ATTACHMENT A WASTE ROCK MANAGEMENT PLAN

GOOSE MINE

WASTE ROCK
MANAGEMENT PLAN V.4.0

DATE
June 2026

DOCUMENT HISTORY

Version	Date	Author	Comments
1	November 2015	N/A	Supporting Document for Final Environmental Impact Statement; submitted to Nunavut Impact Review Board (NIRB).
2	October 2017	N/A	Supporting Document for Type A Water Licence Application; submitted to Nunavut Water Board (NWB).
3	November 2020	N/A	Revisions to address requirements and commitments of Project Certificate, No. 007, and Water Licence, 2AM-BRP1831 and updated to reflect 2020 Type A Water Licence Amendment Application to the NWB.
4	June 2026	N/A	Updated to reflect changes in operations in WRSAs and stockpiles, removal of TSF WRSA, updated geochemical criteria for some deposits, and minor adjustments to roles and responsibilities; submitted to the NWB.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

ABA	acid-base accounting
AP	acid generation potential
ARD	acid rock drainage
B2Gold Nunavut	B2Gold Back River Corp.
ha	hectare
HCT	humidity cell test
ICRP	Interim Closure and Reclamation Plan
m	metre
m^3/day	cubic metres per day
ML	metal leaching
MLA	Marine Laydown Area
Mt	million tonnes
NAG	net acid generation
NIRB	Nunavut Impact Review Board
NP	neutralization potential
NPAG	non-potentially acid generating
NU	Nunavut
NWB	Nunavut Water Board
PAG	potentially acid generating
Project	Goose Project
S	sulphur
Sabina	Sabina Gold & Silver Corp. (previous Licensee)
SFE	shake flask extraction
t	tonne
TSF	Tailings Storage Facility
WRMP or Plan	Waste Rock Management Plan
WRSA	Waste Rock Storage Area

1. INTRODUCTION

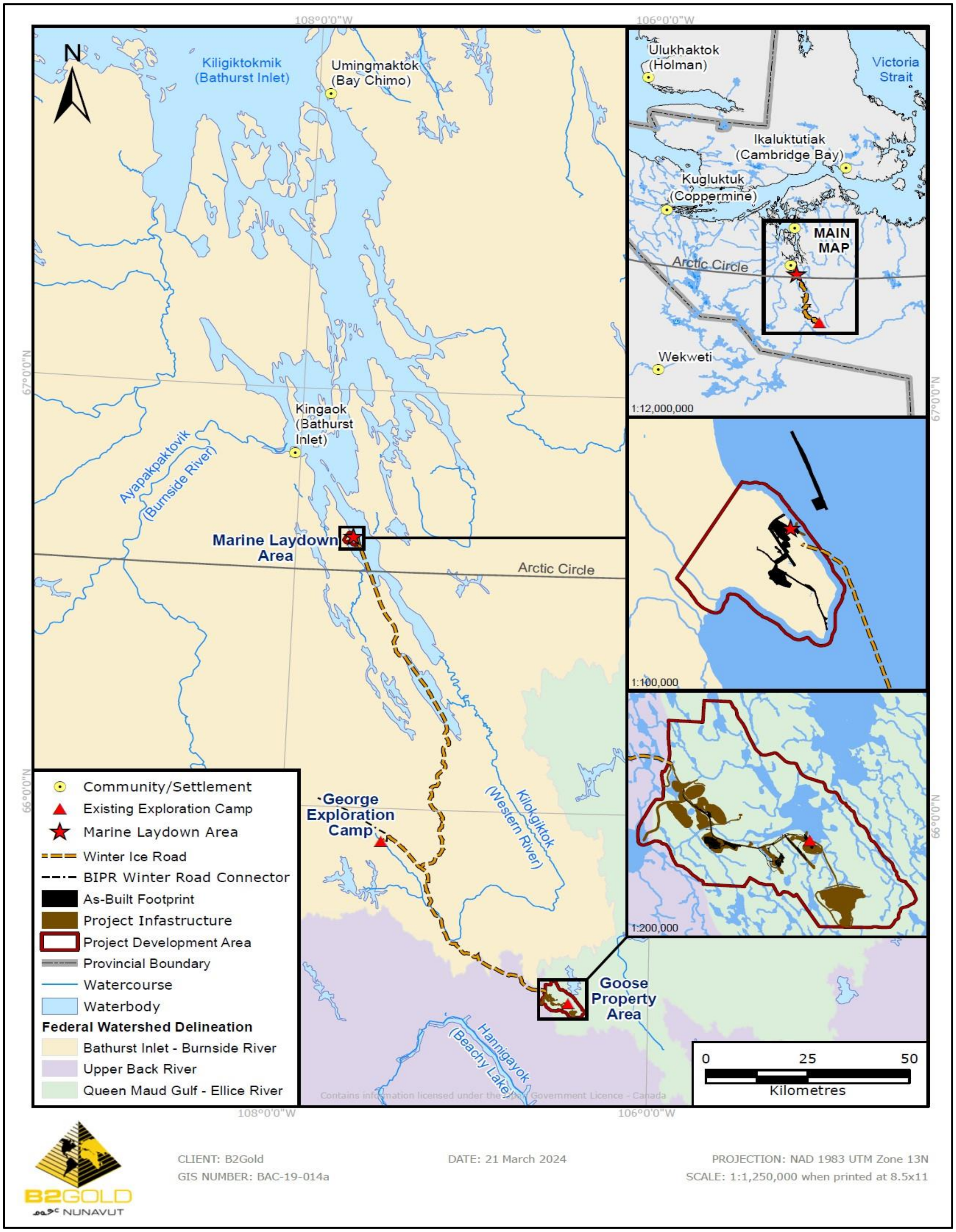
The Goose Project (the Project) is a gold mine owned by B2Gold Back River Corporation (B2Gold Nunavut) within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 kilometers (km) southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories. The Project is located predominantly in the Queen Maud Gulf Watershed (Nunavut Water Regulations, Schedule 4).

The Project is comprised of two main areas with an interconnecting winter ice road (WIR): Goose Mine (the Mine) and the Marine Laydown Area (MLA), which is situated along the western shore of southern Bathurst Inlet, as shown in Figure 1.1-1. The majority of annual resupply is completed using the MLA and an approximately 160 km long WIR interconnecting these sites seasonally when needed.

The Waste Rock Management Plan (Plan or WRMP) outlines the approach for managing waste rock and overburden produced at the Goose Project over the life of the Mine to limit the generation of acid rock drainage (ARD) and/or metal leaching (ML). No waste rock will be generated at the MLA.

The WRMP is a living document that is to be updated upon changes in related regulatory requirements, and/or significant management reviews, incident investigations, changes to facility operation or maintenance, and environmental monitoring results, best practice updates, or other Mine specific protocols during construction and through to Mine closure. Any updates will be filed with the Annual Report submitted under the Type A Water License 2AM-BRP1831 (the License) and Project Certificate No. 007 (the Project Certificate) issued by the Nunavut Impact Review Board (NIRB).

Figure 1.1-1 Goose Project Overview



2. SCOPE AND OBJECTIVES

The WRMP is one of the documents that forms part of the overall Waste Management Program for the Project. This plan describes B2Gold Nunavut's decision criteria and operating approach to managing waste rock and overburden over the life of the Mine to limit the generation of ARD and/or ML. Quarry rock and overburden identified as being waste at the Mine will also be disposed of as outlined in this Plan. The requirements of the WRMP are described in the Type A Water License (2AM-BRP1831 Amendment No. 1 Part B, Item 13p).

This plan focusses on waste rock management on site related to ongoing underground and surface mining. Key objectives of the waste rock management include:

- Identifying potentially acid-generating waste rock during mining; and
- Directing appropriate use and storage of waste rock types.

