Environmental Assessment Report

Bluestone Mines Tasmania Joint Venture Pty Ltd

Non-acid forming aggregate storage facility

Renison Bell, Tasmania

February 2025

ENVIRONMENT PROTECTION AUTHORITY

Environmental Assessment Report

Proponent	Bluestone Mines Tasmania Joint Venture Pty Ltd
Proposal	Change in operation from trial to permanent non-acid forming aggregate storage facility
Location	Renison Bell, Tasmania
Class of Assessment	2B
PCE/EPN No.	PCE No. 10975. It is noted that the following existing legal instruments are also relevant to this assessment: • EPN 9937/1 which approved the trial of the ASF and ore sorter; and • Licence to Operate Scheduled Premises (LOSP) No. 3315 as varied by Environment Protection Notice (EPN) No. 7092/2 which is the permit for the broader Renison Bell Tin Mine Site.
Permit Application No.	DA2022/80 West Coast Council
myDAS Folder No.	EN-EM-EV-DE-292571-001
myDAS Document No.	D23-271197

Assessment process milestones

Date	Milestone
26 October 2020	Notice of Intent lodged
27 November 2020	Guidelines Issued
06 December 2022	Permit Application submitted to Council
16 December 2022	Referral received by the Board
25 September 2024	Start of public consultation period
24 October 2024	End of public consultation period
20 February 2025	Date draft conditions issued to proponent
28 February 2025	Statutory period for assessment ends

Glossary/acronyms

Term	Detail
ANZECC	Australian and New Zealand Environment and Conservation Council
ASF	Aggregate Storage Facility
ASS	Acid Sulphate Soils
AHD	Australian Height Datum
AMD	Acid and Metalliferous Drainage
Board	Board of the Environment Protection Authority
BGM	Bituminous geomembrane
CCL	Compacted Clay Liner
CWTP	Contaminated Water Treatment Plant
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMPCA	*Environmental Management and Pollution Control Act 1994*
EMPCS	Environmental management and pollution control system
EPBCA	*Environment Protection and Biodiversity Conservation Act 1999*
GCL	Geosynthetic clay liner
LCD	Lower Crusher Dam
LSOP	Licence to Operate Scheduled Premises
LUPAA	*Land Use Planning and Approvals Act 1993*
ML	Mining Lease
NEPM	National Environmental Protection Measures
NAF	Non-acid forming
NAG	Net acid generation
NAPP	Net acid producing potential
NCA	*Nature Conservation Act 2002*
NEPM	National Environment Protection Measures
NMD	Neutral metalliferous drainage
NOI	Notice of Intent
NRE	Department of Natural Resources and Environment Tasmania
NVA	Natural Values Atlas
PAF	Potentially Acid Forming
RMPS	Resource Management and Planning System of Tasmania
ROM	Run-of-mine
SD	Sustainable development
TSF	Tailing Storage Facilities
TSPA	*Threatened Species Protection Act 1995*
TSS	Total suspended solids

WCIP	*West Coast Interim Planning Scheme, 2013*
WMSOP	Water Management Standard Operating Procedures

Report summary

This report is an environmental assessment of the permanent non-acid forming aggregate storage facility proposed by Bluestone Mines Tasmania Joint Venture Pty Ltd (the Proponent).

The proposal involves permanent establishment of a non-acid forming (NAF) waste rock aggregate storage facility (ASF) (the Proposal) following operation of the facility on a trial basis. The facility will receive up to 75,000m^3 (120,000 tonnes) of rock per year with approximately 318,000m^3 (508,000t) of storage space remaining as of 6 September 2024. The ASF will operate within the bounds of Mining Lease 12M/95 at the existing Renison Bell Tin Mine, approximately 136km south of Burnie and approximately 16km north-east of Zeehan on the West Coast of Tasmania. An ore sorter separates rock waste into two streams (NAF and potential acid forming (PAF)) with NAF rock waste stored within the ASF. A program of filling and progressive covering is also proposed within the ASF.

This report has been prepared based on information provided in the Environmental Impact Statement (EIS). Relevant government agencies and the public were consulted, and any comments or submissions from them were considered as part of the assessment.

Appendix 1 contains a table of the proponent's proposed management measures.

Appendix 2 contains the environmental permit conditions for the proposal.

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1. Approval process

The ASF was approved on a trial basis by EPN No.9937/1 on 14 September 2018.

On 26 October 2020, the Board of the Environment Protection Authority (the Board) received a Notice of Intent (NOI) in relation to permanent establishment of the ASF (the Proposal). An application for a permit under the *Land Use Planning and Approvals Act 1993* (LUPAA) was subsequently submitted to West Coast Council (Council).

The Proposal is defined as a 'level 2 activity' under clause 3(b), Schedule 2 of the *Environmental Management and Pollution Control Act 1994* (EMPCA), being a waste treatment and disposal facility (i.e. a waste depot).

Section 25(1) of EMPCA required Council to refer the permit application to the Board for assessment under EMPCA. The application was received by the Board on 16 December 2022.

The Board required that information to support the Proposal be provided in the form of an Environmental Impact Statement (EIS), prepared in accordance with Guidelines issued by the Board on 30 November 2020. Three drafts of the EIS were submitted to EPA for review against the Guidelines before they were finalised and accepted on behalf of the Board on 19 September 2024.

The EIS was released for public inspection for 28 days on 25 September 2024 and closing on 24 October 2024. Advertisements were placed in The Advocate and on the EPA website. No public representations were received.

On 13 November 2024, the Executive Director, Environmental Assessments agreed to exercise their delegation from the Board to complete the assessment of the Proposal in accordance with section 25(5) of EMPCA. Accordingly, the assessment will be determined under delegation from the Board.

2. SD objectives and EIA principles

The Proposal must be considered by the Board in the context of the objectives of the Resource Management and Planning System of Tasmania (RMPS), and the Environmental Management and Pollution Control System (EMPCS). Both sets of objectives are specified in Schedule 1 of EMPCA.

The functions of the Board are to administer and enforce the provisions of EMPCA, and to use its best endeavours to further RMPS and EMPCS objectives. The Board must assess the Proposal in accordance with the Environmental Impact Assessment Principles defined in section 74 of the EMPCA.

3. The Proposal

The main characteristics of the Proposal are summarised below. A detailed description of the Proposal is provided in Section 1 of the EIS.

Summary of the Proposal's main characteristics

Activity

The Proposal involves permanent establishment of a NAF waste rock ASF, following operation of the facility on a trial basis. The ASF will operate within the bounds of Mining Lease (ML 12M/95) at the existing Renison Bell Tin Mine, approximately 136km south of Burnie and approximately 16km north-east of Zeehan on the West Coast of Tasmania, as shown in Figure 1. The ASF was given temporary approval as a trial under EPN No. 9937/1 on 14 September 2018.

Waste rock material is held on a run-of-mine (ROM) pad until it can be sorted into two separate streams, namely, NAF and PAF, by an ore sorter. It is noted that the operation of the ore sorter is not part of this assessment and that its operation is regulated under LOSP No. 3315 as varied by EPN No. 7092/2 in accordance with a general condition requiring no changes without approval. PAF material is directed underground or to the existing Tailings Storage Facilities (TSFs), while NAF material is hauled by truck to the ASF.

The ASF will receive up to 75,000m^3 (120,000 tonnes) of rock per year, with an approximate total capacity of 627,000m^3. As of September 2024, the ASF had approximately 318,000m^3 capacity remaining. It has been designed and constructed through an iterative peer review process. The overall design of the ASF has been assessed by an external third party with the primary focus being constructability and final landform stability. Appendices F and H to the EIS provide peer review advice on appropriate design, with appendix H to the EIS adopting these changes to provide a final design and construction that is considered achievable[1]. No complaints have been received about the operation of the ASF during the trial period. The EPA Regulatory Officer has advised that it is appropriate for EPN No. 9937/1 to be revoked once PCE No. 10975 is issued.

The ASF is within an existing void with a lining on the base and side walls comprised of a 300 mm layer of compacted low permeability (< 2.4×10^{-10} m/sec) clay. An additional 150 mm was subsequently placed over any non-conforming areas[2]. This is referred to as the Compact Clay Liner (CCL). The CCL was fully covered by a layer of NAF waste rock to shield it from degradation. The filling regime onsite consists of NAF material being end tipped within the void. The NAF material is placed by haulage trucks and shaped using dozers and excavators, to ensure that the batter slopes are stable. Each bench has a suitable shape and two percent fall to support free drainage of surface water. The filling regime is comprised of 4 stages progressing from west to east across the ASF. Each stage is constructed bottom to top so that on completion the operation can move to the next stage, allowing for progressive closure and rehabilitation (refer Figure 2).

Drainage infrastructure was constructed below the CCL, to collect and direct any groundwater seepage to a central pipe which discharges to the Lower Crusher Dam (LCD). The base of the ASF also has a drainage system to enable discharge of seepage from the ASF itself to the LCD. The design of the ASF aims to ensure all water that is moving through the ASF will be directed to the LCD. The LCD has a return pumping system which captures outflow from the LCD and recirculates it back into a Contaminated Water Treatment Plant (CWTP) that has recently been installed onsite to further treat water reporting to the LCD. Before this, the LCD was discharging directly to the Ring River catchment within limits set by the permit for the broader Renison Bell Tin Mine site, namely, LOSP No. 3315 as varied by EPN No. 7092/2.

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[1] Appendix F and H represent peer reviews conducted on the design of the ASF in 2021 and 2024 respectively. Appendix G represents the final detailed design report by GHD consultants that the peer review has agreed is appropriate in Appendix H.
[2] After testing of design criteria moisture content.

Location and planning context

Location	The Proposal is located within the Renison Bell Tin Mine and is situated on the Murchinson Highway, Renison Bell, within ML 12M/1995. The Renison Bell Tin Mine is approximately 136km south of Burnie and 16km north-east of the township of Zeehan on the West Coast of Tasmania.
Land zoning	Environmental Management under the *West Coast Interim Planning Scheme* (WCIPS)
Land tenure	PID 6032097 in an area which originally classified as Crown Land, but was reclassified as Renison Bell Regional Reserve in 2012 under the *Nature Conservation Act 2002* (NCA)
Mining lease	12M/1995
Lease area	4495 Hectares
Bond	As of December 2024, the bond for Mining Lease 12M/1995 was $6.3M. Mineral Resources Tasmania (MRT) has indicated that this is currently under review to accommodate recent upgrades and changes to the Renison Bell Tin Mine site.

Activity site

Land use	The activity is adjacent to the Renison Bell Tin Mine processing plant on Mining Lease 12M/1995, in an area that was previously used as a waste rock holding pad and a legacy mine waste disposal area. The Proponent operates the wider Renison Bell Tine Mine which it acquired in 2004.
Topography	The activity is situated topographically below the Renison Bell Mine processing plant. The Renison Bell Tin Mine is located 198m Australian Height Datum (AHD) with adjacent mountainous areas rising to above 1,000m AHD.
Geology	The broader Renison Bell Tin Mine site is characterised by the largest of three major strata-bound, carbonate replacement, pyrrhotite-cassiterite deposits found in western Tasmania. Local geology comprises recent deposits (lag gravels, colluvium, alluvium and peat), Pleistocene deposits (fluvioglacial gravels and sands, lacustrine silts and clays), and Cambrian argillite and greywacke heavily weathered at the surface. Where left exposed, the surface shows evidence of erosion.
Soils	Soil is described in the EIS as silty and clay-based. Acid sulphate soils (ASS) are likely to be present in small areas in the broader region surrounding the Renison Bell Tin Mine, but the EIS reports an extremely low probability of ASS (1-5% of mapping unit) occurring within a 500m buffer around the activity i.e. the ASF.
Hydrology	The Renison Bell Tin Mine site is located in a catchment that drains to both the Ring River to the east (500m from the boundary of the ASF activity area) and Lake Pieman to the north. The Lake Pieman catchment has been moderately modified by historical mining practices. The Proponent has installed two groundwater monitoring wells downstream of the ASF just above the LCD, which are labelled as GW16 and GW17 in the EIS and can be seen in Figure 3 of this report. GW16 is the primary groundwater monitoring bore for the ASF. Throughout the bore profile, several horizons of fine-grained clay materials were detected, and given their thickness, it is likely that these form an aquitard to groundwater percolation. Trace quantities of PAF material (i.e. pyrite) were also detected in several horizons of the bedrock, associated with lacustrine sediments.
Natural values	A desktop analysis based on review of Natural Values Atlas (NVA) reports indicates: • there are no geoconservation areas within 500m of the ASF; • there are no known raptor nests within 1000m of the site, however there is a single sighting of a Grey Goshawk within 500m of the ASF;

	• there is one *Biosecurity Act 2019* declared weed within the ASF footprint (blackberry (*Rubus fruticosus*)) and four *Biosecurity Act 2019* declared weeds within a 500 m buffer of the ASF (blackberry (*Rubus fruticosus/Rubus leucostachys*); white Spanish broom (*Cytisus multiflorus*); Spanish heath (*Erica lusitanica*); gorse (*Ulex europaeus*)); • there are no priority weeds reported within a 500 m buffer of the ASF; • vegetation communities within the ASF footprint are recorded on TasVeg 4.0 as extra urban miscellaneous (FUM); • vegetation communities within a 500m buffer around the ASF footprint are recorded on TasVeg 4.0 as *Eucalyptus obliqua* dry forest (DOB), extra urban miscellaneous (FUM), *Acacia melanoxylon* forest on rises (NAR) and *Nothofagus - Atherosperma* rainforest (RMT); and • there are no threatened native vegetation communities recorded on TasVeg 4.0 within a 500m radius of the ASF footprint.

