	Suited to north-west Queensland
Shrub Layer		
<i>Acacia holosericea</i> (D/A)	Soapbush Wattle	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3), Community 3 (RE 1.3.6x1b)
<i>Acacia phlebocarpa</i> (D)	Tabletop Wattle	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3),
<i>Acacia chisholmii</i> (SD)	Turpentine	Community 1 (RE 1.11.2d), Community 2 (RE 1.11.3), Community 3 (RE 1.3.6x1b)
<i>Senna artmeisioides subsp. helmsii</i>	Crinkled Cassia	Suited to north-west Queensland
<i>Senna artmeisioides subsp. oligophylla</i>	Limestone Cassia	Suited to north-west Queensland
<i>Senna notabilis</i>	Cockroach Bush	Suited to north-west Queensland

Key: D = Dominant, SD = Sub-dominant, A = Associated

Table 3 Surface water monitoring site locations

Monitoring Site	Site Description	Easting (GDA94 Zone 54)	Northing (GDA94 Zone 54)
Reference sites			
BASW09	Drainage feature outside and northeast of disturbance footprint catchment	377540	7738673
BASW05	Drainage feature southwest and outside of disturbance footprint catchment	380736	7742273
Downstream sites			
BASW01	Watercourse at Mining Lease west boundary	378513	7743286
BASW04	Watercourse downstream of North Pit	379491	7742440
BASW08	Drainage feature at the top of the catchment (Mining Lease entry)	380776	7740396
BASW11	Drainage feature upstream of junction with watercourse	379884	7743040

Table 4 Groundwater monitoring bore locations

Monitoring Point	Location (GDA94 - Zone 54)		Surface RL (m) ^a	Total Depth (mbgl) ^b	Screened Interval (mbgl)
	Easting	Northing			
Compliance bores					
BAWB05	380948	7740252	377.32	102	35-102
Bore E	380022	7738827	334.23	85	28-83
BAWB01	380432	7742097	352.68	104	20-101
BAWB02	379480	7742395	310.59	104	96-102
BAWB03	379834	7741692	329.5	104	50-102
BAWB04	380043	7742054	329.14	100	94-100
BAWB07	379849	7741936	328.74	127	18-146
BAWBR1	380292	7740939	334.49	14	5-6
BAWBR2	379912	7741279	322.98	14	2-3
BAWBR3	379991	7741485	326.02	14	3-4
Seepage bores					
Seepage Bore 1a	380084	7741046	336.819	6	1-5
Seepage Bore 1b	380084	7741048	336.487	16	5-15
Seepage Bore 2a	380025	7741117	331.218	6	1-5
Seepage Bore 2b	380023	7741116	331.342	16	5-15
Seepage Bore 3a	379985	7741133	332.189	6	1-5
Seepage Bore 3b	379986	7741135	331.962	16	5-15
Seepage Bore 4a	380711	7740798	20-Dec	6	1-5
Seepage Bore 4b	380711	7740800	20-Dec	16	5-15

^aRL must be measured to the nearest 5cm from top of the bore casing

^bMetres below ground level

Table 5 Water quality limits for North and South Pits, and WRD Sedimentation Dam

Quality Characteristic	Water Quality Limit (mg/L)
pH (Ph units)	5-9
Total Dissolved Solids	5,000
Arsenic	0.5
Cadmium	0.01
Calcium	500
Copper	1
Fluoride	2
Iron	10
Lead	0.1
Magnesium	150
Manganese	1
Nitrate	100
Nitrite	3
Sulfate	2,000
Total hardness	1,000 (as CaCO ₃)
Zinc	20

Limits for metals and metalloids apply to total results.

Table 5 Water quality limits for North and South Pits, and WRD Sedimentation Dam

Quality Characteristic	Limit
pH (pH units)	7.5-9
Electrical Conductivity ($\mu\text{S}/\text{cm}$)	500
Turbidity (NTU)	55
Sulfate (mg/L)	10
Fluoride (mg/L)	2
Arsenic (mg/L)	0.013
Barium (mg/L)	0.047
Bismuth (mg/L)	0.0007
Cobalt (mg/L)	0.0014
Chromium (mg/L)	0.001
Copper (mg/L)	0.0036
Molybdenum (mg/L)	0.034
Nickel (mg/L)	0.011
Selenium (mg/L)	0.011
Uranium (mg/L)	0.0005
Major ions (mg/L) (calcium, chloride, magnesium, potassium, sodium, bicarbonate, carbonate)	NA

Notes:

All metals and metalloids must be measured as 'dissolved' (from analysis of a field filtered sample) and total (unfiltered).

Table 7 Groundwater quality limits		
Quality Characteristic ^a	Bore(s)	Limit ^b
pH (pH units)	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	7.0 – 8.5
EC (µS/cm)	BAWB01, BAWB02, BAWB07	1,365
	BAWB03, BAWB04, BAWB05, BAWBR1, BAWBR2, BAWBR3, Bore E	1,010
Sulfate (mg/L)	BAWB01, BAWB03, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	73
	BAWB02	200
	BAWB04	21
Fluoride (mg/L)	BAWB02, BAWB03, BAWB04, BAWB05, BAWBR1, BAWBR2, BAWBR3	0.9
	BAWB01, BAWB07, Bore E	1.7
Arsenic (mg/L)	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.13 ^c
Barium	BAWB01, BAWB02, BAWB03, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.17
	BAWB04	0.42
	BAWB05	0.3
Bismuth	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.0007 ^d
Cobalt	BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.0014 ^d
Chromium	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.001 ^c
Copper	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.008
Molybdenum	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.034 ^c
Nickel	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.011 ^c
Selenium	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.011 ^c
Uranium	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	0.007
Major cations	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	For interpretation only
Major anions	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	
Total Hardness	BAWB01, BAWB02, BAWB03, BAWB04, BAWB05, BAWB07, BAWBR1, BAWBR2, BAWBR3, Bore E	

Notes:

a All metals and metalloids must be measured as 'dissolved' (from analysis of a field filtered sample) and total.

Limits for metals and metalloids apply to dissolved results.

b Derived from site-specific values, based off dissolved concentration of metals (95th percentiles).

c ANZG 2018 95% aquatic species protection level for slightly to moderately disturbed ecosystem.

d ANZG low reliability metals and metalloids.

Table 8 Analogue sites					
DOMAIN(S)	POST-MINE LAND USE	DESCRIPTION	ANALOGUE SITE ID	PROPOSED LOCATION (GDA94)	
				LATITUDE	LONGITUDE
Waste rock dump (WRD)	Native ecosystem	Areas field verified as RE 1.11.8, with steep slopes which are sparsely vegetated, representative of the side batters of the WRD (37 degrees).	A1.1	-20.401979	139.839381
			A1.2	-20.403388	139.839455
			A2.1	-20.417144	139.84655
			A2.2	-20.417395	139.845081
		Areas field verified as RE 1.11.2/1.11.3. Areas of flatter terrain will be selected, representative of the top of the WRD.	A3.1	-20.414892	139.844226
			A4.1	-20.413167	139.843531
			A4.2	-20.413241	139.842382
Ancillary infrastructure (ROM pad, roads, exploration)	Low intensity grazing	Areas field verified as RE 1.11.2/1.11.3. Areas of undulating terrain with native grass species (preferred by cattle) will be selected, to represent low intensity grazing.	A5.1	-20.420619	139.835723
			A5.2	-20.418974	139.834563
			A6.1	-20.428476	139.859263
			A6.2	-20.43001	139.859301