FINAL

Geochemical Guidance for Reclamation of Waste Rock at Ulu Camp

Ulu Gold Project, Nunavut, Canada

Blue Star Gold Corp

SRK Consulting (Canada) Inc. ▪ CAPR003914 ▪ September 22, 2025

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Prepared for:
Blue Star Gold Corp.
700 West Pender Street, Suite 507
Vancouver, BC V6C 1X6
Canada

+1 778-379-1433
www.bluestargold.ca

Prepared by:
SRK Consulting (Canada) Inc.
320 Granville Street, Suite 2600
Vancouver, BC V6C 1S9
Canada

+1 604-681-4196
www.srk.com

Lead Author: Colton Vessey **Initials:** CV
Reviewer: Darryl Godley **Initials** DG
Stephen Day SJD

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Aerial view of on-going reclamation activity at the ore pad. Photo taken by Blue Star Gold Corp.

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Useful Definitions

This list contains definitions of symbols, units, abbreviations, and terminology that may be unfamiliar to the reader.

AG	Acid generating
ARD	Acid rock drainage
ML/ARD	Metal leaching and acid rock drainage
PAG	Potentially acid generating

1 Introduction

Blue Star Gold Corporation (Blue Star) has requested SRK Consulting (Canada) Inc. (SRK) to provide guidance for on-site reclamation activities at the Ulu reclamation project in Nunavut with the goal of minimizing risks associated with metal leaching and acid rock drainage (ML/ARD). Water quality monitoring has been conducted on an annual basis since 2020 to assess the ML/ARD conditions at the Ulu project. ARD conditions are seasonally present (July/August) within the waste rock pad and water quality has deteriorated at some monitoring locations since 2020 (SRK, 2025a).

SRK is developing an interim ML/ARD management consolidation and cover plan to manage the high-risk acid generating (AG) and potentially acid generating (PAG) rock at the Ulu project (SRK, in progress), with the final goal being a long-term ML/ARD management plan. A range of cover options has been provided to Blue Star to progress cover placement while understanding the risks of each configuration (SRK, 2022a). Due to areas of the waste rock and mineralized rock beginning to show indicators of ML/ARD, the decision made by Blue Star is to implement an interim management approach to minimize the risk of unwanted release of leachate into the environment while the long-term ML/ARD plan is finalized. Recommendations for thermal and barrier cover options have been presented to Blue Star (SRK, 2022b; SRK, 2025b).

This memorandum provides geochemical guidance for interim closure activity on-site that has been underway as of May 2025. The infrastructure involved in the remediation work includes AG and PAG rock at the ore pad and the waste rock-portal pad. The guidance has been based on an initial request provided on June 25, 2025 by SRK. The guidance addresses principally the objective of preventing the AG/PAG rock from further acidifying and impacting water quality and drainage in the vicinity of the infrastructure.

2 Site History

The Ulu project was historically an advanced gold exploration project with underground development occurring in 1996 and 1997. An estimated 126,900 tonnes of waste rock were produced during the underground exploration program (Wolfden, 2005). Development waste rock brought to surface was used to construct the camp pad, sections of the road network and to build the ore pad and waste rock-portal pad (Figure 1). Estimated volumes in each of the pads from BGC (2003) are 15,000 m^3 in the camp pad, 28,000 m^3 in the ore pad and waste rock-portal pad including approximately half of which is in a waste rock stockpile on the waste rock-portal pad (4,300 m^3). The pads are estimated to be around 1 to 3 m thick.

Approximately 2,200 tonnes of mineralized bulk sample were brought to surface and temporarily stored on the ore pad prior to removal off-site (Cowley et al, 2015). An estimated 750 m^3 of this remained on the ore pad in a stockpile when the project was abandoned, until the mineralized rock was subsequently relocated to the portal-mine sump area between 2018 and 2019.

Sand and gravel from an esker approximately 6 km south of the Ulu camp was also used as a construction material at the site and overlies waste rock on much of the ore pad and parts of the camp pad. Based on test pit programs, the earliest (central) part of the camp pad is built from esker material with waste rock additions around the margins, as development rock from underground became available.