Strategies to achieve these key objectives include:

- Clarifying waste rock management responsibilities;
- Identifying waste rock physical characteristics;
- Identifying waste rock geochemical characteristics, including decision criteria for classification, segregation, storage, and use;
- Monitoring and verification of rock identification and segregation; and
- Tracking locations of potentially acid-generating waste rock.

The Plan applies to the Construction and Operations phases of the Project during which time waste rock will be produced, and has relevance to the Closure and Post-Closure phases as waste rock will be permanently stored at the Goose Mine. Progressive reclamation, as well as the closure and reclamation of Waste Rock Storage Areas (WRSAs), is addressed in detail in the Interim Closure and Reclamation Plan (ICRP).

The mine plan for the Project includes four permanent WRSAs (i.e., Umwelt WRSA, Umwelt Overflow WRSA, Llama WRSA, Echo / Goose Main WRSA), two temporary waste rock stockpiles (i.e., Temporary NPAG Stockpile, Temporary Underground PAG Stockpile), and three overburden stockpiles (i.e., Umwelt Overburden Stockpile, Llama Overburden Stockpile, and Echo Overburden Stockpile). The mine plan also omits the Tailings Storage Facility WRSA (TSF WRSA). B2Gold Nunavut highlights that, with the continued advancement in detailed engineering and market considerations, the previously approved deposits and infrastructure, including the TSF WRSA, may be reintegrated into the mine plan at a later date. B2Gold Nunavut will update the WRMP to reflect future changes in the mine plan as outlined in Part B, Item 16 of the Type A Water Licence, 2AM-BRP1831 Amendment No. 1.

2.1 RELATED DOCUMENTS

The WRMP is to be implemented in conjunction with various other management, mitigation, and monitoring plans for the Project. Plans that have relevance to the WRMP include:

- Environmental Management and Protection Plan;

- Water Management Plan;
- Aquatic Effects Management Plan;
- Road Management Plan;
- Thermal and Geotechnical Monitoring Plan;
- Air Quality Monitoring and Management Plan; and
- Interim Closure and Reclamation Plan.

The following reports and studies have also informed the development of this plan:

- WRSA Design Report (Sabina 2017b, Appendix F-3);
- Geochemical Characterization Report (Sabina 2017b, Appendix E-3);
- Site-Wide Geotechnical Characterization Report (Sabina 2017b, Appendix F-2);
- Site Wide Water Management Report (Sabina 2017b, Appendix F-1);
- Slope Stability Analysis for Updated Echo Waste Rock Storage Area (SRK 2023);
- Umwelt Waste Rock Storage Area Geotechnical Assessment (Terracon 2025);
- NPAG/PAG Segregation Criteria Update (Smith 2025); and
- Water and Load Balance Report (BGC 2026).

This plan is based on the waste rock design report submitted as part of the Water Licence submission package (Sabina 2017b, Appendix F-3), which includes the following design details:

- Waste Rock Storage Area (WRSA) Management Approach;
- WRSA Thermal Analysis;
- WRSA Stability Analysis;
- WRSA Design Criteria;
- WRSA Foundation Conditions; and
- WRSA Construction Sequencing.

3. APPLICABLE LEGISLATION AND GUIDELINES

The WRMP has been prepared to comply with existing regulations and follow the applicable guidelines provided by the federal government and the government of Nunavut.

Specific legislation, regulations, and guidelines related to waste rock management in Canada, and specifically within Nunavut, are summarized in Table 3-1.

The Project is also bound by the requirements of the Project Certificate, No. 007, the Type A Water Licence, 2AM-BRP1831, and various permits, including the land use permits issued by the Kitikmeot Inuit Association for Inuit Owned Land.

Plan development also considered the Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories issued by the MVLWB and AANDC (MVLWB/INAC/GNWT 2017).

Table 3-1 Applicable Legislation to Waste Management in Nunavut

Acts	Regulations	Guidelines
Federal		
Canadian Environmental Protection Act (CEPA; 1999)		
Nunavut Waters and Nunavut Surface Rights Tribunal Act (2002)	Nunavut Water Regulations (2013)	
Territorial Lands Act (1985)	Territorial Land Use Regulations (CRC, c.1524) Northwest Territories and Nunavut Mining Regulations (CRC, c.1516)	Implications of Global Warming and the Precautionary Principle in Northern Mine Design and Closure (BGC 2003)
Fisheries Act (R.S.C., 1985, c. F-14)	Metal and Diamond Mining Effluent Regulations (SOR/2002-222)	
Territorial – Nunavut		
Nunavut Environmental Protection Act (1988)	Spill Contingency Planning and Reporting Regulations (R-068-93)	Canada-Wide Standards for Petroleum Hydrocarbons (PHC) In Soil (CCME 2008)
Mine Health and Safety Act (SNWT (Nu) 1994, c.25)	Mine Health and Safety Regulations (R-125-95)	

4. ROLES AND RESPONSIBILITIES

The General Manager is ultimately responsible for the success of the Plan and approves all relevant policies and documents, auditing, action planning, and the verification process.

The Operations Manager, along with their direct reports (e.g., relevant Heads of Departments), is responsible for specifics of this plan, including:

- Overall management of the Plan;
- Operational aspects; and
- Internal reporting.

Mine Operations is responsible for the implementation of this Plan, including:

- Installation, monitoring, and maintenance of geotechnical instruments;
- Inspections and rock type verification of the areas being mined;
- External reporting of waste rock monitoring in accordance with Water License requirements; and
- Ensuring compliance and adaptive management.

It is expected that successful implementation of this plan will require dedicated support by the Geology, Engineering, Site Services, Mine Operations, and Environment Departments.

5. PLANNING AND IMPLEMENTATION

5.1 WASTE ROCK AND OVERBURDEN STORAGE OVERVIEW

A total of approximately 111.8 million tonnes (Mt) of waste rock and overburden will be generated over the life of the Project from open pit operations:

- Non-potentially acid generating (NPAG) waste rock = 67.7 Mt.
- Potentially acid generating (PAG) waste rock = 37.0 Mt.
- Overburden = 7.1 Mt.

A total of approximately 0.6 Mt of PAG waste rock will also be generated from underground development; this waste rock will be permanently stored in mined-out underground workings once space is available during underground development.

The majority of waste rock and overburden produced from open pits will be stored in engineered WRSAs located close to each of the open pits at the Goose Mine, with a portion of geochemically suitable waste rock used for other purposes, including general site construction activities, pads, and roads. A small volume of PAG waste rock will be used for backfilling in the underground mines.

There will be four permanent WRSAs at the Goose Mine as follows (Figure 5.1-1):

- Umwelt WRSA: Located east of the Umwelt Open Pit.
- Umwelt Overflow WRSA: Located north of the Umwelt Open Pit.
- Llama WRSA: Located north of the Llama Open Pit.
- Echo / Goose Main WRSA: Located around and on the Echo Open Pit, which will receive waste rock from Echo Open Pit development and then waste rock from Goose Main Open Pit development.

Additionally, there will be two temporary waste rock stockpiles at the Goose Mine that will be used during Operations and both stockpiles will be located north of the Umwelt Overflow WRSA (Figure 5.1-1):

- Temporary NPAG Stockpile.
- Temporary Underground PAG Stockpile.

There will be three Overburden Stockpiles at the Goose Mine as follows (Figure 5.1-1):

- Umwelt Overburden Stockpile: Located east of Umwelt Open Pit and south of Umwelt WRSA.
- Llama Overburden Stockpile: Located east of Llama Open Pit and north of Umwelt WRSA.
- Echo Overburden Stockpile: Located north of Echo Open Pit and north of Echo / Goose Main WRSA (completed).