Location region

Climate	The Renison Bell Tin Mine site has an average annual rainfall of 2,200mm, which exceeds evaporation by approximately 3:1. Relative humidity at both 9am and 3pm is 52%. Mean minimum temperature (July) is 3.4°C with a mean maximum temperature (January) of 19.5°C. The maximum recorded temperature was 36.1°C with a minimum recorded temperature of -6.1°C. The prevailing wind direction is south-west with an average wind speed of 18.5 km/h.
Surrounding land zoning, tenure and uses	The Proposal is located within the Renison Bell Regional Reserve, which is adjacent to Permanent Timber Production Zone land on its eastern, southern, and western extents. Lake Pieman lies directly to the north of the Renison Bell Regional Reserve and is approximately 2.8 km from the boundary of the ASF. Several other regional reserves are in the surrounding area including: • Lake Pieman Regional Reserve which is located approximately 3.5km to the north of the Renison Bell Tin Mine site; • Parting Creek Regional Reserve which is located approximately 9km to the south-west of the Renison Bell Tin Mine site; • Mount Dundas Regional Reserve which is located approximately 10km south of the Renison Bell Tin Mine site; and • Mount Murchinson Regional Reserve which is located approximately 10.5km west of the Renison Bell Tin Mine site. The nearest sensitive receptors are three residences located between 3.5km and 5km to the east of ASF, and the Rosebery Golf Club which is located 5km to the east of the ASF.
Species of conservation significance	A desktop analysis based on review of NVA reports indicates that there are: • no threatened flora listed under the *Threatened Species Protection Act 1995* (TSPA) within 500m of the ASF; • a number of threatened fauna species recorded within 500m of the ASF namely, spotted-tail quoll (*Dasyurus maculatus* subsp. *maculatus*), Tasmanian wedge-tailed eagle (*Aquila audax* subsp. *fleayi*), Tasmanian devil (*Sarcophilus harrisii*) and grey goshawk (*Accipiter novaehollandiae*); and • a number of threatened fauna species either recorded within 5000m of the ASF or likely to occur within 5000m of the ASF based on range boundaries, namely, Australian grayling (*Prototroctes maraena*); Tasmanian azure kingfisher (*Ceyx azureus* subsp *diemenensis*), tussock skink (*Pseudemoia pagenstecheri),* white-bellied sea-eagle (*Haliaeetus leucogaster*), Tasmanian masked owl (*Tyto*

	novaehollandiae subsp. *castanops*), Zeehan freshwater snail (*Beddomeia zeehanesis*), *Litoria raniformis* (Green and gold frog) and Little Henty River hydrobiid snail (*Phrantela conica*).

Proposed infrastructure

Major equipment	The following major equipment has been used for construction and operation of the ASF during the trial period and is proposed to continue to be used: • trucks for haulage of NAF waste rock from the ore sorter stockpile into the ASF for placement and spreading; • loaders and excavators for loading/spreading of NAF material either onto haulage trucks or at ASF; • conveyor for moving NAF waste from the ore sorter stockpile; and • a dust suppression water cart.
Other infrastructure	The following infrastructure is required for the ASF: • perimeter surface water cut-off drains; • CCL; • seepage collection system within the base of the ASF; • ASF leachate discharge pipe; and • internal haulage roads. ASF construction and operational staff use facilities at the existing Renison Bell Processing Plant including toilets and lunch areas.

Inputs

Water	Water for dust suppression via water cart.
Energy	The made energy source is fuel used for transport, plant and construction machinery.
Other raw materials	Clay was required for the CCL beneath the ASF. Shield rock was required for drainage construction. Gravel, soil and clay polymer liner will all be required for the final cover system.

Wastes and emissions

Liquid	Stormwater runoff and leachate from the ASF stockpile area and surrounding perimeter drains that is discharged to the LCD in the Renison Bell Tin Mine site.
Atmospheric	Dust will be generated by movement of vehicles transporting waste rock from the ore sorter stockpile to the ASF. There is also potential for dust generation from the uncovered NAF stockpiles associated with the ASF.
Solid	Solid waste from the activity includes NAF waste rock from the ore sorter, and general refuse including food scraps, paper and packaging.
Controlled wastes	The activity generates controlled wastes in the form of waste engine oil, hydraulic fluids, grease, tyres and replacement car batteries.
Noise	Noise is generated from loading, unloading and transport of waste rock material to and within the ASF and use of large equipment such as trucks, earth moving equipment and conveyors.
Greenhouse gases	Carbon dioxide is likely to be the predominant greenhouse gas emitted by trucks and construction machinery associated with transport of NAF waste rock to and within the ASF. Once the ASF is filled and the final landform has been created, the generation of greenhouse gases will be greatly reduced. Post-closure, the use of machinery to maintain the landform may result in some additional greenhouse gas emissions, but this is expected to be infrequent and short-term.

Construction, commissioning and operations

Proposal timetable	The Proposal is currently operating under a temporary approval (EPN 9937/1) issued in 2018. As of 6 September 2024, approximately 318,000m^3 of capacity remained in the ASF, which is expected to be at capacity by 2031. Final closure is anticipated to occur in approximately 2033/2034.
Operating hours (ongoing)	Processing of ore that generates NAF waste rock occurs on a 24 hour basis, 7 days a week. Haulage of the NAF material from the ore sorter stockpiles to the ASF only occurs between 0530 and 1800, 7 days a week.
Site preparation	Before the site was used as an ASF, the foundation was stripped back to moderately weathered rock. A section of legacy PAF tailings was extracted and placed in an existing TSF. The area was compacted and a CCL was then placed to a depth of 300mm to line the foundations of the ASF. A further 150mm conforming layer was added to specific sections of the ASF footprint in 2020 to ensure that the moisture requirements of the CCL could be achieved.

Figure 1: Activity location and Mining Lease (Mining lease is noted by a red line)

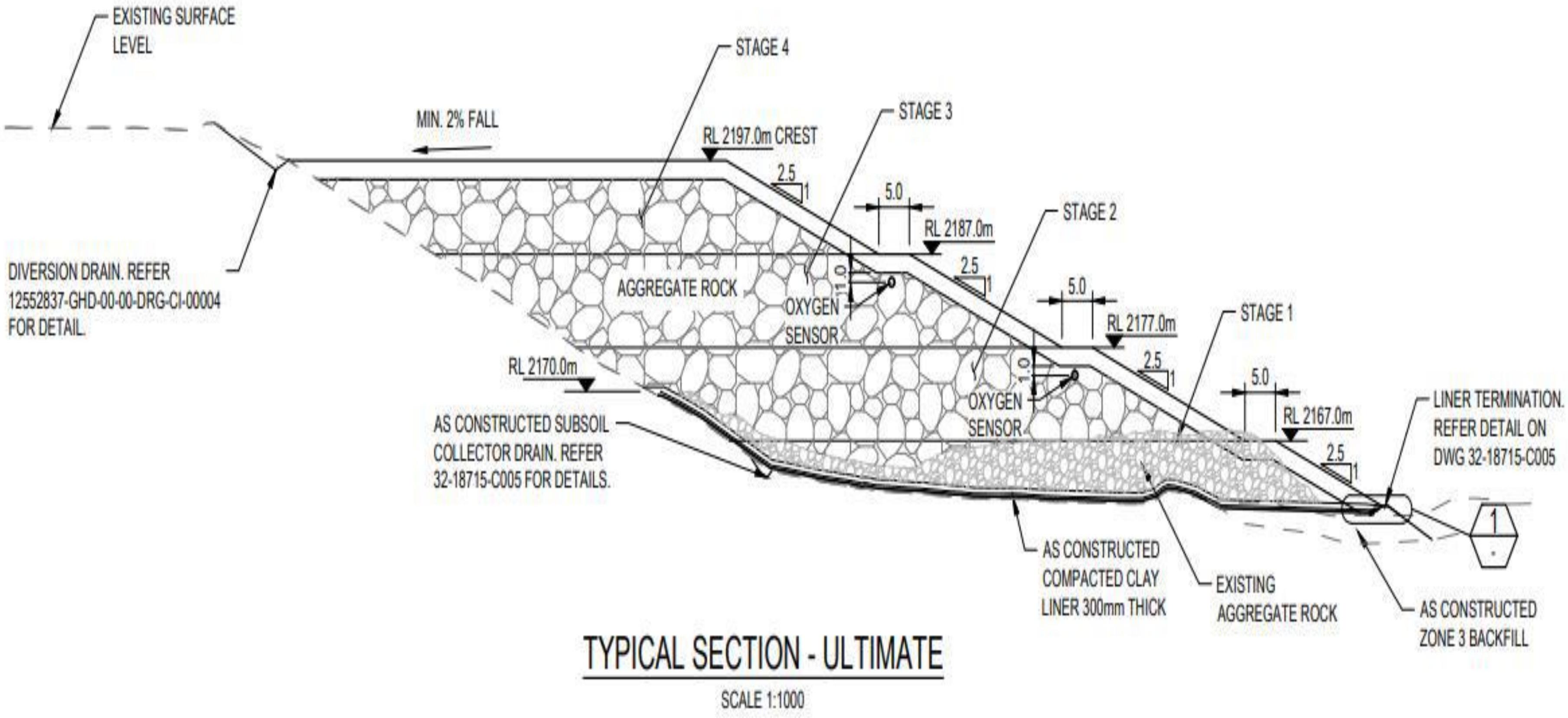

Figure 2: Four filling stages for permanent ASF (Figure 3 of the EIS)

Name	Easting	Northing
1	370803	5371700
2	370803	5371700
3	370690	5371713
4	370690	5371714
5	370693	5371744
6	370668	5371787
7	370668	5371809
8	370659	5371821
9	370648	5371831
10	370619	5371841
11	370619	5371841
12	370630	5371902
13	370621	5371952
14	370641	5371984
15	370750	5372024
16	370756	5372023
17	370773	5372003
18	370791	5372004
19	370797	5372002
20	370802	5371993
21	370808	5371986
22	370812	5371980
23	370843	5371967
24	370849	5371962
25	370857	5371961
26	370867	5371964
27	370872	5371963
28	370873	5371950
29	370868	5371929
30	370851	5371793

Figure 3: Site plan (Figure 2 of the EIS)

4. Project rationale and alternatives

According to the EIS, the purpose of the ASF will be to manage NAF waste rock generated at the Renison Bell Tin Mine. The ASF design aims to minimise rainwater ingress to reduce the opportunity for generation of NMD. The EIS also states that the location of the ASF provides optimal proximity to the ore sorter, and that construction has facilitated remediation of legacy contamination through removal or compaction of historic contaminated material and by formalising drainage to an established water treatment system. It is noted that removal or compaction of legacy material occurred during preparation for the trial and is now largely complete.

Three potential alternatives for managing NAF waste rock were considered, namely, backfilling underground, disposal in the existing D-Dam TSF, and disposal within another surface storage facility.

The EIS states that these alternatives are not feasible because:

- Backfilling large quantities of NAF waste rock from the surface to underground (as was the practice occurring before the trial) is less financially viable with mining progressing deeper underground. Furthermore, the limited voids present are already being/will be utilised for PAF waste rock. For these reasons, it is likely that there would be a need for a disposal facility on the surface in any event, near the Renison Bell Tin Mine's end of life;
- Disposal of NAF waste rock material into D-Dam would cause this TSF to be rapidly filled and necessitate the need for a new TSF; and
- Design, approval and development of an alternative NAF waste rock management facility could result in significant constraints on the Renison Bell Tin Mine operations and may present similar issues for consideration as the ASF.

5. Public and agency consultation

No public submissions were received during the public consultation period.

The EIS was also referred to several government agencies with an interest in the Proposal. No submissions were received.

The following individuals provided specialist advice on the EIS:

- Section Manager, Southern Industrial Regulation, Environmental Protection Authority;
- Regulatory Officer, Southern Industrial Regulation, Environment Protection Authority;
- Scientific Officer (Air), Environment Protection Authority;
- Scientific Officer (Water), Environment Protection Authority; and
- Scientific Officer (Noise), Environment Protection Authority.

6. Evaluation of key environmental issues

Two key environmental issues were identified for detailed evaluation in this report:

1. Waste rock management; and
2. Surface water quality.

These issues are discussed in the following subsections.