2020

As part of Blue Star's reclamation activities in 2020, much of the esker sand on the ore pad surface was stockpiled along the center of the pad to expose the underlying rock. The esker sand had reportedly been up to a meter thick in places (A. Stearman, personal communication, 2020). Waste rock from an area of approximately 6 m by 50 m along the northwest edge of the ore pad (that had not historically been covered in esker sand) was removed by excavator and stockpiled in preparation for building a new soil treatment facility (STF) on the ore pad. Some of the waste rock was used to fill in low points on the ore pad STF site and was then covered with the stockpiled esker sand (A. Stearman, personal communication, 2021). Some of this waste rock remained stockpiled on the ore pad. Both the stockpiled waste rock and residual waste rock on the tundra along the northwest edge of the ore pad were identified as acid generating based on rinse test results (SRK, 2021). The stockpiled waste rock was covered with tarps in July 2022 to limit precipitation ingress. The STF has not yet been built pending decisions on management of the rock in and on the ore pad.

2021

During August and September 2021, acid generating waste rock removed from camp 3 (200 m^3) and culvert 6 (68 m^3) during remediation works was temporarily relocated to the ore pad (SRK, 2022c). The waste rock was subsequently covered with tarps, to limit precipitation ingress, pending development of a long-term management plan for the larger volumes of acid generating and potentially acid generating (PAG) rock at the Ulu site.

The broader Ulu property is undergoing exploration by Blue Star; however, infrastructure at the Ulu camp site that is not required for the exploration program is being reclaimed. A landfill facility was constructed to the south of the camp pad during the 2021 season, and stockpiled scrap materials from various locations around the camp pad and on the waste rock-portal pad were removed and relocated to the landfill and covered with esker sand. The landfill was contoured such that drainage at freshet should run-off the frozen esker sand cover and into the compliance monitoring site ULU-15 and subsequently into down-gradient seeps towards East Lake.

2024

During August and September 2024, acid generating waste rock from within the northwest edge of the ore pad, and residual waste rock lying on the tundra that was exposed in 2020, was relocated by Blue Star onto the ore pad, as part of initial consolidation works in preparation for covering for interim management. The rock was added to the existing temporary stockpile at the center of the ore pad.

Figure 1: Site layout prior to reclamation activity at ore pad (pre-2024)

3 Site Conditions and Assumptions

The following general assumptions and known site conditions, based on previous studies, were used to provide the guidance:

- Around 90% of the waste rock in the infrastructure pads is classified as AG/PAG.
- Waste rock was acidifying to some extent in all the pads, particularly in near-surface rock, and down the outer edges of the pads, as shown by localized rinse pH values of 2.9 to 3.9.
- Most waste rock at depth had circum-neutral rinse pH (6.5 to 8); however, acidic areas existed at depths of up to 2 m within the pads, associated with areas that were not covered in esker sand, and with higher than typical sulphide content.
- Based on calculations using all the available datasets, delay to onset of acidification estimates for PAG rock not covered in esker sand ranged from less than a year to six years (from 2020) for “worst case” material, depending on the depth, and six to 16 years for material with “typical” ARD potential, again depending on the depth. Where rock had historically been covered in esker sand, the estimated delay to ARD was longer at 11 to 25 years (from 2020).
- Seepage from the infrastructure pads is impacted by metal leaching at levels above British Columbia and CCME protection for aquatic life water quality guidelines for some parameters, which is predominantly being driven by oxidation of pyrrhotite and pyrite (as the dominant sulphides) along with trace chalcopyrite, sphalerite, arsenopyrite and millerite; resulting in widespread leaching of sulphate and zinc, in addition to leaching of cadmium, iron, manganese, nickel, and selenium in ore pad seepage, and leaching of arsenic from mineralized rock.
- Trace element leaching is expected to increase if pH declines further or if local acidic conditions within the pads become more widespread.
- Disturbance of the waste rock and mineralized rock results in a release of stored acidity and oxidation products associated with exposed surface area and greater reaction with oxygen. This has been evident in water quality data from the north-edge of the ore pad where rock was disturbed in 2020.

The guidance is provided based on commonly accepted first principles. Innovative approaches could also be used but will likely be challenging for regulatory approvals. The measures described are primarily targeted to address acid generation potential which will also address metal leaching potential.