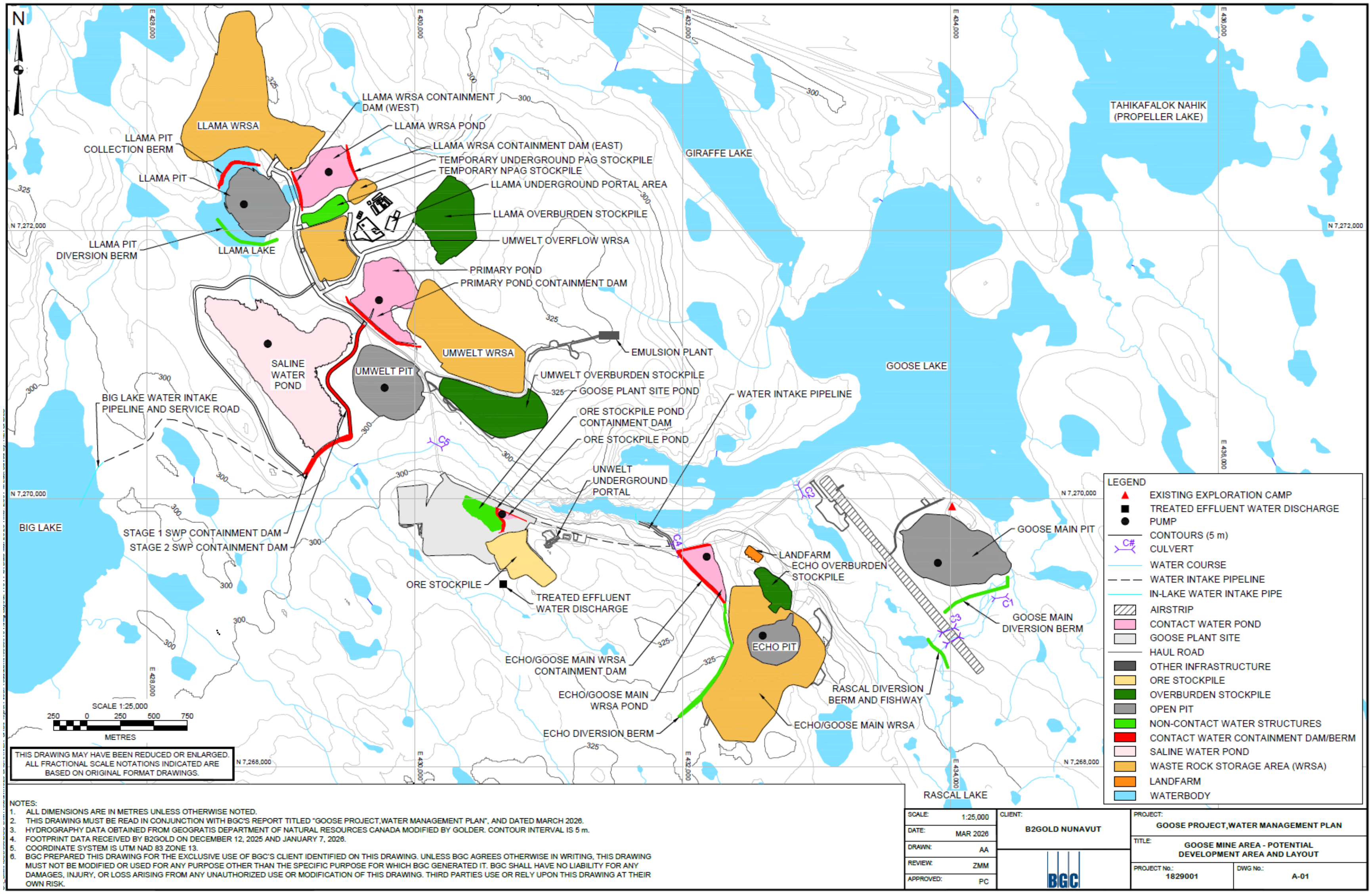
Overburden from Goose Main Open Pit, which will begin mining in Year 5 of Operations, will be stored in a stockpile location at the Project site that will be confirmed in a future version of this plan.

Overburden will be stripped during open pit development, and the top organic layer may be stockpiled for use during reclamation. Depending on the physical and geochemical characteristics of the overburden, it may be incorporated within the WRSAs, used for specific construction purposes, or used as WRSA cover material.

The PAG waste rock within the WRSAs will be progressively reclaimed and encapsulated during Operations with a minimum 5-m thick cover of NPAG waste rock placed on the top and sides of each WRSA. Additional information on WRSA closure is provided in the ICRP. Over time, it is expected that permafrost will aggrade into the PAG waste rock, which will reduce oxidation rates and reduce contact with seepage and runoff (Sabina 2017b, Appendix E-3). Results from the water quality assessment indicate that at Closure, the water in contact with the NPAG cover material will meet water quality criteria acceptable for direct discharge to the environment. Additional details on water management and the water quality assessment are provided the Water Management Plan, Water and Load Balance Report (BGC 2026), and ICRP.

The following sections provide details on the physical and geochemical characteristics of the waste rock; the waste rock production schedule; WRSA design layouts, stability analysis, and thermal analyses completed in support of the design; and waste rock and overburden management alternatives considered.

Figure 5.1-1 Goose Project – Goose Mine at the End of Operations



Source: Water Management Plan Version 6, Appendix A

5.2 WASTE ROCK PHYSICAL CHARACTERISTICS

Physical characterization of run-of-mine waste rock was not carried out for the purpose of completing a stability assessment due to the practical limitations of suitable test methods for this type of material. Instead, and per standard practice, literature values supported by engineering judgement were used. Table 5.2-1 summarizes the material properties adopted for run-of-mine waste rock for the Project (Sabina 2017b, Appendix F-2; SRK 2023; Terracon 2025).

Table 5.2-1 Typical Run-of-Mine Waste Rock Physical Properties

Parameter		Value
Moist Unit Weight (kN/m^3)		20
Degree of Saturation (%)		30
Porosity, n		0.3
Volumetric Water Content		0.09
Frozen	Apparent Cohesion, c' (kPa)	5
	Friction Angle, ϕ (°)	38 to 40
Unfrozen	Apparent Cohesion, c' (kPa)	0
	Friction Angle, ϕ (°)	38 to 40

kN/m^3 = kilonewtons per cubic metre; kPa = kilopascal; % = percent.

5.3 WASTE ROCK AND OVERBURDEN GEOCHEMICAL CHARACTERISTICS

Sulphide minerals that may be contained in mining waste rock oxidize when exposed to the atmosphere. If sulphide minerals are present in sufficient quantities, sulphide mineral oxidation can release acidity, sulphate, and dissolved metals to water draining from waste materials (e.g., ARD, ML).

Prior to mine development, a comprehensive baseline geochemistry program was conducted between 2007 and 2015 to determine the ML/ARD potential of waste rock and overburden from the Project (Sabina 2017b). Additional geochemical characterization studies were completed in 2025 to refine the ML/ARD potential of waste rock based on updated kinetic testing. Additionally, on-site monitoring and management have been ongoing since Construction and through Operations.

The Echo, Umwelt, Llama, and Goose Main deposits are located within a sequence of turbiditic meta-sedimentary rocks. This sequence is cut by felsic dykes (quartz feldspar porphyry) and gabbroic dykes. From oldest to youngest, the stratigraphic sequence is composed of the following units: basal sediments, deep iron formation, lower sediments, lower iron formation, middle mudstone, upper iron formation, middle sediments, upper phyllite, and upper sediments. The deposits are overlain by glacial till. Gold mineralization tends to be hosted in the basal sediments, lower iron formation, and upper iron formation.

Geochemical characterization indicates that overburden has a negligible potential for ML/ARD and is classified as NPAG. For waste rock, an appreciable proportion of the waste rock is classified as PAG according to the geochemical analysis results. The PAG waste rock is found in all of the stratigraphic units except for the gabbro dykes, but is more common in the lower iron formation units, and to a lesser extent in the upper iron formation units.