6.2 Key Issue 1: Waste rock management

6.2.1 Description

The Renison Bell Tin Mine Process Plant has two sorters in series, a calibrated x-ray transmission (XRT) sorter and an electromagnetic (EM) sorter. The EM sorter splits the waste stream from the XRT ore pre-concentration circuit into NAF and PAF waste streams through recognition of electromagnetically conductive materials. While the operation of the ore sorter is not considered part of this assessment, the sorting process is the mechanism by which NAF waste rock is separated for disposal into the ASF.

The following geochemical testing has been undertaken, and is relevant to the sorting and characterisation of material for the ASF:

- static and kinetic geochemical testing of NAF sample aggregates produced by the ore sorter over a 12 month trial period (July 2018 to August 2019, in accordance with EPN 9937/1 and included in Appendix I and Appendix K to the EIS;
- additional static and kinetic testing of sample aggregates between 5 November 2018 and 27 January 2019 (Appendix I to the EIS); and
- static testing of 1306 samples collected daily since commencement of the ASF trial (July 2019 to 1 June 2021), (results provided in Appendix K to the EIS, with a summary provided in Table 12 of the EIS).

The following is a summary of the results of the geochemical test work from Appendix I and Appendix K of the EIS:

- the ore sorter consistently sorted NAF and PAF aggregate materials into separate waste streams, with an average acid neutralizing capacity (ANC) to maximum probable acidity (MPA) ratio of 4.34;
- mass balance calculations of the NAF material stored in the trial ASF show an excess neutralizing capacity, with an acid-base account of -9,092 H_2SO_4;
- only three of the 1306 samples were found to have a net acid generation (NAG) pH equal to or less than 4.5 (minimum 4.2), both of which had a negative net acid producing potential (NAPP) (-2 to -24 H_2SO_4);
- the maximum NAPP was 72 H_2SO_4;
- leachate was found to be near neutral to slightly alkaline (pH 7.3 to 8.2 pH units), and unlikely to be acid generating;
- the NAF material however has the potential to generate NMD, metalliferous drainage at a neutral PH (e.g. SO_4, As, Mn and Ni, and potentially Cd, Cu, Zn and Pb).

The above results indicated that the waste rock material for storage at the ASF can be classified as is NAF.

According to the EIS, the amount of PAF waste material misclassified by the ore sorter and placed in the ASF will be minimised. NAF and PAF waste rock will continue to be differentiated, with the sorting quality assurance and control program used during the trial continuing. This includes the following:

- spot checking of material classified as NAF; and
- where possible, further adjustment of ore sorter parameters to decrease sulphide content and metals of concern in ASF leachate.

According to the EIS, approximately 95,000 m^3 of NAF material had already been placed in the base of the ASF as of May 2021[3]. This NAF material formed a uniform cover over the CCL, at the base of the ASF.

Detail on the proposed design and operation of the ASF on a permanent basis, with comparison against the trial operation of the ASF, is provided in Tables 5 and 6 of the EIS, and summarised as follows:

- detailed design of the ASF, as shown in Figure 3 of this report and Table 5[4] of the EIS, includes:
    - four construction stages progressed from west to east (see closure concept design drawing No. 12552837-GHD-00-00-DRG-CI-00002 P01, Appendix A of Appendix G to the EIS);
    - each stage constructed from bottom to top such that on complete filling of one stage, the operation will move to the next, allowing for progressive closure and rehabilitation (discussed further below);
    - bench height up to 10m, minimum width of 5m, with a minimum fall of 2% for water shedding; and
    - final closure toe slope of length of 27m, with a slope of 22 degrees.
- filling methodology will progress in accordance with Appendix G to the EIS, and includes:
    - re-shaping the existing batter slopes to meet detailed design geometry; and
    - placement of NAF material to the crest of each stage using trucks and dozing; and
    - operating procedures for ASF filling to be updated to include truck size limits and load limits for safe construction and operation.

Progressive capping will be trialled on completion of the benches and end walls for stages one and two to determine:

- if it is logistically feasible to undertake progressive capping in parallel with filling operations; and
- if levels of SO_4 in LCD discharge are significant at the CR compliance point[5].

Progressive rehabilitation is designed to minimize rainfall ingress into the stored aggregate and the potential for NMD generation (see section 6.2 of this report for information on water quality). According to the EIS, it will involve:

- shaping and reprofiling of the end slope;
- installation of a cover system designed to reduce rainwater infiltration and allow for the establishment of a vegetation cover. The proposed cover system will comprise a number of layers, as shown in Figure 4 of this report, including a low permeability geosynthetic clay liner (GCL) layer. It is noted that a needle-punctured, woven GCL with geotextile protection layer (ELcoseal X1000 or similar) was recommended during peer review of the ASF design (see Appendix F of the EIS, *Renison Mine Peer Review of Aggregate Storage Facility Design and Geotechnical Stability Assessment*, ATC Williams, 2021); and
- provision of a 2% fall on benches for surface water run-off.

[3] Undertaken during the ASF trial period.
[4] This represents an alternative waste rock filling plan to that undertaken for the trial. The design of the alternate waste rock filling plan was informed by the peer review (Appendix F,H and G), and as detailed in table 5 of the EIS.
[5] Compliance point "CR" pertains to the flow from the LCD to the Ring river which is regulated as part of the wider site activity under LOSP No. 3315 as varied by EPN No. 7092/2.

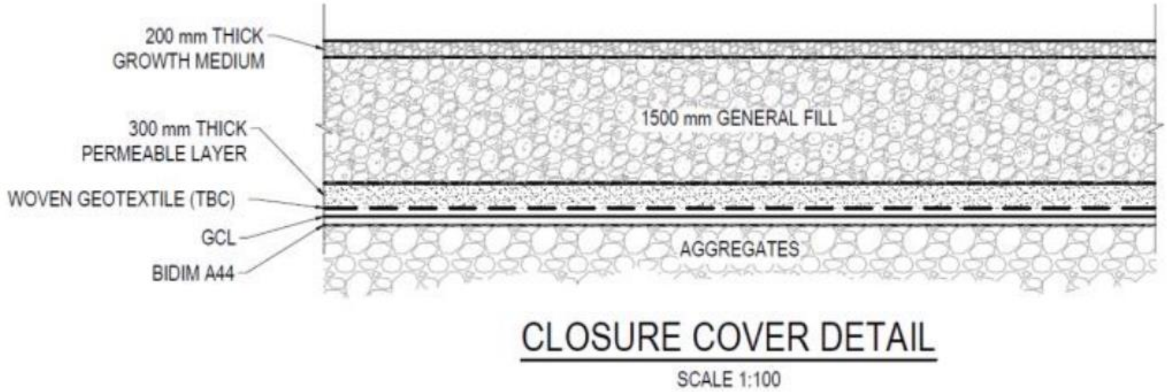

Figure 4: Closure cover system design (Figure 32 of the EIS)

According to the EIS, an ASF Closure Plan will be developed 12 months before ASF closure and submitted to the EPA for review. The Plan will include:

- analysis of laboratory test work;
- installation and design details for the preferred low permeability liner, if selected for inclusion in the closure cover system (supported by laboratory testing where needed);
- complete modelling of the cover system to confirm performance to design objectives; and
- a post-closure monitoring regime.

According to the EIS, the findings of the progressive rehabilitation trial will be considered when developing the construction specifications for the final closure cover system. The need for installation of oxygen sensors to measure post-closure oxygen levels within the ASF will also be considered during the progressive closure phase.

Further details on the proposed ASF Closure Plan are provided in section 8.6 of the EIS. Indicative closure timeframes for filled stages and the final ASF landform closure is provided in section 2.6.5 of the EIS.

According to the EIS, should premature or unanticipated closure be required, progressive cover and rehabilitation would minimize any works needed to provide a stable landform. In the event of sudden closure (temporary or permanent), the ASF Closure Plan would be submitted to EPA.

6.2.2 Management measures

The EIS commits to the following management measures (MM):

- MM 1 - Prepare, submit to the EPA and implement a detailed design which addresses the suggested changes and recommendations outlined in the geotechnical stability and peer review reports, e.g. change of batter slope and benching for improved safety, cover layer determination and methodology development, aggregate consolidation testing, drainage layer stability investigation, consolidation and liner testing, etc. (Okane, 2021; ATC Williams, 202111; Appendix F of the EIS);
- MM 2 - Continue to undertake ore sorting as part of the operation of the Renison Bell Tin Mine Processing Plant and as outlined in the Renison Environmental Management Plan (EMP) (BMTJV, 201910), with NAF classified material directed to the ASF;
- MM 4 - Inclusion of specific constraints in operating procedures regarding the types of construction plant and equipment permitted to operate on the ASF for loading and safety reasons;
- MM 5 - Place NAF classified waste rock in the ASF by truck end tipping delivery directly onto benches as per the staged filling plan (Figure 3 of the EIS);
- MM 6 – Shaping and grading to enable a 2% fall back towards the Process Plant;
- MM 7 - ASF filling operating procedures will be updated to include construction machinery, NAF delivery truck size limits and load limits for safe construction and operation of the ASF;

- MM 21 - Trial implementation of the progressive filling, cover and closure plan as outlined in Section 8 of the EIS upon completion of Stages 1 bench and end slope to determine if logistically can to be undertaken in parallel with filling operations;
- MM 22 - Continue the progressive capping and rehabilitation of benches if implementing the practice in parallel with filling operations is found to be logistically feasible and/or if levels of SO4 in LCD discharge are above modelled levels and/or exceed the limits set by LOSP No. 3315 as varied by EPN 7092/2;
- MM 23 - Update the following existing documents to address the progressive filling, cover, and closure plan:
    - Decommissioning and Rehabilitation Plan;
    - Operations Mine Closure Plan; and
    - Mine Closure and Rehabilitation Planning section of the EMP;
- MM 24 - Prepare a 'for construction detailed design' technical specification for the closure cover system (including cover materials, compaction, thickness, revegetation species mix, etc.), with consideration of the need for inclusion of a needle-punched low permeability liner depending on the physical properties of CCL available at closure;
- MM 25 - Continue to undertake static and kinetic geochemical testing and reporting of NAF aggregate (as outlined in Table 20[6]); and
- MM 29 - Monitoring of critical operating parameters during bench and cover construction, and rehabilitation (e.g. bench angle, bench angle and slope, cover compaction and permeability, revegetation establishment and maintenance);
- MM 30 - Complete laboratory test work on representative NAF aggregate treated with suitable encapsulation materials to advise the preferred encapsulation methodology at closure;
- MM 31 - Update and submit an updated Renison Closure Plan (which includes the ASF) to the EPA for review; and
- MM 32 - Implementation of the approved Closure Plan[7].

The EIS also included the following management measure:

- Develop and implement operational monitoring programs for:
    - NAF aggregate production and placement rates; and
    - ASF construction progress.

6.2.3 Public and agency comment and responses

No public or agency comment was received.

6.2.4 Evaluation

Based on the results from the ore sorter, it is unlikely that PAF material will be misclassified and placed in the ASF stockpile. The proponent will continue to undertake ore sorting as part of the wider operations at the Renison Bell Tin Mine, with temporary stockpiles of waste rock retained on the ROM pad until classified, and NAF material directed to the ASF (MM 2). This is considered important in order to minimise the potential for AMD and ensure the integrity of the surface and groundwater receiving environments are maintained and is required by condition **OP1**. Condition **OP1** will also ensure that NAF waste rock is placed within the ASF as detailed in the EIS. This will ensure that the waste rock is contained in the constructed facility.

It is noted that the NAF geochemical tests undertaken during the trial ore sorter, as required by EPN 9937/1[8] and summarised in Table 20 of the EIS, will continue (MM 25). This is supported and will assist in the ongoing classification of material.

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[6] The EIS refers to Table 19 for this MM however this is an error and should instead refer to Table 20.

[7] It is assumed that this refers to the ASF closure plan and not the overarching Renison Closure Plan, however it is unclear in the EIS.

[8] Ore sorter trial undertaken for a 6 week period to determine operational viability. The ore sorter is located outside the bounds of the Activity Area and is beyond the assessment of this proposal.

There is however potential for the NAF material to generate NMD (e.g. SO_4, As, Mn and Ni, and potentially Cd, Cu, Zn and Pb) and impact the receiving environment, particularly over the long term should pumping of the water from the LCD cease. It should be recognised that the intent is for the ASF to be in place in perpetuity. It is therefore important that the facility is constructed to be geotechnically stable and in particular, to reduce the potential for water infiltration. The design presented in Appendix G of the EIS (Renison Mine Aggregate Storage Facility Detailed Design Report (GHD, 2024)) has been peer reviewed and is considered appropriate. Condition **OP2** will ensure that the facility is constructed in accordance with this document. Further discussion of the potential for NMD to impact the receiving environment is discussed in Key Issue 2: Surface Water Quality.