4 Guidance

4.1 General

The following general guidance is provided:

- Relocating waste rock and mineralized rock involves the following steps: excavation down to tundra floor with excavator bucket and loader, removal of small-medium rock pieces by hand, followed by skid-vac to collect finer grained material. This method has been demonstrated to remove most of the material; however, some waste rock and mineralized rock material may remain due to difficulty relocating material from the tundra surface.
- Disturbed areas where waste rock and mineralized rock have been removed should be covered with limestone and esker sand. The limestone addition will provide additional alkalinity to neutralize any residual fines[1] that may be classified as AG/PAG, while the esker sand cover will prevent transport of residual fines and limestone material. It is recommended that the limestone be evenly applied across the disturbed surface as best as possible. The amount will vary depending on the characteristics of the waste rock and mineralized rock for a given infrastructure area. After application of limestone material, but prior to esker sand placement, it is recommended that representative grab samples be collected for acid-base accounting (ABA) analysis. The grab samples should capture surface material only (upper 1 to 2 cm), where the matrix will be a mixture of residual fines, tundra soil, and applied limestone.
- Relocating AG/PAG rock should be done as quickly as possible, and the excavated area should be covered with limestone and esker sand immediately; ideally each disturbed area should be covered within a given operating season (May-August). This will help minimize release of acidity and constituents of concern associated with sulfide oxidation and dissolution soluble phases.
- It is recommended that rinse pH testing be performed at two sample depths on rock that is being relocated: one each at the surface (but below the esker sand layer) and foundation of the infrastructure pad. For areas where material is being relocated sequentially, it is recommended that rinse pH testing be conducted in one to three transects (depending on the spatial expanse), perpendicular to the direction of removal, on samples from every other row of waste rock removed. Grab samples from the excavator bucket are sufficient.
- Crushed limestone will need to be sourced externally from site as there is no suitable material near Ulu. It is recommended that the sourced limestone be tested for geochemical and physical properties prior to purchase. Due to the short season on-site at Ulu, Blue Star has purchased limestone material from Lime Stone Cowboys (Chetwynd, British Columbia) to be used for reclamation activity at the ore pad. SRK reviewed documents provided by Lime Stone Cowboys (GeoNorth Engineering, 2018) and recommends additional characterization on two subsamples: ABA, particle size distribution, and shake flask extractions.

[1] Reactive material here are classified as fines < 2 mm. This was found to be approximately 10% of the waste rock material at the ore pad from SRK (2021).

- Seepage monitoring locations should be re-assessed following relocation of mineralized rock and waste rock during interim and post-closure reclamation.

4.2 Ore Pad

The ore pad represents the area with the highest risk of developing acidic conditions as described by SRK (2025a). The ore pad is located on a local drainage divide where water flows through the subsurface from the northern portion of the ore pad to the northwest (drainage point at Lake G43) and from the southern edge of the ore pad towards the southeast. Drainage paths within the ore pad remain unknown; however, an electromagnetic geophysical survey is being performed in July 2025 to further examine these drainage paths. The extent of material that requires relocation at the ore pad is shown in Figure 2.

Highest priority areas in the ore pad that require immediate management are:

- The northern edge of the ore pad (i.e., north side of the drainage divide) where acidic conditions and metal leaching are seasonally observed at Seep-05.
- The southeast part of the ore pad where mineralized rock was previously stockpiled (this part of the ore pad is currently at high risk of exceeding the NWB effluent quality limit for zinc).
- The southern edge of the ore pad where there is limited sand cover (also at risk of generating ARD and more severe metal leaching).

The following guidance is provided for the following areas:

- Northern edge of ore pad:
  - Reclamation is currently underway at the northern edge of the ore pad where waste rock and mineralized rock is being pulled back towards the edge of the drainage divide. For efficiency, Blue Star has positioned the excavator the dump truck on the temporary accessway (within the original ore pad extent) with the excavator sitting on the ore pad to more efficiently load the dump truck. The temporary accessway for the dump truck has been covered with esker sand. Following removal of most of the material a dozer is used to scrap as much of the remaining waste rock as possible. At which point the skid-vac is used to pick up residual fine material as best as possible. SRK agrees with this approach.
  - Complete removal of all waste rock material is challenging due to the uneven and rough terrain of the underlying tundra. After removal of as much waste rock as possible, it is recommended that limestone be placed directly on the residual waste rock material followed by an esker sand cover of 0.5 m. The amount of limestone material required is presented in Section 4.2.1.
  - SRK inspected the reclamation efforts at the northern edge of the ore pad during a site visit (August 17–20, 2025). At the time of the site visit the majority of the waste rock had been removed down to the tundra surface (Figure 3 and Figure 4). The amount of waste rock remaining varied depending on the difficulty to remove material given the uneven tundra surface below the waste rock. Figure 5 to Figure 9 shows the range of waste rock material