Seep testing results indicated, under neutral pH conditions, metal concentrations tend to be much lower than if conditions were acidic, but there is still some potential for leaching of aluminum and arsenic from the NPAG waste rock. The kinetic tests indicate that metal leaching, notably aluminum, cadmium, copper, iron, nickel, and zinc, is greatly enhanced when acidic conditions are allowed to develop. Based on the kinetic test results and seep surveys, specific measures will be necessary to control ML/ARD potential in the PAG waste rock. Waste rock that is characterized as PAG, or rock that has an uncertain potential for ARD, will be managed as PAG, which will also address the potential for metal leaching related to acidic conditions.

5.3.1 GEOCHEMICAL CRITERIA

Site-specific classification criteria were developed based on the results of geochemical testing of overburden and waste rock for the purpose of material management during Construction and Operations.

The data review completed in 2025 used static test results together with the extended humidity cell test (HCT) results for the Umwelt, Goose Main, and George deposits (Smith 2025). This re-evaluation resulted in site-specific classification criteria for these deposits. The classification criteria presented in Table 5.3-1 are supported by the results of acid-base accounting (ABA), net acid generation (NAG) testing, and long-term kinetic testing. Waste rock is classified based on the ratio of neutralization potential (NP) to acid generation potential (AP), which is calculated using total sulphur (S) content.

Table 5.3-1 Site-Specific Geochemical Classification Criteria for the Umwelt and Goose Main Deposits

Acid Generation Potential	Criteria
Non-potentially acid generating	NP/AP >= 2 or total S <= 0.08%
Potentially acid generating	NP/AP < 2 and total S > 0.08%

NP = neutralization potential; AP = acid generation potential; S = sulphur.

Neutralization potential is determined by the Sobek method and total S is determined using an induction furnace (e.g., Eltra, Leco). The total S component of the criteria does not compromise PAG designations; the static and extended kinetic data illustrated that all samples with total S less than 0.08 wt% did not generate acidic leachate in the HCT testing duration. Including a total S component to the segregation criteria improves characterization efficiency and reliability.

The classification criteria in Table 5.3-2 applies to the Echo and Llama deposits consistent with the baseline geochemical characterisation studies. Refinement of the classification criteria will be considered in the future based on the ongoing collection of geochemical testing data and site-specific monitoring data.

Table 5.3-2 Site-Specific Geochemical Classification Criteria for the Echo and Llama Deposits

Acid Generation Potential	Criteria
Non-potentially acid generating	NP/AP >= 3 or total S <= 0.15%
Potentially acid generating	NP/AP < 3

NP = neutralization potential; AP = acid generation potential; S = sulphur.

5.3.2 WASTE ROCK CLASSIFICATION

The criteria for geochemical classification of waste rock materials presented in Table 5.3-1 and Table 5.3-2 were used to determine the relative number of PAG samples in the geochemical dataset by mining area. The quantities of PAG and NPAG waste rock were determined based on the proportion of PAG and NPAG samples present in each of the modelled stratigraphic and intrusive units, and the quantities of waste rock present in each of these units. Estimates of PAG/NPAG in-situ waste rock quantities that will be mined are presented in Table 5.3-3, and further details on each WRSA are provided in Section 5.4.1.

Quantities of Echo waste rock, Echo overburden, and Umwelt overburden removed to date are provided under a separate cover as part of the Annual Report for the Project (2AM-BRP1831 Amendment No. 1 Part B, Item 2).

Table 5.3-3 Quantities of Waste Rock by Acid Rock Drainage Classification – Goose Mine Deposits

Open Pit	In-Situ Quantity (Mt)			Distribution (%[1])	
	PAG	NPAG	OVB	PAG	NPAG
Umwelt	12.3	13.7	0.1	47%	53%
Llama	14.1	15.1	1.3	48%	52%
Goose Main	6.5	38.6	3.9	14%	86%

1. Distribution does not include overburden (OVB), which is NPAG.

The distribution of PAG and NPAG waste rock is not closely linked to stratigraphy nor to lithology. Therefore, identification and subsequent segregation of these materials will require a dedicated blast hole monitoring program, which is outlined in Section 7.1.

Preliminary calculations indicate that acidic conditions are not expected to develop in the majority (i.e., greater than 95%) of the waste rock during an approximately 10-year freeze-back period. Although acidic conditions could occur more rapidly in some of the waste rock, average pH conditions in seepage and runoff would be expected to remain buffered until WRSA freeze-back conditions develop. Nonetheless, due to the potential for somewhat elevated metal and/or nutrient (ammonia and nitrate) concentrations during the freeze-back period, seepage and runoff water will be managed throughout Operations, as described in Section 6.2.

5.4 WASTE ROCK STORAGE AREA DESIGN

The locations of the WRSAs were chosen based on consideration of the environmental, social, economic, and technical aspects of waste rock management, which included the following:

- Minimize the overall footprints of the WRSAs while maintaining the short-term and long-term stability of the facilities;
- Avoid or minimize effects to fish bearing lakes (details regarding fish-bearing waters is provided in the Section 7.1.8 of the Main Application Document in the Type A Water Licence Application (Sabina 2017b);

- Minimize the haul distance from the open pits to the WRSAs;
- Minimize the number of water catchment areas potentially affected by drainage from the WRSAs;
- When feasible, divert the upstream non-contact water away from the WRSAs;
- Facilitate the collection and management of contact water from the WRSAs during Operations to avoid potential effects on the surrounding environment;
- Maintain a minimum distance of 100 m between the toe of the WRSAs and adjacent lakes that will not be disturbed by mine activities; and
- Build the WRSAs to maximize progressive reclamation and minimize dedicated closure activities during the Closure Phase.

Considering the WRSA management strategy and the results of the thermal and stability analyses, the following WRSA design criteria will be adopted for the Project:

- The WRSAs will be constructed in benches using a bottom-up technique.
- The lift thickness is not critical for freeze-back or stability and can therefore be determined based on constructability requirements of the mine haul truck fleet. Based on combination of 64 t and 90 t haul trucks, lift heights of around 5 m to 10 m can reasonably be expected.
- The final overall slope (measured bench crest to bench crest) of the WRSAs will be approximately 2.5H:1V. Individual bench slopes can be at angle of repose with bench setbacks designed to allow for an overall slope at the desired grade. The design slope geometry is not a requirement due to stability, but rather a reasonable long-term slope considering overall landscape design.
- The designs of the WRSAs include complete encapsulation of PAG material with a minimum 5 m of NPAG material. Placement of the NPAG cover may be concurrent with PAG waste rock placement as the WRSAs are developed. Some amount of NPAG stockpiling and handling is planned due to the progressive reclamation approach, and WRSA closure is intended to be appreciably completed prior to the end of the Operations Phase.
- In general, overburden is not expected to be widely useable for either construction or structural reclamation material (e.g., frozen chunks in winter and water-saturated silt in summer). However, some sand and gravel overburden are expected to be present at the Goose Mine and would be geotechnically suitable as a portion of the 5 m NPAG cover and for construction of key infrastructure; this assumption will be reviewed and confirmed during Operations. The top organic layer from overburden stripping during Project development may be stockpiled for use during reclamation. Overburden that is not deemed geotechnically suitable as cover material can be placed in interior cells of the WRSAs with a 20 m minimum set-back from the outer edge of the WRSA.

5.4.1 WASTE ROCK STORAGE AREA AND OVERBURDEN STOCKPILE DESCRIPTIONS

5.4.1.1 UMWELT WASTE ROCK STORAGE AREA

The Umwelt WRSA will permanently occupy an area of approximately 38 ha, have a height of approximately 80 m, and will be located east of the Umwelt Open Pit. The Umwelt WRSA will be used to store the majority of waste rock and overburden from the Umwelt Open Pit. Some geochemically suitable waste rock from Umwelt Open Pit may also be used for the construction of site roads and pads.