The proposal to progressively construct a cover layer, with incorporation of a needle-punctured, woven GCL with geotextile protection layer (ELcoseal X1000 or similar) is supported by the peer review and has been included as a requirement in conditions **DC1** and **DC2**. Note, conditions DC1 and DC2 allow a case to be submitted to the Director should a variation in the proposed progressive cover layer system be required, recognising that the cover system is being trialled for stages one and two (see Table 6 of the EIS) to determine if it is logistically feasible to be undertaken in parallel with the filling operations (MM 21).

Condition **DC1** requires a Progressive Closure Plan for the ASF to be submitted to the Director within two months of the date on which the conditions take effect, detailing design and construction of the ASF. The Progressive Closure Plan is to include design details of the cover system and water shedding/water management measures, and monitoring and quality assurance criteria to ensure design requirements including cover compaction and permeability, bench angle slope and drainage have been met (MM 29). The Progressive Closure Plan is to also include a reporting regime, including final reporting of the results of the progressive capping and rehabilitation trial.

It is noted that the cover layer requirements for full closure of the ASF are not yet fully known. According to Appendix D of the EIS (Renison Operations ASF Supplementary Conceptual Design Report (Okane, 2020b)), a progressive cover layer is intended for the bench (plateau surface) and outer embankment face for each stage, with inner face of the ASF remaining exposed to allow for recontouring on closure. Table 5 of the EIS suggests that placement of material in the ASF as per the Detailed Design and Peer Review should eliminate the need for reprofiling of final end walls discussed in the concept.

It is acknowledged that the requirements for full closure will depend on the outcome of the progressive cover layer trial for stages one and two, as noted in the EIS.

The proposal to develop a Final Closure Plan for submission and approval by the Director is supported and required by Condition **DC2**. The Final Closure Plan is to include details of the final closure cover system design, taking into account the results of the progressive cover trial, results of all laboratory test work and modelling to confirm performance of the design objectives.

The Final Closure Plan is to also describe rehabilitation requirements post closure, the design of post-closure water management and a post-closure monitoring regime, including consideration of the need to install oxygen level sensors within the ASF post-closure.

The Final Closure Plan will also describe the requirements for early or unanticipated closure. While it is acknowledged that the proposal for staged progressive cover and rehabilitation will minimise the works required should unanticipated closure occur, progressive closure may not occur beyond stage two as described in the EIS. The Final Closure Plan is therefore required to be submitted within one month of completion of stage two[9]. Condition **G9** will ensure that the Director is notified on completion of stage two.

Condition **DC3** will ensure that the ASF is appropriately managed should it be closed temporarily and condition **DC4** will ensure the Director is notified of the intent to permanently close the ASF.

6.2.5 Conditions

The proponent will be required to comply with the following conditions:

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[9] Stage 2 is displayed in Figure 3. of this report and Figure 3. of the EIS.

OP1 Waste rock disposal

OP2 ASF construction and operation

DC1 Progressive Closure Plan

DC2 Final Closure Plan

DC3 Temporary suspension of activity

DC4 Notification of cessation

G9 Notification of completion of stage 2

6.3 Key issue 2: Surface water quality

6.3.1 Description

The ASF is located directly upslope of the LCD. The LCD receives all direct run off and seepage from the ASF. A return pumping system has been installed at the LCD to capture outflow and recirculate it back into the CWTP. Further to this, water from the CR compliance point (downriver from the LCD and outside this proposal) is also captured and returned to the LCD. Consequently, there is minimal discharge from the LCD to the receiving environment (the Ring River).

The trial ASF was constructed with the following drainage systems in place:

- perimeter drains on the southern, eastern and western sides of the ASF collecting surrounding surface water run-off, legacy seepage and groundwater, reducing water ingress into the ASF stockpile. All waters are directed from the perimeter drains to the LCD;
- liner on the base and side walls comprising a 300 mm layer of compacted low permeability (< 2.4×10^{-10} m/sec) clay (i.e. the CCL). An additional 150 mm was subsequently placed over a non-conforming[10] area.
- drainage infrastructure below the CCL to collect and direct surrounding seepage, including existing ground water seepage, to the LCD;
- drainage infrastructure within the ASF to collect and direct seepage (i.e. ASF leachate) to the LCD.

Existing water management features associated with the trial ASF are shown in Figure 5 below (Figure 8 of the EIS).

[10] After testing of design criteria moisture content.

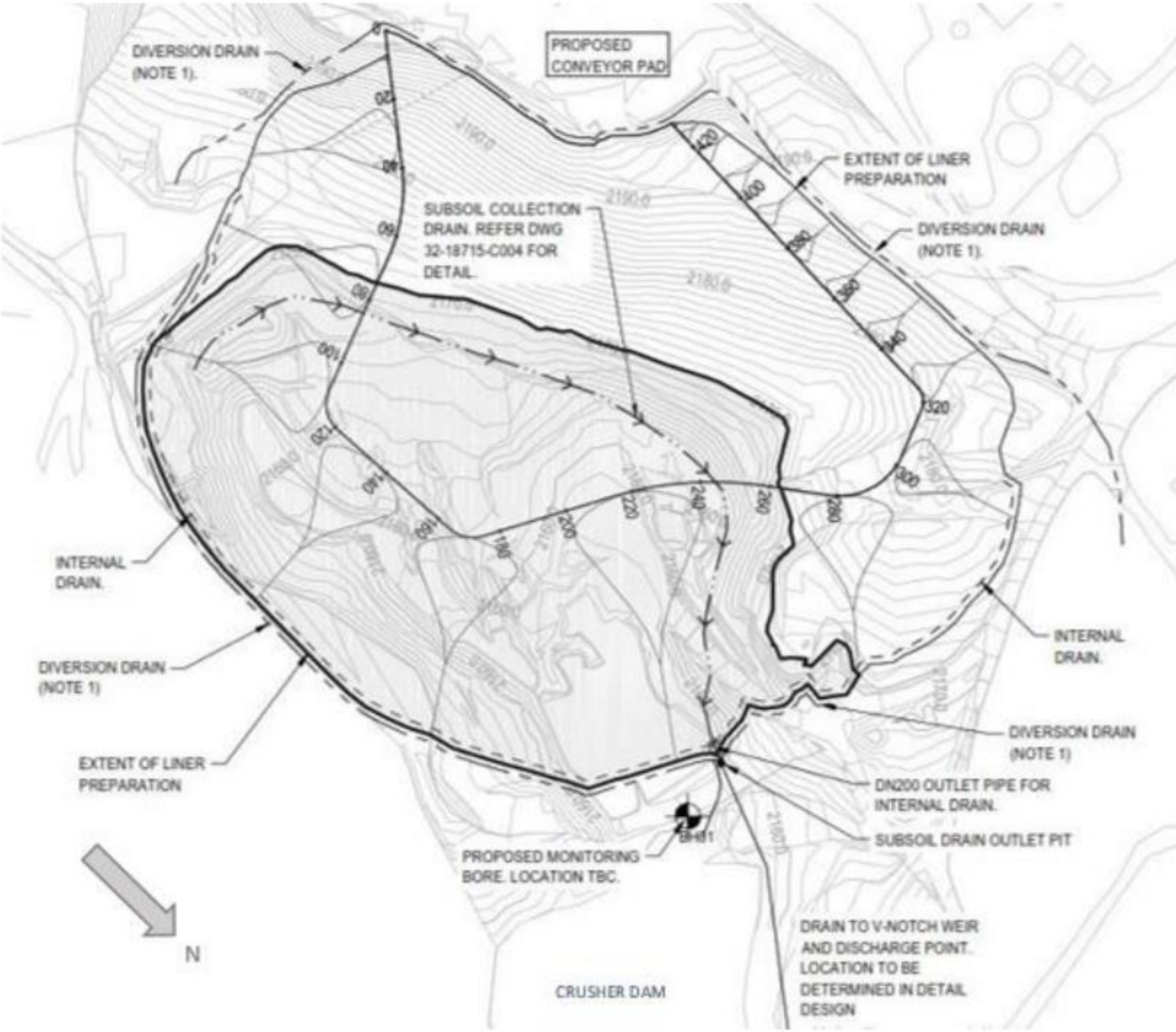

Figure 5: Surface water design features and arrangements (Figure 8 of the EIS)

Kinetic geochemical testing of ASF composite samples and modelling of potential ASF seepage is presented in Appendix I of the EIS. Results can be summarised as follows:

- Leachate is near neutral to slightly alkaline (pH 7.3 to 8.2 pH units) with low salinity (100 to 400 μS/cm).
- Leachate chemistry is indicative of sulphide oxidation, acid generation and subsequent neutralization (reflective of the presence of ANC).
- ASF seepage is unlikely to be acidic, however there is potential for NMD (SO_4, As, Mn and Ni) from rainfall infiltration (see Table 10 of the EIS for modelled concentrations).
- NMD loads (SO_4, As, Mn, Ni) were directly proportional to the amount of NAF waste rock stored, with other metals (Cd, Cu, Zn, Pb) potentially showing a similar trend.
- There was a modelled reduction in the concentration of Mn, As, Ni and SO_4 upon encapsulation of the stockpile on final closure (see Figures 4-6, 4-8, 4-10 and 4-12 of Appendix I to the EIS).

Results of ASF leachate monitoring undertaken from commencement of the trial to January 2021 are provided in Appendix L to the EIS, and summarised as follows (see also Figures 15 to 18 of the EIS):

- elevated concentrations of Cd (max 0.0098 mg/L), Co (max 0.196 mg/L), Cu (max 0.133 mg/L), Ni (max 0.176 mg/L), Pb (max 0.046 mg/L), Zn (0.925 mg/L) and SO_4 (max 3920 mg/L) were observed early in the trial. According to the EIS, these elevated concentrations were due to storm events entraining contaminants from adjacent areas, and damage to the CCL which has since been repaired and unlikely to occur again now that the CCL has been protected with a covering of aggregate;
- concentrations of key elements were reduced following improvements to drainage infrastructure and repairs to the CCL, e.g. Cd (max 0.0016 mg/L), Co (max 0.024 mg/L), Cu (max 0.069 mg/L), Ni (max 0.034 mg/L), Pb (max 0.004 mg/L), Zn (0.297 mg/L) and SO_4 (max 2250 mg/L)[11];
- concentrations of these metals are consistently below the discharge limit for the LCD (as set in condition M2 of LOSP No. 3315 as varied by EPN 7092/2).

Comparison of the modelled and actual seepage (Figures 20, 21 and 22 of the EIS) show the measured concentrations for As, Mn, and Ni are consistently, and significantly, lower than that modelled. A summary of the comparison is provided in Appendix M of the EIS. According to the EIS, seepage monitoring confirmed that an increase in ASF leachate occurs after rainfall events, supporting the assumption that rainwater percolates through the stockpile.

According to the EIS, the relative proportion of the ASF leachate that is likely to be captured within the LCD is approximately 1.25%, with a dilution factor of 80 to 1 and it is therefore expected that the LCD and associated CWTP would be capable of managing the ASF leachate.

A formal compliance monitoring point is not proposed at the ASF discharge point. Instead, the EIS proposes that compliance reporting for the wider Renison Bell Tin Mine operation will continue to be at the CR monitoring location (i.e. flow from the LCD) as referenced and required by conditions E4 and M2 of LOSP No. 3315 as varied by EPN 7092/2.

According to the EIS, a Closure Plan for the ASF will be developed, which will include:

- hydraulic analysis and design of the surface drainage system to establish dimensions for the drainage outlet pipe (which discharges to the LCD); and
- complete design of the surface drainage system (comprising bench drainage and side drainage slopes).

6.3.2 Management measures

The EIS commits to the following management measures (MM):

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[11] Concentrations taken from Appendix L to the EIS, from sampling date of 19 June 2019 onwards. It was determined that the first sampling date (20 May 2019) following the repair work to the CCL still exhibited elevated concentrations.

- MM 8 - Adopt standard sediment and erosion control procedures during construction/earthworks when placing progressive and closure cover layers on the ASF. According to the EIS, the following measures will be applied to prevent emission of total suspended solids (TSS):
    - use of rock lining and rock checks (as necessary) along the perimeter drains;
    - use of geotextile sediment fencing between progressive cover stages; and
    - maintenance of temporary and permanent sediment and erosion control measures;
- MM 9 - Continue to maintain perimeter surface water diversion drains around the ASF;
- MM 10 - Visually monitor surface water runoff from benches and end walls during high rainfall events ascertain if erosion is occurring and more formal, sustainable design may need to be included in the 'for construction detailed design' for implementation at closure;
- MM 11 - Continue to collect all seepage from the ASF and discharge ASF leachate to the LCD;
- MM 12 - If upon resumption of normal operating conditions within LCD discharge limits measured at monitoring point CR are not consistently being met, the proponent will investigate and implement additional MMs as needed;
- MM 13 - Undertake modelling to confirm the capacity of the closure cover drainage layer (thickness and permeability) to support the 'for construction closure detailed design';
- MM 26 - Continue to monitor ASF leachate discharge (leachate) as outlined in Table 21 of the EIS. ASF leachate water quality monitoring results will be provided to the EPA quarterly as data and a summary provided in AER and EMP Review reports with comparison to prescribed limits as set by LOSP No. 3315 as varied by EPN 7092/2;
- MM 28 - Generate an accurate ASF water balance and monitor surface and groundwater quality and flows within the vicinity of the ASF.

