

## 1. Introduction

The Government of Yukon has concluded its assessment of the closure-related risks and liabilities at the Brewery Creek Mine site (the "Site") and finalized determination of financial security required. The Government of Yukon has determined that \$1,668,500 in security, inclusive of the \$1,000,000 currently held by Government of Yukon, is required to be furnished. This document presents the process and rationale for the security determination.

## 2. Legislative and Policy Context

The security determination is based on the remaining closure liabilities of the mining operations and the costs that would be incurred by the Government of Yukon if it was required to reclaim the Site. The determination is made pursuant to the *Quartz Mining Act* (paragraph 139) and *Security Regulation* (sections 3 and 4), and in accordance with quartz mining license (A99-01) issued to Golden Predator Corp. ("Golden Predator")<sup>1</sup>, including the 2003 Decommissioning and Reclamation Plan approved under the license.

Additionally, relevant policy and guidance material has been applied, including the Yukon Mine Site Reclamation and Closure Policy (2006), "Reclamation and Closure Planning for Quartz Mining Projects" (2013) and "Financial Guidelines" (2014).

The authority to determine the amount of security to be furnished, as set out in the *Quartz Mining Act*, is delegated to the Director of Mineral Resources Branch ("MRB"), Department of Energy, Mines and Resources.

The former operator, Alexco Resource Corp., and the Government of Yukon signed the Reclamation Security Release Agreement (the "Agreement") in 2005<sup>2</sup>, which describes the process for and roles of the parties in the review of the outstanding closure liabilities at the Site and update of the required amount of security. The security review and determination process for all mine sites is now set out in the *Security Regulation*, which was not enacted at the time the Agreement was established. MRB has endeavoured to work within the framework and principles of the Agreement to the extent possible, recognizing that it cannot be used to frustrate the authorities of the *Quartz Mining Act* and *Security*

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<sup>1</sup> The Government of Yukon is aware that through a recent merger process, Golden Predator Corp. has become a new corporate entity, Sabre Gold Mining Corp. Golden Predator Corp. remains the licensee of the quartz mining license (A99-01), and as such, that entity is referred to herein.

<sup>2</sup> In 2012, the Agreement was assigned to Golden Predator as part of the Site's ownership change at that time.  
December 2021

Regulation. MRB's view is that this security review has been conducted in a manner consistent with both the Agreement and the Security Regulation.

The quartz mining licence (A99-001) for the Site expires on December 31, 2021. The security will nonetheless continue to be held by the Government of Yukon until such time as it is determined, through security reviews conducted pursuant to the applicable legislation, that security funds may be released.

### **3. Overview of Security Determination Process**

The history of the Brewery Creek Mine site provides important context for understanding this security determination. The Brewery Creek Mine operated from 1996 to 2002. Mine closure activities were completed in 2004 and since 2009 the site has been in the post-closure care and maintenance stage. Thereafter, the Site owner, Alexco Resource Corp. and subsequently Golden Predator, continued to conduct post-closure monitoring and site maintenance activities. By way of the aforementioned Agreement, the Government of Yukon periodically released security funds upon demonstration of reduced site risks and liabilities.

In 2015, a security review was conducted and the outstanding site liability was determined to be \$454,000. Following Golden Predator's removal of a large portion of the earthen cover from the heap leach facility in 2019, the company voluntarily increased the amount of security furnished to \$1,000,000. In 2020, MRB initiated the security review process that has concluded in the present security determination.

The security determination process commenced with MRB providing notice to Golden Predator that the Branch was undertaking a security review for the Site. Subsequently, MRB developed a scope of work for the review to delineate the issues and considerations to be addressed, and solicited input from Golden Predator and Tr'ondëk Hwëch'in Government.

The scope of work was to prepare a security cost estimate, consistent with the approved Decommissioning and Reclamation Plan, that considered the remaining closure liabilities, the outstanding reclamation and remediation measures, and a five year monitoring period. MRB retained an independent, qualified technical consultant (Northland Earth and Water Consulting Inc.) to conduct the work to inform the Government of Yukon's security determination.

MRB and its independent technical consultant conducted a site visit in July 2021 to support the security review. Representatives from Golden Predator hosted the MRB team at the Site, and the company's independent technical consultant (SteveJan Consultants Inc.) joined the site visit in support of Golden Predator's closure liability and security cost estimate. Tr'ondëk Hwëch'in First Nation representatives intended to join the site visit, but were unfortunately unable to.