One small stream and two ponds are located within the footprint, or immediately upstream, of the Umwelt WRSA and will be covered by the facility. The stream and ponds are non-fish-bearing, less than 2 m deep, and freeze to the bottom annually during winter. To manage slope stability, overburden can be placed within areas surrounded, and ultimately covered, by waste rock. The Umwelt WRSA is expected to reach its design capacity in Year 3.

5.4.1.2 UMWELT OVERFLOW WASTE ROCK STORAGE AREA

A secondary, smaller WRSA, designated as the Umwelt Overflow WRSA, will be utilized once the Umwelt WRSA reaches its design capacity. Umwelt Overflow WRSA will permanently occupy an area of approximately 13 ha, have a height of approximately 30 m, and will be located north of the Umwelt Open Pit. There are no ponds or streams located within the footprint of the Umwelt Overflow WRSA. The Umwelt WRSA is expected to reach its design capacity in Year 4.

5.4.1.3 LLAMA WASTE ROCK STORAGE AREA

The Llama WRSA will permanently occupy an area of approximately 59 ha, have a height of approximately 110 m, and will be located north of the Llama Open Pit. The Llama WRSA will store waste rock and overburden from the Llama Open Pit. A portion of the WRSA footprint is within Llama Lake, which will be dewatered before the mining of Llama Open Pit. There are no other ponds or streams located within the footprint of the facility. To manage slope stability, overburden can be placed within areas that will be surrounded by waste rock. The Llama WRSA is expected to reach its design capacity in Year 6.

5.4.1.4 ECHO / GOOSE MAIN WASTE ROCK STORAGE AREA

The Echo / Goose Main WRSA will be developed in two stages: Echo WRSA and Goose Main WRSA. The Echo WRSA, which will be located directly adjacent to Echo Open Pit, will be developed with waste rock from Echo Open Pit during Construction and reach design capacity in Year 1. From Year 1 to Year 5, Echo Open Pit will be used for tailings deposition (named Echo Tailings Facility [TF]). In Year 5, the Goose Main WRSA will expand the footprint of the Echo WRSA, including covering the Echo TF once tailings deposition has ceased. The Goose Main WRSA is expected to reach its design capacity in Year 9. The Echo / Goose Main WRSA will permanently occupy an area of approximately 63 ha, have a height of approximately 100 m, and there are no ponds or streams located within the footprint of the facility. To manage slope stability, overburden can be placed within areas surrounded, and ultimately covered, by waste rock.

5.4.1.5 TEMPORARY WASTE ROCK STOCKPILES

The Temporary NPAG Stockpile and Temporary Underground PAG Stockpile will temporarily store NPAG and PAG materials, respectively during the Operations Phase. These stockpiles will both be located north of the Umwelt Overflow WRSA and will be used to temporarily manage waste rock until this material can either be placed in a permanent WRSA or placed underground. The Temporary NPAG Stockpile and Temporary Underground PAG Stockpile are expected to reach design capacities in Year 4 and Year 8, respectively.

5.4.1.6 UMWELT OVERBURDEN STOCKPILE

The Umwelt Overburden Stockpile will be completed in Year 1 as the last of the overburden material from Umwelt Open Pit is mined. Umwelt Overburden Stockpile is located east of Umwelt Open Pit and south of Umwelt WRSA and will occupy approximately 20 ha and have a height of approximately 20 m.

5.4.1.7 LLAMA OVERBURDEN STOCKPILE

The Llama Overburden Stockpile is located north of the Umwelt WRSA and will be fully developed by Year 4. It will occupy an area of approximately 20 ha and have a height of approximately 15 m.

5.4.2 WASTE ROCK STORAGE AREA FOUNDATION CONDITIONS AND CONSTRUCTION SEQUENCING

Geotechnical field investigations and construction activities in the area of the WRSAs have confirmed the WRSA locations are underlain by approximately 0 m to 5 m of overburden (Sabina 2017b, Appendix F-2; Terracon 2025).

The permafrost soils will provide suitable foundation conditions for WRSAs provided the foundations remain frozen. To maintain frozen conditions in the foundations, the first lift of all WRSAs will be constructed during the winter season, where possible. In the event the first lift of waste rock is constructed during the summer months, the WRSA may be subject to differential settlement during the first summer due to consolidation settlement of the active layer; such settlement would be limited due to the relatively thin active layer of overburden under the WRSAs.

In all cases, whether WRSA construction is started in summer or winter, once freeze-back has been achieved in the foundation and the active layer is demonstrated to remain within the waste rock stockpile, there will likely be no restrictions on the maximum lift thickness used for WRSA construction. The overall maximum height (i.e., total vertical thickness) of the WRSA will be limited to 80 m unless appropriate analysis is completed to confirm otherwise. It is anticipated that the Goose Main and Llama WRSA heights will be greater than 80 m; an appropriate stability analysis for these WRSAs will be completed prior to WRSA heights exceeding 80 m.

The WRSAs may experience creep deformation as a result of ice-rich foundation soils. High ice-content soils generally carry more load on the ice phase and the ice creeps under load, resulting in creep behaviour of the soil. Creep rates in frozen soils are dependent upon the loading rate and temperature, with higher creep rates observed at higher temperatures and under greater shear loading conditions. Maximum creep rates occur at near-thawed conditions. Due to the relatively thin layer of overburden soils, creep deformation is not expected to be a significant concern. A discussion of WRSA creep is provided in the WRSA Design Report (Sabina 2017b, Appendix F-3).

In areas where the WRSA foundation is on exposed bedrock, no significant construction issues are expected; therefore, placement on exposed bedrock is preferred and can proceed during any season provided adequate clearing of snow and ice has been completed.

WRSA will be constructed using a bottom-up technique. Haul trucks will end dump waste rock in horizontal layers, and a dozer will be used to level out this material prior to starting a new lift. No dedicated waste rock compaction is required as haul trucks will continuously travel over previously placed areas providing wheel traffic compaction.

Over time, permafrost is expected to aggrade into the WRSAs, and an active layer will remain in the NPAG cover.

As far as practicable, WRSA construction will be completed to minimize NPAG waste rock re-handling for Closure. However, based on material sequencing, there may be periods when some NPAG waste rock will be separately stockpiled and re-handled so that there is sufficient NPAG waste rock for the minimum 5 m cover.

Water management around the WRSAs will be completed in accordance with the Water Management Plan.

5.5 WASTE ROCK STORAGE AREA STABILITY ANALYSIS

Slope stability analyses for the WRSAs were carried out during the feasibility study. Using the material parameters presented in Section 5.2 and the geometries described in Section 5.4, the results of the stability analysis indicate that the calculated minimum factors of safety for the WRSAs meet or exceed the acceptable factors of safety. Information on stability studies for the WRSAs is described in the Appendix F-3 of the Type A Water Licence Application (Sabina 2017b) and in more recent stability assessments for the Project (SRK 2023; Terracon 2025).

5.6 WASTE ROCK STORAGE AREA THERMAL MODELLING

Thermal analyses were conducted to estimate the thermal regime of the WRSAs and associated foundations during Operations and after Closure. Multiple sensitivity scenarios based on a range of conditions were considered during thermal modelling, including material saturation, thermal properties, variable boundary conditions, material composition, climate change, as well as convection and conduction. The thermal modelling completed to date is considered reasonable and appropriately conservative. For additional information, refer to FEIS Addendum Volume 4, Appendix V4-3D and Appendix V4-3E (Sabina 2017a).

Freeze-back of the WRSAs is considered to be validated if the temperature throughout the PAG waste rock remains below 0°C. Under these conditions, freeze-back at the Goose Mine is estimated to be less than 5 years with no allowance for convective cooling in the winter, and less than 2.5 years with allowance for convective cooling.