6.3.3 Public and agency comment and responses

No public or agency comment was received.

6.3.4 Evaluation

Condition M2 of LOSP No. 3315 as varied by EPN 7092/2 imposes limits on the discharge from the LCD at the downstream monitoring point CR. Given that there are existing imposed limits, it is agreed that discharge limits specific for the ASF are not required. Condition **EF1** will ensure that all drainage and runoff from the ASF continues to be directed to the LCD via the ASF Discharge point in accordance with MM 11.

According to the EIS, the amount of the ASF leachate reporting to the LCD is very small relative to other discharge that also reports to the LCD (approximately 1.25%), with a dilution factor of 80 to 1. The EIS argues that the LCD can effectively treat the ASF leachate, such that discharge from the LCD will not be comprised. Indeed, it is noted that when ASF input to the LCD had concentrations of parameters exceeding the LCD discharge limits (EPN 7092/2; SO_4, Co, Cu, Ni), there was no subsequent exceedance from the LCD, suggesting adequate treatment of the ASF leachate within the dam.

The EIS does highlight previous management issues with the LCD associated with TSS and pH due to excessive sedimentation and metal precipitate from mine site sources. According to the EIS, a Site Water Improvement Project across the Renison Bell Tin Mine site has been implemented, including installation of the CWTP and other measures to reduce sedimentation and the quantity of mine site water directed to the LCD. As outlined earlier in this report, one of these measures included an upgrade to the water management system incorporating a return pump system from the LCD to the CWTP.

According to the EIS, the LCD will now primarily receive catchment and ASF seepage water, with water now pumped from the LCD to the CWTP for further treatment. All water from the CWTP reports to the D-Dam TSF. The EIS concludes that subsequently, very little discharge from the LCD to the Ring River is expected other than via high flow events.

It is considered prudent nevertheless to continue monitoring the ASF leachate, in accordance with Table 21 of the EIS and MM 26 (condition **M1**), to confirm the proper management of the ASF, in particular, the ongoing exclusion of PAF material and acceptable operation of the cover system (see section 6.1 of this report). Standard condition **M2** outlines the requirements for sampling and measurement methods.

Given sedimentation, particularly TSS, has previously been identified as an issue for the LCD, measures to prevent erosion and entrainment of sediment from the site are considered important. Condition **EF2** will ensure the measures outlined in the EIS (MM 8) are appropriately implemented.

Construction and maintenance of site perimeter drains is also considered important (MM 9) and is required by condition **EF3**.

According to the EIS, development of a water balance for the ASF site, combined with surface and groundwater monitoring (although risk to the integrity of the CCL is considered low) is recommended for identification of potential integrity problems (i.e. potential leaks) associated with the CCL. This will assist in understanding the potential impact of the ASF in the long term.

Condition **EF4** requires an ASF site water balance be developed, with a water balance impact assessment report based on the collection of 12 months of surface and groundwater (see section 7.2 of this report) monitoring data (condition M1). A water balance report must be submitted to the Director within 15 months of the date on which the PCE conditions take effect, allowing 12 months for monitoring and 3 months for report preparation.

6.3.5 Conditions

The proponent will be required to comply with the following conditions:

EF1 ASF drainage

EF2 Stormwater

EF3 Perimeter drains or bunds

EF4 Water balance

M1 Monitoring

M2 Samples and measurements for monitoring purposes

7. Evaluation of other environmental issues

In addition to the key issues, the following environmental issues are considered relevant to the proposal and have been evaluated in this section:

1. Groundwater;
2. Waste management;
3. Air quality;
4. Noise emissions;
5. Natural values;
6. Hazardous substances; and
7. Greenhouse gas emissions.

7.1 General conditions

The following general conditions will be imposed on the activity:

G1 Activity Area

G2 Access to and awareness of conditions and associated documents

G3 Incident response

G4 Proposed change to activity

G5 Change of responsibility

G6 Change of ownership

G7 Complaints register

G8 Annual Environmental Review

G9 Notification of completion of stage 2

G10 Amendment of required plans and reports

7.2 Issue 1: Groundwater

7.2.1 Description and potential impacts

As outlined above, the ASF has been lined with a CCL that has drainage channels to direct all seepage from the ASF to a central discharge point, namely, the LCD. Testing has shown that the material being stored in the ASF could be NMD and the need to maintain the CCL means that there is potential to impact on groundwater through the penetration of leachate.

A groundwater monitoring bore, GW17, was installed at a depth of 8.1m as it was thought that a perched water table had been intersected. Subsequent monitoring indicated that there is no aquifer at this level and legacy PAF materials are present through the full length of the bore. Monitoring of GW17 was not progressed by the proponent as it did not intersect groundwater aquifers and the PAF material along the length of the bore causes unreliable monitoring.

Another groundwater monitoring bore, GW16, was installed adjacent to GW17 to a depth of 31.8m. GW16 encountered a water table at 28 m and a bedrock aquifer has been detected in subsequent monitoring. Baseline water quality results for GW16 indicate that the bedrock aquifer has been impacted by AMD as the pH is consistently more acidic than the lower limit of the ANZECC upland river guideline range, and samples consistently indicate elevated electric conductivity. The concentration of heavy metals (Al, Cu, Mn, Ni, Pb and Zn) in groundwater samples taken from GW16 exceeded the Australian and New

Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) freshwater trigger values for 80% of species protection during both the trial and interim continued operational period for the ASF.

The EIS indicates that GW16 is likely to be influenced by regional groundwater discharge from mining legacy sites within the broader catchment and legacy PAF in the immediate area, with HMS scats and legacy PAF tailings material at the top of the bore hole having considerable influence on the bore hole chemistry. According to the EIS, the water results within GW16 are inconsistent with that measured from within the ASF leachate, as ASF leachate is far less acidic than the samples taken from GW16. The EIS argues that this in turn indicates that leachate from the ASF is likely not impacting the groundwater acidity in GW16.

The EIS acknowledges that GW16 is an ideal location for a groundwater monitoring bore, being located so close to and drilled through, legacy AMD material. Notwithstanding this, the EIS argues that due to site constraints at the toe of the ASF, GW16 provides the best insight into groundwater quality in the immediate vicinity. Detailed results of the groundwater monitoring from GW16 are presented in Appendix O of the EIS with Appendix P of the EIS showing a comparison between GW16 monitoring, ASF leachate and samples from the ASF underdrain.

7.2.2 Management measures proposed in EIS

The EIS commits to the following management measures (**MM**):

- MM 14 - Continue to manage the CCL to ensure its integrity;
- MM 27 - Continue groundwater monitoring and reporting at GW16 as outlined in Table 22 of the EIS; and
- MM 28 - Generate an accurate ASF water balance and monitor surface and groundwater quality and flows in the vicinity of the ASF.

7.2.3 Public and agency comment

No public or agency comments were received in relation to groundwater.

7.2.4 Evaluation

MMs 14, 27 and 28 as proposed in the EIS are supported. The EIS indicates that the groundwater being measured in GW16 is already highly impacted by existing legacy AMD material. As such, the measurement and monitoring of groundwater via GW16 as committed to in MM 27 provides reasonable insight into potential changes in the groundwater over time including any significant change in metal concentrations that may be produced by the NMD from the ASF.

Although the proponent is already conducting groundwater monitoring onsite at GW16, LOSP No. 3315 as varied by EPN No. 7092/2 and EPN No. 9937/1 does not contain any groundwater monitoring conditions. GW16 is measured quarterly and is reported on at the same frequency. As such it is considered appropriate to impose condition **M1** to formalise the requirement for groundwater monitoring to be conducted and reported on quarterly at GW16. Condition M1 will also assist in ensuring that the integrity of the CCL can be monitored.

Standard condition **M2** outlines the requirements for sampling and measurement methods.

Conditions **DC1** and **DC2** discussed under Key Issue 1 Waste Rock Management are also relevant to ensure that rain water ingress will be managed progressively and on final closure, thus reducing the leachate generated by the ASF and helping to preserve the integrity of the CCL in the long term. In addition, condition **EF1** discussed under Key Issue 2 ensures that all discharge and drainage from the ASF will be directed to the LCD and compliments groundwater management measures on the site.

7.2.5 Conditions

The proponent will be required to comply with the following conditions:

M1 Monitoring requirements

M2 Samples and measurements for monitoring purposes

7.3 Issue 2: General waste management

7.3.1 Description and potential impacts

Waste rock is discussed in section 6.1 of this report and liquid waste in the form of leachate is discussed in section 6.2 of this report.

Waste management is discussed in section 7.9 of the EIS. Although the EIS states that the ASF will not generate any solid wastes, it is likely that machinery used to transport NAF aggregate to and within the ASF will. In particular, waste engine oil, hydraulic fluids, grease, tyres, batteries and general refuse (food scapes, paper and packaging) maybe generated on site.

The wider Renison Bell Tin Mine site also generates a range of solid and liquid wastes which are managed in accordance with conditions WM1 (Register of wastes removed) and WM2 (Controlled waste transport) of LOSP No. 3315 as varied by EPN 7092/2 and the Environmental Management Plan 2023-2028 (EMP). It is noted that condition G1 of LOSP No. 3315 as varied by EPN 7092/2, requires the Renison Bell Tin Mine site to be used and developed in accordance with the measures in the EMP. The EMP states that waste types and volumes are recorded on internal waste registers and are managed in accordance with existing Waste Management Standard Operating Procedures (WMSOPs) (per section 2.10 of the EMP).

The WMSOPs:

- outline operational responsibilities and requirements for waste tracking and reporting;
- state that there is an operational landfill on site that is permitted to accept solid inert waste;
- lists waste streams that cannot be disposed of to the landfill and provides the locations for temporary storage of scrap metal, plastic, tyres and timber waste streams for recycling;
- states that other waste streams (i.e. controlled waste) such as medical waste, hydrocarbons and putrescible waste are to be removed from site (by licensed contractor, as required) and disposed of to an approved facility.

7.3.2 Management measures proposed in EIS

The EIS does not propose any management measures for general waste.

7.3.3 Public and agency comment

No public or agency comment was received.

7.3.4 Evaluation

Although machinery used to transport NAF aggregate to and within the ASF may generate waste, including controlled waste, this can be readily managed under LOSP No. 3315 as varied by EPN No. 7092/2 which imposes conditions WM1 (Register of wastes removed) and WM2 (Controlled waste transport) and requires the Renison Bell Tin Mine site to be used and developed in accordance with the EMP that has committed to appropriate WMSOPs. These existing conditions and the associated EMP are considered adequate to manage the general waste generated by the ASF activity.

Other information relevant to waste management is included under **O11**, which requires waste to be managed in accordance with the best practice hierarchy of waste management.

7.3.5 Conditions

No specific conditions are required however the following other information is included:

O11 Waste management hierarchy

7.4 Issue 3: Air quality

7.4.1 Description and potential impacts

The primary air emissions from the activity are dust from plant and equipment used to undertake the haulage of NAF waste rock via the unpaved access road from the ROM pad. The recontouring and spreading of NAF material and wind erosion of exposed areas including the ASF final cover, may also generate dust emissions.

If the activities associated with the ASF are not managed appropriately, there is a potential to cause environmental nuisance beyond the boundary of the Renison Bell Tin Mine site, however, the nearest sensitive receptors to the ASF are three residences located between 3.5 and 5.5km to the east of the ASF, and the Rosebery Golf Club, located 5km to the east of the ASF.

Section 7.7 of the EIS states that air quality impacts from permanent operation of the ASF remain the same as for the operation of the trial ASF. The NAF waste rock stored within the ASF is an aggregate and is produced after passing through a wet screen which is proposed to remove any fine materials. As such, the EIS states that the risk of dust being generated from its handling and wind erosion of stockpiled material is considered low. The EIS also states that the use of water within the ASF to manage potential dust generation is actively avoided to minimise generation of NMD.

7.4.2 Management measures proposed in EIS

The EIS commits to the following management measures (MM):

- MM 15 - During drier months if needed, control dust via watering or other applicable methods on access road from ROM pad to ASF access point; and
- MM 16 - Maintain vegetation cover on rehabilitated benches to minimise dust generation.

7.4.3 Public and agency comment

No public or agency comment received in relation to air quality.

7.4.4 Evaluation

The risk of dust emissions from the ASF causing nuisance is considered very low due to the significant distance to the nearest sensitive receptors, the location of the ASF within the wider Renison Bell Tin Mine site and the wet production of NAF waste rock. No complaints have been received during the operation of the trial ASF. It is noted that LOSP No. 3315 as varied by EPN No. 7092/2 contains condition A1 which requires dust emissions from the Land, (defined as Mining Lease 12M/1995) to be controlled to the extent necessary to prevent environmental nuisance.