Following the site visit, the independent technical consultants for Golden Predator and MRB prepared respective preliminary cost estimates. The cost estimates were shared with all parties. MRB, Golden Predator, Tr'ondëk Hwëch'in and the independent consultants met to discuss the differences, and clarify the assumptions and basis for the estimates.

MRB's technical consultant and Golden Predator subsequently updated their estimates based on the additional information gathered through those discussions and submitted final cost estimates and comments for MRB's consideration.

Throughout this process, MRB met with Golden Predator on a number of occasions to delineate the outstanding reclamation activities, present and discuss the independent consultants' findings and cost estimates, and to outline the expectations for monitoring and maintenance following the implementation of the outstanding closure measures. Tr'ondëk Hwëch'in was a part of most of those discussions.

#### **4. Consultation**

The project lies within the Traditional Territory of the Tr'ondëk Hwëch'in First Nation. Throughout the security review process, MRB consulted with Tr'ondëk Hwëch'in on the remaining site liabilities, the planned reclamation and closure measures, ongoing care and maintenance of the sites, and the amount of financial security required. Representatives for Tr'ondëk Hwëch'in were in regular communication with MRB during this review to inform the assessment of site liabilities and security costs. Tr'ondëk Hwëch'in provided both written and verbal input on the determination of financial security.

The project is also located along the western border of the Traditional Territory of the First Nation of Na-cho Nyak Dun. MRB contacted the First Nation in 2021 to provide an update of security and regulatory-related matters concerning the Site and followed up with a subsequent update in late November. MRB did not receive any formal input from the First Nation of Na-cho Nyak Dun.

#### **5. Key Security Costing Components**

This section outlines the key security costing components that represent the substantive risk items and largest drivers of cost. For each component, the pertinent issues are summarized, the technical input received is presented, and the final decision is described. The components are:

- Heap Leach Facility Cover Replacement
- Heap Expansion Area Reclamation
- Demolition of Buildings

- Care and Maintenance Monitoring

### 5.1 Heap Leach Facility Cover Replacement

In 2019, Golden Predator removed most of the cover material from the heap leach facility and stockpiled it adjacent to the facility. The Government of Yukon required the company to replace the cover during the 2021 field season.

Throughout the 2021 field season, Golden Predator made efforts to replace the cover material on the heap leach facility and prepare the area for revegetation. Golden Predator provided reports to the Government of Yukon Natural Resources Officer to attest that the cover material had been replaced and the area had been reseeded. The Natural Resource Officer was not able to confirm the completion of these activities due to snow cover, but observed some of the reclamation activities throughout the season and noted that the stockpiles containing the cover material were no longer there.

The cost estimate prepared by MRB's technical consultant, Northland, assumes that no activities have taken place and provides a full cost estimate for the movement of sufficient material, coarse and fine grading, and revegetation. Northland prepared the estimate using these assumptions per MRB's direction to ensure the full costs were presented and available to use for future credit purposes.

The cost estimate prepared by SteveJan on behalf of the company assumes that the cover is complete and includes one additional seeding event in the 2022 season to ensure adequate revegetation coverage.

The company requested that MRB consider and provide credit for the work undertaken throughout the 2021 field season.

#### *Final Decision*

MRB acknowledges that a substantial amount of work was completed over the 2021 field season to replace the heap leach facility cover, and that credits should be given for the work. As described above, the Natural Resource Officer was not able to confirm the completeness of the activities; thus, it is MRB's decision that a full credit for the complete works cannot be applied at this time. Table 1 outlines the credits provided for the work undertaken. A full credit has been applied for the heap regrading work, and an 80% credit has been provided for the movement and spreading of the cover material. Due to the lateness of the season when seeding occurred, no credits have been applied for the revegetation efforts.

The Natural Resource Officer will inspect the reclamation activities during the 2022 field season.

Table 1: Credits Provided for Replacement of Heap Leach Cover

| Cost Item                 | Credit Provided |
|---------------------------|-----------------|
| Grading                   | 100%            |
| Movement of growth media  | 80%             |
| Spreading of growth media | 80%             |
| Revegetation of area      | 0%              |

## 5.2 Heap Expansion Area Reclamation

As with the closed heap leach facility, the growth media and vegetation in the heap expansion area was stripped by the company in 2019. The company has not attempted to replace the cover growth media and revegetate the expansion area.