All WRSA thermal modelling was also developed to account for projected influences of climate change. The modelling results indicate that the active layer thickness for the assumed base case is expected to be less than 5 m (i.e., it will remain in the NPAG waste rock cover) assuming convection facilitates cooling.

Further Information on thermal studies relating to the WRSAs is provided in the WRSA Design Report (Sabina 2017b, Appendix F-3). The results of this analysis will be confirmed and refined during Operations and Closure of the Project. As additional site-specific data is collected, this information will be used to further enhance or modify the closure of WRSAs, associated water treatment, and closure monitoring.

5.7 WASTE ROCK AND OVERBURDEN MANAGEMENT ALTERNATIVES

Applicable guidelines were used for the assessment of alternatives for waste rock disposal to complete a multiple accounts analysis for waste rock storage locations and disposal technologies. The analysis concluded that the most appropriate waste rock management alternative is the WRSA design as shown on the Figure 5.1-1, and encapsulation of PAG waste rock with the placement of a NPAG waste rock thermal cover on the sides and top of the PAG material was the most appropriate disposal technique. A summary of the alternatives assessment is provided below. Additional information on alternatives is provided in the WRSA Design Report (Sabina 2017b, Appendix F-3) and the Multiple Accounts Analysis for the Project (Sabina 2016).

5.7.1 WASTE ROCK STORAGE ALTERNATIVES ANALYSIS DESIGN BASIS

The WRSA locations were selected based on capacity, proximity to mine workings, elevation changes, footprints, suitability of ground conditions, associated costs, as well as the ease with which runoff from the WRSAs can be collected within collection ponds. Consideration was also given to identify important terrestrial habitat, special landscape features, rare vegetation, and to archeology.

Geochemical characterization of samples from the Project resulted in grouping waste rock into two reportable categories based on ARD generating potential: PAG and NPAG.

Preliminary calculations indicate acidic conditions are not expected to develop in greater than 95% of the waste rock during the freeze-back period. Although acidic conditions could occur more rapidly in some of the waste rock, average pH conditions in seepage and runoff would be expected to remain non-acidic until complete freeze-back of the WRSAs.

The geochemical study (Sabina 2017b, Appendix E-3) indicated that blending of the PAG and NPAG waste rock to take advantage of the buffering offered by the NPAG to neutralize the PAG would not be viable.

5.7.2 WASTE ROCK STORAGE ALTERNATIVES ANALYSIS ASSESSMENT RESULTS

The assessment of alternative methods for managing PAG/ML mine waste material considered the following disposal technologies:

- Freeze-back with a thermal NPAG waste rock cover;
- Low permeability covers;
- Co-mixing of mine waste material;
- Co-disposal of mine waste rock and tailings; and
- Subaqueous disposal in lakes and/or open pits.

Subaqueous disposal can include disposal in an engineered structure, natural waterbody, mined-out open pit, or mined-out underground development. Construction of a permanent, water retaining, engineered structure was ruled out since it would not be considered best practice. Deposition in a natural waterbody was also ruled out as the lakes around the Goose Mine are either shallow, thus offering limited capacity, or are larger lakes, thus providing good aquatic habitat.

The underground mining methods employed on the Project require a portion of material from open pit development as mine backfill. As such, this backfill material will be composed, as much as practicable, of PAG waste rock, either sourced locally from underground development or backhauled from surface development. Consideration was given to storing PAG waste rock in mined-out open pits; however, the current mine scheduling, and the preference to use the pits for tailings and water management, made this a less desirable option. If future mine scheduling allows for in-pit disposal of waste rock, this option will be reconsidered.

For the remaining PAG waste rock on the surface, consideration was given to low permeability covers. Generally, the use of low permeability covers would be the most cost effective; however, no suitable natural materials are generated by Project activities and as such, this alternative would not be a cost-effective option. Therefore, the only viable low infiltration cover would be geosynthetic liners. The initial capital costs and long-term replacement costs of these liners make this alternative an unsustainable option.

Based on technical, environmental, socio-economic, and economic considerations, encapsulation of PAG waste rock with the placement of a NPAG waste rock thermal cover was found to be the preferred methodology. During progressive reclamation and in Closure, the PAG waste rock will be surrounded and capped by NPAG material to protect the underlying waste rock from seasonal thawing and promote the aggregation of permafrost into the PAG waste rock.

6. ENVIRONMENTAL PROTECTION MEASURES

6.1 WASTE ROCK MANAGEMENT

The location of waste rock disposal will be dependant on waste rock type (i.e., NPAG vs. PAG) as determined by the waste rock monitoring program outlined in Section 7. Waste rock will be monitored as it is produced through a blast hole sampling program. Based on this monitoring, all waste rock will be identified as either PAG or NPAG. All PAG waste rock will be placed in the WRSAs in a manner that will allow the encapsulation of this material by NPAG waste rock on closure such that PAG waste rock will become fully frozen and inactive following closure of the WRSA. Overburden at the Goose Mine is considered NPAG material, and as such may be segregated for use as a cover material. Overburden which is not structurally suitable (e.g., high silt content) and water treatment sludges will be co-disposed with waste rock, with ultimate placement at least 20 m from the outer edge of the WRSAs to maintain overall pile stability. This management approach will facilitate a long-term chemically and physically stable closure state within the WRSAs.

If a single sample or a cluster of samples are classified as PAG or to be ML, the area from where the sample(s) were collected will all be considered PAG and this material will not be used for WRSA cover material. After blasting, dig limits will be flagged and documented based on monitoring results to confirm waste rock is clearly identified and segregated as necessary for placement as part of the 5-m NPAG waste rock cover in WRSAs. Waste rock placement quantities (in tonnes) and locations will be tracked and tied to sample results; this data will be used to verify closure predictions and conditions, and key findings will be included in the annual report filed with the NIRB and NWB. Only waste rock confirmed to be NPAG and non-ML will be used as construction material, as per the Water Licence (2AM-BRP1831 Amendment No. 1 Part D, Item 5).

6.2 WATER MANAGEMENT ASSOCIATED WITH WRSAS

The water management objectives for the Project are to minimize potential effects to the quantity and quality of surface water at the site. Water management and monitoring is detailed in the Water Management Plan, and an overview of seepage and runoff management activities related to WRSAs is provided below.

Prior to closure of the WRSAs, seepage and runoff are expected to contain elevated levels of some parameters; as such, all WRSA seepage and runoff will be collected in perimeter berms and directed to collection ponds. These berms will be strategically located to take advantage of topography to limit water ponding. During Operations, runoff from the WRSAs at the Goose Mine will be pumped to the active Tailings Facility or a collection pond and treated as necessary prior to discharge; any discharge locations will be located to limit the potential for erosion. The collection ponds constructed for the WRSAs will apply appropriate design criteria in terms of managing extreme flows. Seepage and runoff volumes as well as extreme events were accounted for in the Water and Load Balance Report (BGC 2026); details on water treatment, WRSA catchments, and runoff criteria is provided in the Water Management Plan.

During Closure, collection ponds will continue to operate and collect runoff from the WRSAs until the collected runoff meets discharge criteria and applicable receiving water quality criteria. During the Active

Closure Stage and while the collection ponds remain operational, collected runoff at the Mine will be directed to a Tailings Facility or reservoir. Once runoff is demonstrated to meet applicable limits, the ponds will be decommissioned in accordance with the ICRP.

6.3 DUST MANAGEMENT

The possible sources of dust related to waste rock and overburden during Construction, Operations, and Closure include:

- Site preparation prior to placement of waste rock or overburden (i.e., stripping, excavation and/or placement of foundation material);
- Wind erosion of fine particles from the WRSAs;
- Vehicle traffic dislodging fine particles from the surface of the WRSAs and from the associated service and haul roads to the WRSAs;
- Waste rock and overburden handling and transfer (i.e., loading, hauling, unloading, placement, and compaction); and
- Placement of closure and capping layers.