The proposed Activity Area for the ASF is well within the boundary of Mining Lease 12M/1995 and as such, no additional conditions are considered necessary.

7.5 Issue 4: Noise emissions

7.5.1 Description and potential impacts

Noise emissions are likely to be generated by haulage trucks moving between the ore sorting facility and the ASF. Noise emissions may also be generated by earth moving equipment while recontouring, spreading and rehabilitating the aggregate slopes in the ASF. It is noted that while processing of ore that generates NAF waste rock occurs on a 24 hour basis, 7 days a week, haulage of the NAF material from the ore sorter stockpiles to the ASF only occurs between 0530 and 1800, 7 days a week. Section 7.8 of the EIS states that there have been no noise complaints relating to the ASF during its temporary operation. The nearest sensitive receptors to the ASF are three residences located between 3.5 and 5.5km to the east of the ASF, and the Rosebery Golf Club, located 5km to the east of the ASF. According to the EIS, the ASF is considered very unlikely to produce noise emissions that would cause a significant impact when considered cumulatively and within the context of the other operations at the Renison Bell Tin Mine site.

The EIS states that a recent unattended baseline noise monitoring survey conducted for the proponent's Rentails project (a separate tailings reclamation and storage proposal) and the adjacent Paste Backfill Plant found the predominant noise source recorded at nearby sensitive receptors to be traffic on the Murchison Highway. The survey identified no baseline noise issues of concern associated with operation of the Renison Process Plant and related operations. The EIS notes that these surveys were conducted in 2019 and 2020 respectively, which is after construction of the ASF, and argues that although not conducted for the ASF, the surveys show there is a very low risk of noise impacting nearby sensitive receptors. Review of the reports produced for the noise surveys mentioned above supports the assertions made in the EIS.

7.5.2 Management measures proposed in EIS

The EIS proposes operational noise will be minimised by continuing to use well maintained equipment with contemporary noise reduction for ASF related operations (i.e. haulage, fill recontouring, cover layer placement and rehabilitation).

7.5.3 Public and agency comment

No public or agency comments were received.

7.5.4 Evaluation

Given the large distance to sensitive receptors and absence of previous noise complaints, it is considered that operation of the ASF will not increase noise emissions from the existing Renison Bell Tin Mine operations. The findings in the EIS that the noise emissions generated by the ASF and its operation are unlikely to cause nuisance to sensitive receptors are supported. It is noted that EPN No. 9937/1 does not have any conditions to control noise emissions or limit operating hours, nor does the approval for the wider Renison Bell Tin Mine, LOSP No. 3315 as varied by EPN No. 7092/2.

The potential for nuisance noise emissions is very low and no specific conditions to control noise emissions or limit ASF operating hours are imposed.

7.6 Issue 5: Natural values

7.6.1 Description and potential impacts

The ASF has the potential to impact on flora and fauna through disturbance to breeding eagles, impacts to freshwater species from impacts to surface and/or groundwater quality and roadkill. Section 7.11 of the EIS details the ecological conditions on the site. The ASF is a highly modified landscape and has previously been used as a waste rock dump and ROM pad and no vegetation clearing is proposed. Due to the highly modified site, the EIS Guidelines issued by the Board did not require ecological field surveys. A desktop analysis was conducted by the proponent using NVA records and the summarised results of this can be found in Table 16 of the EIS.

The EIS states that there is no threatened flora of state or national significance or threatened vegetation communities within a 500m buffer of the ASF. The EIS indicates that there are three raptor nests within a 500m buffer of ASF, however, a review of the NVA and subsequent correspondence with the proponent suggests this appears to be an error within the EIS. Review of LISTmap layers and the NVA Raptor Nest Data Project confirms that there are no known raptor nests within 1000 m of the ASF.

The EIS states that there is no proposed variation of truck movements or operating hours as the activity moves from temporary to permanent and as such, the EIS states that the proposal does not have the potential to increase in roadkill incidents onsite.

Activities associated with construction, operation, closure and rehabilitation of the ASF have the potential to spread weeds, pathogens and diseases. In particular, it is noted that during the closure and rehabilitation stages of the proposal, offsite soil, clay and other closure materials will be introduced to the site. As explained earlier in this report, the EIS indicates that only one weed species (Blackberry (*Rubus fruticosus*)) declared under the *Biosecurity Act 2019* is present in the ASF footprint with four other weed species declared under the *Biosecurity Act 2019* present within 500m of the ASF footprint (Blackberry (*Rubus fruticosus*), white Spanish broom (*Cytisus multiflorus*), Spanish heath (*Erica lusitanica*) and gorse (*Ulex europaeus*)). The EIS does not provide details of any on ground surveying of weeds currently present within the ASF footprint or wider Renison Bell Tin Mine site, nor was this required by the EIS Guidelines issued by the Board. The EIS does not address the risk of *Phytophthora cinnamomic* however, records of *Phytophthora cinnamomi* are documented on the NVA within the Renison Bell Tin Mine site. These records are 'symptom' sightings based on visual observation only and no specimens or tests appear to have been undertaken to confirm the presence of *Phytophthora cinnamomi*.

7.6.2 Management measures proposed in EIS

As the EIS states that the potential for direct impacts on native flora or fauna is low, no management measures (MMs) are proposed in relation to these natural values. However, MM17 in the EIS commits to ensuring all workers involved in ASF cover placement activities have completed a site induction and been made aware of the proponent's soil and plant hygiene procedure, i.e. vehicle cleaning.

7.6.3 Public and agency comment

No public or agency comments were received.

7.6.4 Evaluation

Given the highly modified nature of the site, the potential to impact flora and fauna is considered very low. The potential impact to breeding raptor species is considered low as there are no known nests within 1000m of the ASF and the activity is primarily haulage and fill spreading with no blasting, large scale quarrying or vegetation clearing. The pattern of truck and machinery movements is small, with trucks and machinery travelling from the ore sorter stockpile down into the ASF void. The proposed operating hours for the ASF (0530hrs – 1800hrs) do have the potential to result in truck or machinery movements during nighttime hours[12] in the winter months of the year and therefore there is some roadkill risk for nocturnally active fauna. However, this risk is considered minimal because the number of haulage movements will be low, restricted to a small area and undertaken at a low speed.

The ASF will discharge all water into the LCD, which has a discharge point into the nearby freshwater environment. The potential impact to freshwater species from this discharge is effectively mitigated by the CWTP and Site Water Improvement Projects as outlined in the EIS and section 6.2 of this report. Alongside this, discharge from the LCD is effectively regulated by condition M2 (Discharge limits) in LOSP No. 3315 as varied by EPN No. 7092/2.

Weeds onsite are also effectively managed by condition OP1 (Weed management) in LOSP No. 3315 as varied by EPN No. 7092/2 and the weed management commitments in the EMP which must be complied with in accordance with condition G1 (Compliance with EMP and BPEM) of LOSP No. 3315 as varied by EPN No. 7092/2.

There are no existing soil pathogen hygiene conditions in LOSP No. 3315 as varied by EPN No. 7092/2 or EPN No. 9937/1 nor does the EMP mention soil hygiene. However, given the ASF is a highly modified rock dump in an existing mine site, the overall risk of soil borne pathogens spreading and impacting on natural values is considered low.

For these reasons, no specific conditions are required to be imposed to manage potential impacts on natural values associated with the ASF.

7.7 Issue 6: Dangerous goods and hazardous substances

7.7.1 Description and potential impacts

Improper handling of dangerous goods and hazardous substances has the potential to cause environmental harm. Section 7.10 of the EIS states that the ASF is a waste rock operation, and the EIS indicates that no storage or handling of dangerous goods is proposed to occur within the ASF footprint. The EIS also states that all vehicles are refuelled at a nearby existing refuelling facility on the wider Renison Bell Tin Mine site. The EIS also states that the ASF is operated as an integrated part of the Renison Bell Tin Mine mineral processing operations and has adopted its management and operational procedures as needed.

7.7.2 Management measures proposed in EIS

The management measures (MMs) proposed in the EIS are as follows:

- induction for workers on handling, storage and use of hazardous substances and dangerous goods;

[12] As defined in Survey guidelines and management advice for development proposal that may impact the Tasmanian Devil, found here: Devil Survey Guidelines and Advice.pdf

- refuelling at the current onsite refuelling facility (no new facilities for the ASF);
- provision of spill kits around the site; and
- no storage or handling of dangerous goods or environmentally hazardous materials within the ASF footprint.

7.7.3 Public and agency comment

No public or agency comments were received.

7.7.4 Evaluation

No dangerous goods or hazardous substances are proposed to be stored or handled within the ASF, as such the risk of environmental harm being caused by improper storage or handling of these substances on the ASF is very low. The wider Renison Bell Tin Mine is a registered Manifest Quantity Workplace with WorkSafe Tasmania and so already has a number of measures in place to remain compliant with requirements for the handling of dangerous good and hazardous substances across the wider site. Furthermore, LOSP No. 3315 as varied by EPN No. 7092/2, includes standard conditions H1(Spill kits) and H2 (Inventory of hazardous materials) for the management of dangerous good and hazardous substances across the wider Renison Bell Tin Mine site.

For these reasons, no specific conditions are required to be imposed to manage potential impacts associated with handling and storage of dangerous goods and hazardous substances.

7.8 Issue 7: Greenhouse gas emissions

7.8.1 Description and potential impacts

Section 7.12 of the EIS discusses greenhouse gas emissions in relation to the ASF and its operation. The EIS states that other than vehicular emissions, the ASF has no processes which may generate direct greenhouse gas emissions or ozone depleting substances.

As the ASF is already operating as a part of the wider Renison Bell Tin Mine operation, the identified vehicular emissions have already been captured in the proponent's National Greenhouse and Energy Reporting (NGERs) which is prepared and submitted annually (see Figure 30 of the EIS). The EIS states that within the NGER reporting year of 2019-2020, emissions and energy usage for the Renison Bell Tin Mine (including vehicular movements associated with the continued operation of the ASF) were as follows:

- scope 1 emissions (direct emissions) were 7,568t CO2-e from fuels and oils used for transport and stationary purposes;
- scope 2 emissions (emissions from indirect consumption of energy) were 15,820t CO2-e from purchase of electricity; and
- total energy consumed was 491,619 gigajoules.

7.8.2 Management measures proposed in EIS

The EIS proposes the following mitigation measures in relation to greenhouse gas emissions:

- continue to adopt operational and technological measures to improve diesel use efficiency where possible;
- continue to prepare and submit NGERs and National Pollutant Inventory (NPI) reports for the Renison Bell Tin Mine operations; and
- source local CCL, CGL or BGM supplier to minimise transport distances where possible.

7.8.3 Public and agency comment

No public or agency comments were received.

7.8.4 Evaluation

The MMs proposed in the EIS are supported and the proponent complies with the reporting requirements in the *National Greenhouse and Energy Reporting System Act 2007*, the *National Greenhouse and Energy Reporting Regulations 2008* and undertakes the associated NGER annual reporting.

On this basis, no specific conditions are considered necessary to manage impacts associated with greenhouse gas emissions.

8. Issues not assessed by the Board

The following issues have been raised during the assessment process but are not the responsibility of the Board under EMPCA. Where these issues may be more appropriately addressed by another regulatory agency, the name of that agency has been provided:

1. Non-environmental impacts of traffic (West Coast Council);
2. Hazard analysis and risk assessment (Mineral Resources Tasmania/WorkSafe); and
3. Fire risk (West Coast Council).

9. Report conclusions

This assessment has been based on the information provided by the proponent, Bluestone Mines Tasmania Joint Venture, in the permit application and the case for assessment (the EIS).

This report incorporates specialist advice provided by EPA scientific and regulatory staff.

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the Proposal; and
2. the assessment of the Proposal has been undertaken in accordance with the Environmental Impact Assessment Principles; and
3. the Proposal is capable of being managed in an environmentally acceptable manner such that it is unlikely that the RMPS and EMPCS objectives would be compromised, provided that PCE No. 10975 in Appendix 2 to this report are imposed and duly complied with.

The environmental conditions in Appendix 2 to this report are a new set of operating conditions for the activity that will replace the existing EPN 9937/1 once revoked. This permit does not replace the existing LOSP No. 3315 as varied by EPN No. 7092/2, which is the permit for broader Renison Bell Tin Mine site.

10. Report approval

Environmental Assessment Report and conclusions, including environmental conditions, adopted:

HELEN MULLIGAN

ACTING EXECUTIVE DIRECTOR, ENVIRONMENTAL ASSESSMENTS

Acting under delegation from the Board of the Environment Protection Authority

Date: 27 February 2025

11. References

ATC Williams (2021) Renison Mine Engineering Peer Review of Aggregate Storage Facility Design and Geotechnical Stability Assessment. 118122.06-Rev0, December 2021.

ATC Williams, (2024) Renison Mine Engineering Peer Review of Aggregate Storage Facility Design and Geotechnical Stability Assessment. 118122.10-R01-Rev1, February 2024.