The cost estimate prepared by the company did not include costs associated with the reclamation of this area.

Northland's estimate include costs associated with regrading, replacement of growth media and revegetation of the heap expansion area. These activities are consistent with the approved 2003 Decommissioning and Reclamation Plan.

### *Final Decision*

It is MRB's decision that the required security amount should include the costs to replace and revegetate the cover of the heap expansion area. Those costs are included in the security determination.

## 5.3 Demolition of Buildings

The approved 2003 Decommissioning and Reclamation Plan required removal or demolition of all mine buildings. At this time, the only remaining building is a portion of the warehouse. The warehouse building must be removed or demolished and the surrounding areas reclaimed.

MRB's and Golden Predator's technical consultants both included costs for demolition and associated disposal and reclamation requirements.

### *Final Decision*

It is MRB's decision that the required security amount should include the costs for demolition and associated disposal and reclamation of the warehouse. Those costs are included in the security determination.

#### 5.4 Care and Maintenance Monitoring

The 2003 Decommissioning and Reclamation Plan included a five-year post-closure care and maintenance period, intended to ensure that all reclamation measures were performing as expected. The company has agreed to continue an environmental monitoring program following expiry of the quartz mining license (A99-001) to monitor the effectiveness of the measures undertaken for the heap leach facility and to continue much of the same monitoring program for other aspects of the site. MRB's and Golden Predator's technical consultants both included costs associated with ongoing environmental monitoring activities.

Northland's estimate includes the costs to design and install two new lysimeters: one in the Blue Waste Rock Facility and one in the heap leach facility. Both lysimeters are intended to monitor the effectiveness of the covers placed in these areas and to determine if excessive infiltration is occurring that could impact water quality. Northland noted the sparse data collected from the existing lysimeter in the waste rock facility and questioned whether that station has been functioning as intended.

SteveJan did not include costs for new lysimeters. Golden Predator and SteveJan asserted that data collected since the establishment of the blue waste rock cover and the previous heap leach cover demonstrate effectiveness of the closure measures, and that the existing monitoring network is sufficient to ensure water quality parameters are being met.

The capital costs for a new weather station were included in the Northland estimate, intended to ensure that Yukon government could purchase a new weather station in the event it is required to take control of management of the Site. Golden Predator subsequently provided confirmation that the weather station is functioning as required, and has attested that the station will remain in place regardless of the status of the company.

#### *Final Decision*

It is MRB's decision that five years of additional environmental monitoring is required and accordingly, those costs are included in the security determination.

MRB has determined that lysimeters are not required. Accordingly, MRB has incorporated the costs for five years of monitoring, minus the costs associated with the lysimeters, into the final security determination. MRB considered the views and information put forward by Northland, Golden Predator and SteveJan, as well as the license reporting requirements. Collected data demonstrate that the original cover for the heap leach facility performed as expected, and the new cover is the same in terms of material and design as the original. Further, continued water quality monitoring downgradient of the heap leach facility is included in the security determination. MRB also notes that the approved Decommissioning and Reclamation Plan did not include a lysimeter for the heap leach facility.

With respect to the Blue Waste Rock Facility, the efficacy of its cover has not come into question previously and the downgradient water quality does not show impacts from the waste rock. Further, continued water quality monitoring downgradient of the Blue Waste Rock Facility is included in the security determination.

MRB has accepted the information from Golden Predator regarding the weather station and has not included replacement costs for the station.

## 6. Closing

Having completed the assessment of security required for the Brewery Creek Mine Site, MRB, on behalf of the Government of Yukon, has determined that \$1,668,500 is required to be furnished no later than February 7, 2022 to cover the costs that would be incurred by the government if it was required to reclaim the Site. MRB has relied on the information provided by its independent technical consultant, Golden Predator and its technical consultant, as well as Tr'ondëk Hwëch'in, to inform the security determination.

The licensee is directed to contact MRB regarding appropriate forms of security.

A handwritten signature in blue ink that reads "T. Powell".

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Todd Powell, Director  
Mineral Resources Branch  
Energy, Mines and Resources

A handwritten date in blue ink that reads "Dec 9/21".

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Date