Dust suppression measures typical of current practices at other operating mines (i.e., Meliadine and Meadowbank mines), and consistent with best management practices, will be used through WRSA design, operation, and closure activities to control dust.

Minimal site preparation is required for the WRSA construction, and therefore, dust from these areas is not expected to be problematic.

Dust is expected to be a minor issue during the operation of the WRSAs as the waste rock produced at the Project site will generally comprise large pieces of rock that will not be susceptible to wind erosion. The overburden contains material that is fine-grained and thus more susceptible to wind erosion. The plan is to store overburden material separate from the WRSA surfaces. Therefore, dust from the overburden material is not expected to be an issue. However, should dusting become an issue, dust control measures such as spraying water and/or other approved chemical dust suppressants will be used as necessary.

Dust generated from vehicles travelling on the surface of the WRSAs and associated roads connecting to the WRSAs will be controlled principally by spraying water on the traffic areas, which will be carried out regularly by mine services during dry periods in the summer. The water used for industrial uses at the Project site, including dust suppression during the summer, is estimated to be approximately 300 m^3/day; this volume is accounted for in the Water Management Plan and will remain within licenced limits. Watering the haul and service roads is only possible when temperatures are above freezing. When the temperature is below freezing, dust suppression using water or an approved chemical may pose a safety hazard for travel; if warranted, reduced speed limits will be considered as the principal way of controlling dust during these periods.

Other control measures considered in Project design and operation related to dust generation by vehicle travel include:

- Roads will be designed as narrow and short as possible while maintaining safe construction and operational practices;

- Coarse size rock will be used as much as possible for road construction;
- Roads will be regularly graded to mix the fines found on the road surface with coarser material located deeper in the roadbed; and
- Roads and travel areas will be topped with additional aggregate, as required.

Dust from material handling is not expected to be problematic on-site. Front-loading and end-dumping will be employed to dump waste rock and overburden in lifts, and materials will be spread with a dozer. Long end dumps, which can generate significant amounts of dust, is not currently intended at site. Where possible, multiple handlings of materials that have the potential to generate dust will be minimized as much as practicable. However, should dust related to material handling occur on-site, specific control measures will be evaluated and applied, as required.

7. MONITORING AND REPORTING PROGRAM

This section describes the routine inspections, monitoring, and waste rock confirmatory testing that will take place under this plan during waste rock generation and disposal.

Additional monitoring related to waste rock management is undertaken and reported under separate Project monitoring and management plans. To avoid management plan overlap and the resulting potential for conflicting information, these monitoring details are not repeated in the WRMP. Instead, relevant monitoring has been identified below and the appropriate management plan(s) referenced.

The additional waste rock-related monitoring and reporting that supplements the monitoring and reporting described in the WRMP includes:

- Dust monitoring (see the Air Quality Management and Monitoring Plan);
- Wildlife monitoring (see the Wildlife Monitoring and Management Plan);
- Runoff and seepage water monitoring at WRSAs (see the Water Management Plan and the Aquatic Effects Monitoring Plan);
- Noise monitoring (see the Noise Abatement Plan);
- Geotechnical monitoring (see the Thermal and Geotechnical Monitoring Plan); and
- WRSA Closure monitoring (see the ICRP).

The monitoring to be conducted under the WRMP is detailed in the sections below.

7.1 WASTE ROCK MONITORING

7.1.1 WRSA INSPECTIONS – DAILY AND MONTHLY

During the active development of the WRSAs, personnel will carry out daily visual inspections in relation to the performance and condition of the WRSA. The purpose of these inspections is to identify and document any potential hazards or risks to the facility, worker safety, or the environment. These potential hazards could include deformations, unusual seepage, slumping, localized failure, and pooling water.

In addition, containment of surface runoff and seepage from the WRSAs will be monitored during the Construction and Operations phases. This monitoring will be completed through monthly visual inspections, and weekly visual inspections during freshet, along with the downgradient sides of diversion berms and containment structures during the open water season. Daily inspections will be carried out during extreme rainfall events (e.g., 1:100 year 24-hour rainfall event), if safe to do so. Additionally, WRSAs will be inspected during the Annual Geotechnical Inspections carried out by the Engineer of Record. Detailed information on the monitoring of surface runoff and seepage from the WRSAs is described in the Water Management Plan.

These inspections will be recorded, and any issues addressed adaptively.

7.1.2 WRSA MONITORING – ANNUAL

Each WRSA which is active in a given year will also be subject to an annual elevation and geometry survey to verify the overall volume of material placed. These annual surveys may be conducted in concert with the Annual Geotechnical Inspection (as per Water Licence 2AM-BRP1831 Amendment No. 1 Part I, Item 10) or as part of the Thermal and Geotechnical Monitoring Plan.

Inactive WRSAs may also be visually inspected on an annual basis to confirm geotechnical stability under the Thermal and Geotechnical Monitoring Plan.

A spring seep survey along the toe of the WRSAs, as well as regular monitoring of the collection ponds, will also be completed to verify and refine the water quality predictions for each WRSA. The locations of seeps will be marked in the field and recorded using a portable GPS. Field measurements of pH, electrical conductivity, oxidation-reduction potential, and temperature will be recorded, and samples will be submitted for acidity/alkalinity (as appropriate), sulphate, dissolved major cations (e.g., calcium, magnesium, sodium, potassium), as well as a full suite of dissolved metals. Further details on water quality monitoring in the collection ponds are provided in the Water Management Plan.

The results of these inspections will be recorded, and any issues addressed adaptively.

7.1.3 BLAST MONITORING

Blast hole sampling will be conducted in open pits to identify PAG and NPAG materials and allow the direction of each material to the appropriate location within each of the WRSAs. As discussed in Section 5.3, the distribution of PAG and NPAG waste rock is not closely linked to stratigraphy nor to lithology. Therefore, identification and subsequent segregation of these materials will require a dedicated blast hole monitoring program similar to the procedures that are used to identify and segregate ore in the mining operation and quarry rock during quarrying.

Waste rock samples will be collected from blast holes drilled prior to blasting. These samples will be collected based on blasting plans, which will be reviewed by trained mine geology personnel to select potential blast holes or areas for sample collection based on known geologic conditions. Samples will be analyzed as outlined below to determine geochemical characteristics on which monitoring and management actions will be based.

7.1.4 WASTE ROCK CONFIRMATORY TESTING AND SEGREGATION

Waste rock will be identified and segregated as being either NPAG or PAG prior to disposal in the WRSA and will be placed in accordance with this plan. Waste rock placement will be documented by blast and location within the WRSA and will be tied to sampling results. To confirm there is sufficient NPAG for WRSA cover construction, quantities of NPAG and PAG waste rock produced and placed in WRSAs and used for construction will be recorded on a monthly basis in accordance with Part I, Item 9b of the Type A Water Licence, 2AM-BRP1831 Amendment No. 1.

Waste rock samples collected in advance of, or concurrent with, mine development will be geochemically analyzed to confirm the characterization of these materials. At a minimum, 8 samples will be collected for every 100,000 tonnes of material to be excavated (MEND 2009). Samples will be collected from blast holes drilled in the rock prior to waste rock excavation. Samples will be managed as follows:

- Each sample will weigh no less than 1 kg.
- Each sample will be labeled with a unique sample identification number.
- Each sample will be documented in terms of sample depth and location and the drill/blast hole number.
- Composite samples (i.e., more than one lithology) will be avoided where possible.

All samples will be submitted for total S and NP analysis at the on-site laboratory. AP will be calculated from total S determined using an induction furnace (e.g., Eltra, Leco), and NP will be determined by the Sobek acid addition and back-titration method.