BMTJV (2019) Environmental Management Plan: Non-Acid Forming Aggregate Storage Facility. Renison Operations. Revision B. August 2019.

BMTJV (2024) Environmental Impact Statement, Permanent Non-Acid Forming Aggregate Storage Facility. Renison Operation, Renison Bell.

NVC (2019) Rentails Noise Assessment. Prepared by Noise Vibration Consulting. Dated 20 August 2019.

NVC (2020) Renison Paste Backfill Plant Noise Assessment. Prepared by Noise Vibration Consulting. Dated 23 December 2020.

12. Appendices

Appendix 1 Table of proponent management measures

Appendix 2 Permit Conditions Environmental (PCE) No: 10975

Appendix 1: Table of proponent management measures

Table 1: Proponent management measures (Table 23 of EIS)

Number	Action	Timing
1	Prepare, submit to the EPA and implement a detailed design which addresses the suggested changes and recommendations outlined in the geotechnical stability and peer review reports, e.g. change of batter slope and benching for improved safety, cover layer determination ad methodology development, aggregate consolidation testing, drainage layer stability investigation, consolidation and liner testing, etc. (Okane, 2021; ATC Williams, 2021[11]; Appendix F)	During Operations
2	Continue to undertake ore sorting as part of the Renison Process Plant operation as outlined in the Renison EMP (BMTJV, 2019[10]), with temporary stockpiles of sorted waste rock material retained on the ROM pad until classified and NAF classified material directed to the ASF.	During Operations
3	Relocate all PAF and UC classified aggregate to underground or TSF (D-Dam) within 6 weeks of production.	During Operations
4	Inclusion of specific constraints in operating procedures regarding the types of construction plant and equipment permitted to operate on the facility for loading and safety reasons	During Operations
5	Place NAF classified waste rock in the ASF by truck end tipping delivery directly onto benches as per the staged filling plan (Figure 3).	During Operations
6	Shape, grade (2% fall back towards the Process Plant).	During Operations
7	ASF filling operating procedures will be updated to include construction machinery / NAF delivery truck size limits and load limits for safe construction and operation of the ASF.	During Operations
8	Adopt standard BMTJV sediment and erosion control procedures during construction / earthworks when placing progressive and closure cover layers on the ASF.	During Operations and Closure
9	Continue to maintain perimeter surface water diversion drains around the ASF.	During Operations
10	Visually monitor surface water runoff from benches and end walls during high rainfall events ascertain if erosion is occurring and more formal, sustainable design may need to be included in the 'for construction detailed design' for implementation at closure.	During Operations
11	Continue to collect all seepage from the ASF and discharge ASF leachate to the Lower CR Dam.	During Operations
12	If upon resumption of normal operating conditions within Lower CR Dam discharge limits measured at CR are not consistently being met, BMTJV will investigate and implement additional management measures as needed.	During Operations

Number	Action	Timing
13	Undertake modelling to confirm the capacity of the closure cover drainage layer (thickness and permeability) to support the 'for construction closure detailed design'	Pre-Closure
14	Continue to manage the CCL to maintain its integrity.	During Operations and Closure
15	(During drier months if needed) control dust via watering or other applicable methods on access road from ROM pad to ASF access point.	During Operations
16	Maintain vegetation cover on rehabilitated benches to minimize dust generation.	During Operations and Closure
17	Ensure all workers involved in cover placement activities have completed a site induction and been made aware of BMTJV's soil and plant hygiene procedure, i.e. vehicle cleaning.	During Operations and Closure
18	Update relevant elements of BMTJV's Emergency and Crisis Management System to include ASF hazard issues ranked in this EIS potential incident scenario assessment as moderate (Table 19).	During Operations and Closure
19	Update relevant elements of BMTJV Draft Bushfire Management Plan 2018 to include ASF potential fire risk of the rehabilitated landform as part of the design and implementation works.	During Operations and Closure
20	Update BMTJV EMS and procedures to include ASF operation and closure as needed.	During Operations and Closure
21	Trial implementation of the progressive filling, cover and closure plan as outlined in Section 9 upon completion of Stages 1 bench and end slope to determine if logistically via to be undertaken in parallel with filling operations.	During Operations and Closure
22	Continue the progressive capping and rehabilitation of benches if implementing the practice in parallel with filling operations is found to be logistically feasible and/or if levels of SO_4 in Lower CR Dam discharge are above modelled levels and/or exceed EPN 7092/2 limits.	During Operations and Closure
23	Update the following existing Renison documents to address the progressive filling, cover, and closure plan: • Decommissioning and Rehabilitation Plan • Renison Operations Mine Closure Plan; and • Mine Closure and Rehabilitation Planning section of the EMP for the existing Renison Tin Mine.	During Operations and Closure
24	Prepare a 'for construction detailed design' technical specification for the closure cover system (including cover materials, compaction, thickness, revegetation species mix, etc.), with consideration of the need for inclusion of a needle-punched low permeability liner depending on the physical properties of CCL available at closure.	During Operations and Closure
25	Continue to undertake static and kinetic geochemical testing and reporting of NAF aggregate (as outlined in Table 19).	During Operations
26	Continue to monitor ASF leachate discharge (leachate) as outlined in Table 20.	During Operations
27	Continue groundwater monitoring and reporting at GW16 as outlined in Table 22.	During Operations

Number	Action	Timing
28	Generate an accurate ASF water balance and monitor surface and groundwater quality and flows within the vicinity of the ASF.	During Operation
29	Monitoring of critical operating parameters during bench and cover construction, and rehabilitation (e.g. bench angle, bench angle and slope, cover compaction and permeability, revegetation establishment and maintenance).	During Operations
30	Complete laboratory test work on representative NAF aggregate treated with suitable encapsulation materials to advise the preferred encapsulation methodology at closure.	2 years prior to facility closure
31	Update and submit an updated Renison Closure Plan (which includes the ASF) to the EPA for review.	12 months prior to facility closure
32	Implementation of the approved Closure Plan.	12 months after facility closure

Appendix 2: Permit Conditions Environmental (PCE) No: 10975

PERMIT PART B
PERMIT CONDITIONS - ENVIRONMENTAL No. 10975

Issued under the *Environmental Management and Pollution Control Act 1994*

Activity:	**The operation of a waste treatment and disposal facility (ACTIVITY TYPE: Other (non-inert) Waste Depots)** **RENISON BELL MINE,** **RENISON BELL TAS 7469**

The above activity has been assessed as a level 2 activity under the *Environmental Management and Pollution Control Act 1994* under delegation from the Board of the Environment Protection Authority.

Acting under Section 25(5)(a)(i) of the EMPCA, the Board of the Environment Protection Authority has required that this Permit Part B be included in any Permit granted under the *Land Use Planning and Approvals Act 1993* with respect to the above activity.

Municipality:	**WEST COAST**
Permit Application Reference:	**2022/80**
EPA file reference:	**292571**

Date conditions approved: 27 February 2025

Signed:

A/Executive Director, Environment Protection Authority

DEFINITIONS

Unless the contrary appears, words and expressions used in this Permit Part B have the meaning given to them in **Schedule 1** of this Permit and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Permit Part B, the EMPCA prevails to the extent of the inconsistency.

ENVIRONMENTAL CONDITIONS

The person responsible for the activity must comply with the conditions contained in **Schedule 2** of this Permit Part B.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

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Attachments

Schedule 1: Definitions

In this Permit Part B:-

Activity means any environmentally relevant activity (as defined in section 3 of EMPCA) to which this document relates, and includes more than one such activity.

Activity Area means the area to be used for the Activity when these conditions take effect, as depicted in Attachment 1.

ASF means Aggregate Storage Facility as described in the EIS

Authorized Officer means an authorized officer under section 20 of EMPCA.

Director means the Director, Environment Protection Authority holding office under section 18 of EMPCA and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.

EIS means the document titled *Environmental Impact Statement - Permanent Non-Acid Forming Aggregate Storage Facility, Bluestone Mines Tasmania Joint Venture Pty Ltd - 6 September 2024 - Final 03*.

EMPCA means the *Environmental Management and Pollution Control Act 1994*.

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in section 5 of EMPCA.

Environmental Nuisance has the meanings ascribed to it in section 3 of EMPCA.

EPA Board means the Board of the Environment Protection Authority established under section 13 of EMPCA and includes a delegate or person authorised in writing by the EPA Board to exercise a power or function on the EPA Board's behalf.

NAF means non acid forming, being material with a NAG pH of greater than or equal to 4.5 and a Net Acid Producing Potential (NAPP) of less than 0kg H_2SO_4/tonne.

NAG pH means the pH of the post-reaction solution resulting from a Net Acid Generating (NAG) Test.

NAPP means net acid producing potential, being the estimated maximum potential acidity (assuming oxidation of all Sulphide) of a material less its acid neutralising capacity (ANC) as determined via a geochemical static test procedure and expressed in kg H_2SO_4/tonne.

Non-Trivial Environmental Incidents means an incident requiring the person responsible to implement actions to control or respond to the incident to minimise environmental harm and/or nuisance.

PAF means potentially acid forming, defined as material with a NAG pH of less than 4.5 and a Net Acid Producing Potential (NAPP) of greater than or equal to 0kg of H_2SO_4/tonne and also includes UC material.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Planning Authority means the Council(s) for the municipal area(s) in which the Activity Area is situated.

Pollutant has the meaning ascribed to it in section 3 of EMPCA.

Renison Mine Aggregate Storage Facility (ASF) Detailed Design Report means the document prepared by GHD for Bluestone Mines Tasmania Joint Venture Pty Ltd dated 29 January 2024, found at Appendix G of the EIS.

Reporting Period means the period 1 July to 30 June.

Stage 2 has the meaning ascribed to it in the EIS and as depicted in Figure 3 of the EIS.

Stormwater means water runoff as a consequence of a rainfall event, whether surface flow, piped flow, or flow within conduits, including any contaminants collected by the water during its passage.

UC means uncertain, defined as material with a NAPP of less than 0kg H_2SO_4/tonne AND a NAG pH of less than 4.5 OR material with NAPP of greater than or equal to 0kg H_2SO_4/tonne AND a NAG pH of greater than or equal to 4.5.

Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

1 The activity must not exceed the following limits :

1.1 120,000 tonnes per year of waste received or likely to be received (excluding materials for recycling)

General

G1 Activity Area

The activity must be confined to the Activity Area.

G2 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work within the Activity Area, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G3 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G4 Proposed change to activity

1 The person responsible must notify the Director in writing prior to implementing any change to the activity authorised by this document that may cause or increase the emission of a pollutant or which may result in environmental harm or environmental nuisance (even temporarily). A change includes, but is not limited to, any of the following:

1.1 an increase in the discharge of a pollutant, or the location of its discharge.

1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity.

1.3 any clearance of native vegetation or earthworks.

1.4 a change in the quantity or characteristics of materials used in carrying out the activity.

2 The notification must be in an approved form and include the following:

2.1 details of the proposed change;

2.2 an assessment of the environmental impacts that may result from the change;

2.3 any relevant approvals held by the person responsible; and

2.4 any advice from the relevant planning authority to the effect that approval is not required.

3 The person responsible must provide additional information as requested by an Authorized Officer.

4 The proposed change must not be implemented until the Director has confirmed in writing that they are satisfied that no other approval or variation of this document is required.

5 For the avoidance of doubt, a notification of a proposed change under this provision is not required if the proposed change is part of a referral to the EPA Board for assessment under sections 24, 25 or 27 of EMPCA.

G5 Change of responsibility

If the person responsible for the activity intends to cease to be responsible for the activity, that person must notify the Director in writing of the full particulars of any person who will become the person responsible for the activity, before such cessation.

G6 Change of ownership

If the owner of the Activity Area changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of the Activity Area, the person responsible must notify the Director in writing of the change or intended change of ownership.

G7 Complaints register

1 A public complaints register must be maintained. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

- **1.1** the date and time at which the complaint was received;
- **1.2** contact details for the complainant (where provided);
- **1.3** the subject matter of the complaint;
- **1.4** any investigations undertaken with regard to the complaint; and
- **1.5** the manner in which the complaint was resolved, including any mitigation measures implemented.

2 Complaint records must be retained for a period of at least 3 years.

G8 Annual Environmental Review

1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:

- **1.1** a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;
- **1.2** subject to the *Personal Information Protection Act 2004*, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm or environmental nuisance caused by the activity and a description of any actions taken as a result of those complaints;
- **1.3** details of environment-related procedural or process changes that have been implemented during the reporting period;
- **1.4** a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;
- **1.5** details of all non-trivial environmental incidents and/or incidents of non compliance with these conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;

1.6 a summary of the monitoring data and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;

1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in any relevant EIS or EMP, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;

1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;

1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments; and

1.10 a summary of any community consultation and communication undertaken during the reporting period.

G9 Notification of completion of stage 2

The Director must be notified in writing within 14 days of the completion of stage 2.