Additionally, off-site laboratory testing, at an accredited laboratory, on a subset of samples collected will include ABA and NAG testing to confirm geochemical the ARD classification. Short-term leach testing following the shake flask extraction (SFE) method will be conducted on sample subset to confirm the ML potential of NPAG material; this testing is not required for PAG samples, as PAG waste rock will not be used for construction. For quality assurance and quality control, 10% of samples will be split and sent to an external laboratory for verification testing to confirm the testing results generated on site.

Classification of Material

Sample results will be evaluated against the following criteria:

- Materials classified as NPAG (Table 5.3-1 and Table 5.3-2) are suitable for placement anywhere within the WRSAs and will be the only material used for WRSA cover and construction purposes.
- Materials classified as PAG (Table 5.3-1 and Table 5.3-2) will not be placed within the 5 m WRSA waste rock cover zone and placement may be additionally constrained to promote chemically stable closure conditions.

The NPAG samples analyzed for SFE will be compared against 10 times CCME guidelines for aquatic life to confirm ML potential. Material with a high-ML potential will also not be used for WRSA cover material.

As-built volumes of waste rock used in construction and placed in the WRSAs will be recorded daily in a manner such that rock disposal location is tied to sampling results.

7.2 REPORTING

Environmental reporting will be conducted as defined in permits, approvals, and authorizations relevant to mine waste management, with the primary regulatory instrument governing mine waste management for the Project being the Type A Water Licence, 2AM-BRP1831 Amendment No. 1.

As required by Schedule B of the Water Licence, the following information will be reported annually to the NWB as part of the Water Licence Annual Report:

- All monitoring data with respect to geochemical analyses, including ABA and associated test work conducted for the PAG/NPAG waste rock characterizations;
- As-built volumes (in tonnes) of waste rock used in construction and placed in the WRSAs, with the estimated balance of acid generation to acid neutralization capacity in a given sample as well as metal toxicity;
- Any geochemical outcomes or observations that could imply or lead to an environmental impact.

8. CONTIGENCIES, MITIGATION, AND ADAPTIVE MANAGEMENT

The mine design, including the WRSA design, has been carefully prepared taking into consideration the vast database of site characterization data gathered for the Project, coupled with rigorous engineering analysis. Where data was limited, conservative assumptions were consistently applied. While there is a high level of comfort that the plans are viable and realistic, it is understood that mining activities are by nature inherently uncertain. Therefore, additional mitigation or adaptive management measures may be required as an outcome of monitoring activities described in Section 7. These measures may include changes to WRSA development as a result of operational, engineering, and/or environmental monitoring. Any additional mitigation or adaptive management measures that are found to be required will be implemented in a timely manner.

Possible waste rock scenarios and contingency strategies are outlined Table 8-1.

Table 8-1 Waste Rock Management Contingency Strategies

Possible Scenario	Contingency Strategy
The total volume of waste rock might be smaller or greater than expected.	Provided the ratio of PAG to NPAG remains unchanged, this scenario will have no material effect. A greater total volume of waste rock might require a small increase in event pond sizing during Operations.
The ratio of PAG to NPAG waste rock might be different than expected.	If the amount of NPAG increases, there is no negative effect. If the amount of PAG increases leaving a shortfall of NPAG to cover the PAG, management options could include a portion of the PAG may have to be covered with a geosynthetic liner, or a PAG portion may have to be disposed of in an open pit upon closure, or additional NPAG material may have to be locally sourced as WRSA cover material.
The PAG material might oxidize faster than expected.	This scenario may require increased Operations Phase and/or Closure Phase water treatment capacity. It will however not change the overall closure strategy as the WRSA is still expected to freeze. If the heat from oxidation is preventing freezing of the pile, a portion of the pile may need to be covered with a geosynthetic liner to reduce infiltration or a portion of the PAG may need to be relocated to an open pit.
Neutral ML from the NPAG material may be greater than expected.	This scenario may require the WRSAs be covered with a geosynthetic liner, relocation of waste rock into an open pit upon closure, earlier initiation of water treatment, or extended water treatment until control methods are in place.
Freeze-back of the waste rock pile may take longer than expected.	Depending on the runoff water quality, this scenario may require a longer active closure period.
The active layer thickness of the WRSA, and therefore the required cover thickness, might be greater than expected.	If there is insufficient NPAG to make up the difference, this scenario may require that a portion of the PAG be covered with a geosynthetic liner, additional NPAG may have to be locally sourced, a portion of PAG may have to be relocated to an open pit upon closure, earlier initiation of water treatment, or extended water treatment until control methods are in place.

The Plan will be reviewed on a regular basis to incorporate any lessons learned, major changes to facility operation or maintenance, and environmental monitoring results. Any updates will be filed with the Annual Report submitted under the Type A Water Licence (2AM-BRP1831 Amendment No. 1 Part B, Item 2).

This plan represents an adaptive approach to understanding the effects of the Project on the landscape and the species that live there. In this context, the WRMP is part of a continually evolving process that relies not only on the efficacy of data collection and analytical results, but is also dependent on feedback from the communities, government, Indigenous groups, and the public. Having an adaptive and flexible program allows for appropriate and necessary changes to the design of monitoring studies, and changes to mitigation and monitoring plans.

9. RECLAMATION

The WRSAs will be rehabilitated and reclaimed progressively. The ultimate design of the WRSAs includes a minimum 5-m thick NPAG waste rock cover placed on the top and sides of each WRSA to encapsulate the PAG waste rock. The WRSAs will be progressively capped during the Operations Phase using NPAG waste rock sourced from adjacent or nearby active open pits or other NPAG stockpiles. The WRSAs will be fully developed within a timeframe to allow the final NPAG waste rock cover placement to mostly be completed during the Operations Phase. Closure and Post-Closure water quality monitoring will be conducted in the WRSA areas, as outlined in the ICRP, to confirm that runoff meets applicable receiving water quality objectives. Additional details pertaining to WRSA reclamation and closure are provided in the ICRP.

10. REFERENCES

1985. *Fisheries Act*. R.S.C., 1985, c. F-14.

1988. *Environmental Protection Act*. RSNWT (Nu) c. E-7.

1994. *Mine Health and Safety Act*. SNWT (Nu) c.25.

2002. Metal and Diamond Mining Effluent Regulations. SOR/2002-222.

2002. *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. S.C. c.10.

BGC (BGC Engineering Inc.). 2026. *Goose Project 2026 Water and Load Balance Report*. Submitted to B2Gold Back River Corp. June 2026.

MEND. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1. Natural Resources Canada, Mine Environmental Neutral Drainage Program: Ottawa, ON.

MVLWB/INAC/GNWT (Mackenzie Valley Land and Water Board & Indigenous and Northern Affairs Canada & Government of the Northwest Territories). 2017. Guidelines for the Closure and Reclamation Cost Estimates for Mines. Available at: https://mvlwb.com/sites/default/files/images/Closure%20Cost%20Estimating%20Guidelines_FINAL_Nov%2024%202017.pdf.

Sabina (Sabina Gold & Silver Corp.). 2016. Back River Project FEIS Information Request Responses – Part 2, Appendix O. February 2016.

Sabina. 2017a. Final Environmental Impact Statement Addendum. Submitted to Nunavut Impact Review Board. February 2017.

Sabina. 2017b. Revised Type A Water Licence Application for Sabina Gold & Silver Corp. Back River Project. Submitted to the Nunavut Water Board. October 4, 2017.

SRK (SRK Consulting (Canada) Inc.). 2023. *Back River – Slope Stability Analysis for Updated Echo Waste Rock Storage Area*. Submitted to B2Gold Back River Corp. May 23, 2023.

Smith L. 2025. *NPAG/PAG Segregation Criteria Update*. Submitted to B2Gold Back River Corp. June 2, 2025.

Terracon (Terracon Geotechnique Ltd.). 2025. *Umwelt Waste Rock Storage Area Geotechnical Assessment*. Submitted to B2Gold Back River Corp. March 10, 2025.