G10 Amendment of required plans and reports

1 The plans and reports required by these conditions must be amended to address any matter required by the Director, as advised by notice in writing.

2 Amended plans and reports must be resubmitted within the timeframe that the Director specifies.

Decommissioning And Rehabilitation

DC1 Progressive Closure Plan

1 Unless otherwise specified in writing by the Director, a Progressive Closure Plan for the ASF must be submitted for approval to the Director within two (2) months of the date on which these conditions take effect or by a date otherwise specified in writing by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.

2 Unless otherwise specified in writing by the Director, the Progressive Closure Plan must describe the progressive capping, rehabilitation methodology and design criteria for the ASF, and include, but not necessarily be limited to, the following:

2.1 description of the cover system, incorporating a needle-punctured, woven Geosynthic Clay Liner with geotextile protection layer (ELcoseal X1000 or similar);

2.2 description of the water shedding and water management measures;

2.3 description of monitoring and quality assurance to ensure design requirements are met; and

2.4 a reporting regime, including final reporting of the results of the progressive capping and rehabilitation trial.

3 Once approved, the person responsible must act in accordance with the approved Progressive Closure Plan.

4 The person responsible may apply to the Director to vary or substitute the Progressive Closure Plan. Any variation or substitution of the Progressive Closure Plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

DC2 Final Closure Plan

1 Unless otherwise specified in writing by the Director, a Final Closure Plan must be submitted for approval to the Director within 1 month of completion of stage 2 or by a date otherwise specified in writing by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.

2 Unless otherwise specified in writing by the Director, the Final Closure Plan must describe the objectives and requirements for the final closure and rehabilitation of the ASF, and include, but not necessarily be limited to, the following:

- **2.1** final closure landform concept design
- **2.2** post closure monitoring, including a consideration of the need to install sensors to measure oxygen levels within the ASF post-closure.
- **2.3** technical specifications for closure construction, including a description of final closure cover system incorporating a needle-punctured, woven Geosynthetic Clay Liner with geotextile protection layer (ELcoseal X1000 or similar);
- **2.4** post closure water management infrastructure and design elements; and
- **2.5** closure timeframes.

3 Once approved the person responsible must act in accordance with the approved Final Closure Plan.

4 The person responsible may apply to the Director to vary or substitute the Final Closure Plan. Any variation or substitution of the Final Closure Plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

DC3 Temporary suspension of activity

1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.

2 During temporary suspension of the activity the Activity Area must be managed and monitored by the person responsible for the activity to ensure that emissions from the Activity Area do not cause serious environmental harm, material environmental harm or environmental nuisance.

3 If required by the Director, a Care and Maintenance Plan for the activity must be submitted to the Director for approval, by a date specified in writing by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.

- **3.1** The plan must be prepared in accordance with any guidelines provided by the Director.
- **3.2** Once approved the person responsible must act in accordance with the approved Care and Maintenance Plan.

3.3 The person responsible may apply to the Director to vary or substitute the Care and Maintenance Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

4 Unless otherwise approved in writing by the Director, if the activity on the Activity Area has substantially ceased for 2 years or more, rehabilitation of the Activity Area must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

DC4 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

Effluent

EF1 ASF drainage

Unless otherwise specified in writing by the Director, all drainage and runoff from the ASF must be directed to the ASF Discharge Point as depicted in Attachment 1.

EF2 Stormwater

1 Polluted stormwater that will be discharged from the Activity Area must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.

2 Notwithstanding the above, all stormwater that is discharged from the Activity Area must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside the Activity Area.

3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained within the Activity Area. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

EF3 Perimeter drains or bunds

Perimeter cut-off drains, or bunds, must be constructed at strategic locations within the Activity Area to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All reasonable measures must be implemented to ensure that sediment transported along these drains, or bunds, remains within the Activity Area. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales, detention basins and other measures designed and operated in accordance with the principles of the International Erosion Control Association (IECA) guidelines or other best practice principles.

EF4 Water balance

1 Unless otherwise specified in writing by the Director, a quantitative water balance and water balance assessment report of the ASF must be developed and submitted to the Director within fifteen (15) months of the date on which these conditions take effect or by a date otherwise specified by the Director in writing. The water balance must be designed and developed to allow for the early detection of possible ASF liner integrity issues, or changes to the hydrology within or in the vacinity of the ASF that have the potential to impact surface and or groundwater.

2 Unless otherwise specified in writing by the Director, the water balance assessment report must be prepared based on 12 months of monitoring data.

Monitoring

M1 Monitoring requirements

1 Unless otherwise specified in writing by the Director, monitoring must be undertaken in accordance with the Table of Monitoring requirements at Attachment 2, as follows:

1.1 the items listed in Column 1 must be sampled or tested at the locations listed in Column 2 for the parameters listed in Column 3 at the frequencies listed in Column 5; and

1.2 resultant monitoring data must be reported to the Director in accordance with the requirements set out in Column 6 and in the units listed in Column 4.

M2 Samples and measurements for monitoring purposes

1 Any sample or measurement required under these conditions must be taken and processed in accordance with the following:

1.1 sampling and measuring must be undertaken by a person with training, experience, and knowledge of the appropriate procedure;

1.2 the integrity of samples must be maintained prior to delivery to a testing facility;

1.3 sample analysis must be conducted by a testing facility accredited by the National Association of Testing Authorities (NATA), or a testing facility approved in writing by the Director, for the specified test;

1.4 details of methods employed in taking samples and measurements and results of sample analysis, and measurements must be retained for at least three (3) years after the date of collection; and

1.5 sampling and measurement equipment must be maintained and operated in accordance with manufacturer's specifications and records of maintenance must be retained for at least three (3) years.

Operations

OP1 Waste rock disposal

1 Unless otherwise specified in writing by the Director, no PAF material is to be brought onto the Activity Area.

2 Unless otherwise specified in writing by the Director, all NAF material brought onto the Activity Area must be disposed of within the ASF.

OP2 ASF construction and operation

Unless otherwise specified in writing by the Director, the construction and operation of the ASF is to be undertaken in accordance with the document titled Renison Mine Aggregate Storage Facility (ASF) Detailed Design Report, GHD 2024 (Appendix G of the EIS).

Schedule 3: Information

Legal Obligations

LO1 MRDA

Operations must be undertaken in accordance with a mining plan approved by the Director of Mines and a Mining Lease issued under the *Mineral Resources Development Act 1995* (MRDA).

LO2 EMPCA

The activity must be conducted in accordance with both the conditions in this document and the obligations of the *Environmental Management and Pollution Control Act 1994* (EMPCA) and subordinate regulations. The conditions of this document do not replicate legislated obligations; therefore, you should ensure you are aware of your obligations under EMPCA and subordinate regulations.

Other Information

OI1 Waste management hierarchy

1 Wastes should be managed in accordance with the following hierarchy of waste management:

1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;

1.2 waste should be re-used or recycled to the maximum extent that is practicable; and

1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

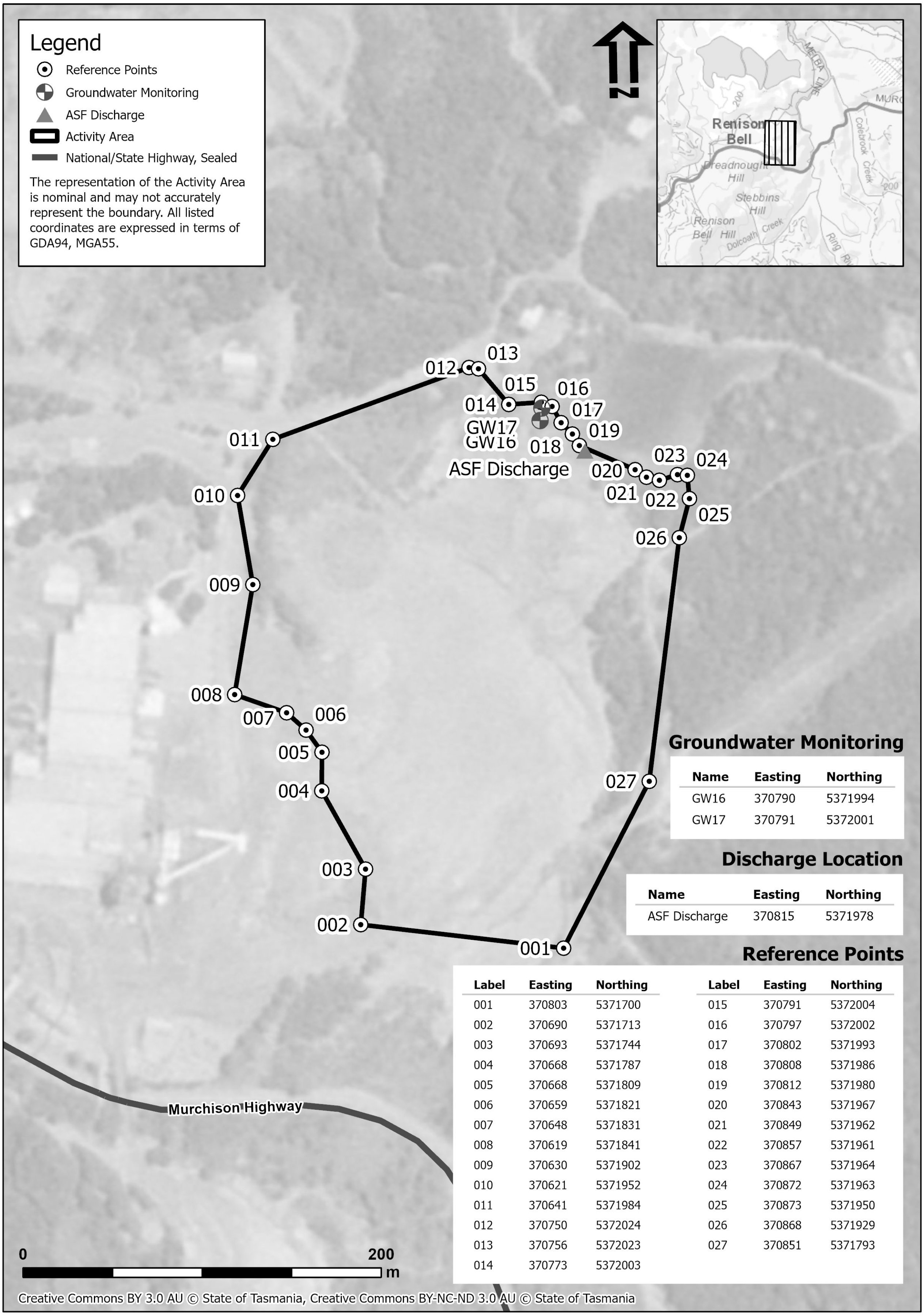
OI2 Release of Relevant Information

Under the provisions of section 23AA of EMPCA relevant information relating to monitoring of environmental impacts required under these conditions may be subject to publishing or public release by the Director.

OI3 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning **1800 005 171** (a 24-hour emergency telephone number).

Attachment 1: The Activity Area



Groundwater Monitoring

Name	Easting	Northing
GW16	370790	5371994
GW17	370791	5372001

Discharge Location

Name	Easting	Northing
ASF Discharge	370815	5371978

Reference Points

Label	Easting	Northing
001	370803	5371700
002	370690	5371713
003	370693	5371744
004	370668	5371787
005	370668	5371809
006	370659	5371821
007	370648	5371831
008	370619	5371841
009	370630	5371902
010	370621	5371952
011	370641	5371984
012	370750	5372024
013	370756	5372023
014	370773	5372003
015	370791	5372004
016	370797	5372002
017	370802	5371993
018	370808	5371986
019	370812	5371980
020	370843	5371967
021	370849	5371962
022	370857	5371961
023	370867	5371964
024	370872	5371963
025	370873	5371950
026	370868	5371929
027	370851	5371793

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Attachment 2: Monitoring requirements

Column 1 Item	Column 2 Sampling Location	Column 3 Parameter	Column 4 Unit of Measure	Column 5 Frequency	Column 6 Reporting requirements
ASF Surface water discharge	ASF Discharge Monitoring Point (Easting – 370815, Northing - 5371978)	Flow	L/min	Fortnightly	Quarterly or as otherwise required by the Director
		Temperature	°C		
		pH	pH units		
		Electrical Conductivity	µS/cm		
		Total Suspended Solids	mg/L		
		Alkalinity and Acidity	mg/L		
		Al, As, Fe, Mn, Zn, Cu, Pb, Cd, Co, Cr, Ni, SO4, Hg, Zn (total and dissolved metals)	mg/L		
ASF Groundwater monitoring bore 16	GW16 (Easting – 370790, Northing - 5371994)	pH	pH units	Quarterly	
		Temperature	°C		
		Electrical Conductivity	µS/cm		
		Total Dissolved Solids	mg/L		
		Alkalinity and Acidity	mg/L		
		Al, As, Fe, Mn, Zn, Cu, Pb, Cd, Co, Cr, Ni, SO4, Hg, Zn (total and dissolved metals)	mg/L		

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