remaining following reclamation activity at the northern edge of the ore pad.[2] This appears to range from nearly minimal waste rock material left to up to ~15 cm of material remaining; however, the amount of material remaining is typically less than 5 cm. Given the large variability in the amount of material remaining, an upper value of 10 cm of waste rock material remaining was used to determine the amount of limestone required for reclamation (Section 4.2.1).

- Southern edge of ore pad:
  - Blue Star plans to remove waste rock and mineralized rock to slope the ore pad for closure. A similar approach to the northern edge will be adopted for reclamation at the southern portion of the ore pad. SRK recommends that the southern ore pad material be removed progressively in smaller sections that are then immediately covered with limestone followed by esker sand to minimize exposure and oxidation of undisturbed material. The southern edge will be gradually sloped northward and covered in esker sand for closure (SRK, 2022b; SRK, 2025b).
  - In areas where waste material is removed down to the tundra floor at the southern ore pad it is recommended that limestone be applied directly on the disturbed area that may contain residual waste rock material followed by esker sand.

Waste rock and mineralized rock that has been relocated to the center of the ore pad will be at risk of developing more severe acidic conditions, which could accelerate metal leaching and rapidly deplete carbonate from underlying rock in the ore pad, due to increased exposure to oxygen and precipitation. Therefore, it is recommended that relocated waste rock and mineralized rock be covered for interim closure with a minimum of 2 m esker sand as quickly as possible, within one to two field seasons, following closure recommendations (SRK, 2022b; SRK, 2025b). In the meantime, the relocated ore pad material should remain in the center of the ore pad as this will help minimize discharge of acidity and associated constituents of concern given longer flow paths and potential for neutralization within lower waste rock material.

[2] Note that the Figures 5–7 show small amounts of residual waste rock scattered on tundra soil and residual esker sand following reclamation efforts. Whereas Figures 8 and 9 show the amount of waste rock remaining down to tundra soil.

Figure 2: Outline for waste rock removal areas at north and south ore pad (green-hatched area) and the groundwater divide (blue line).

Source: NACAPR003914 Ulu Gold 2025 Scope of Work - Internal\Task 400 Reclamation Support\Geochemical Guidance Memo\Figures

Figure 3: Waste rock remaining on northern portion of ore pad as of August 18, 2025 (facing east from center).

Figure 4: Waste rock remaining on northern portion of ore pad as of August 18, 2025 (facing west from center).

Source: NACAPR003914 Ulu Gold 2025 Scope of Work - Internal\Task 400 Reclamation Support\Site visit\Photos

Figure 5: Example one of waste rock remaining on north ore pad area.

Figure 6: Example two of waste rock remaining on north ore pad area.

Figure 7: Example three of waste rock remaining on north ore pad area.

Source: NACAPR003914 Ulu Gold 2025 Scope of Work - Internal\Task 400 Reclamation Support\Site visit\Photos

Figure 8: Example four of waste rock remaining on north ore pad area (~15 cm depth).

Figure 9: Example five of waste rock remaining on north ore pad area (~5 cm depth).

Source: NACAPR003914 Ulu Gold 2025 Scope of Work - Internal\Task 400 Reclamation Support\Site visit\Depth Test Pits

4.2.1 Limestone Neutralization Calculation

The amount of limestone required to offset potential acidification of residual fine-grained material following relocation of rock at the ore pad is calculated based on the target NPR to ensure that acid general potential is offset by limestone:

$$NPR_{Mix}=\frac{M_{fines}TIC_{fines}+M_{LST}TIC_{LST}}{M_{fines}AP_{fines}+M_{LST}AP_{LST}}$$

Reorganizing yields:

$$M_{LST}=M_{fines}\left(\frac{TIC_{fines}-NPR_{Mix}AP_{fines}}{NPR_{Mix}AP_{LST}-TIC_{LST}}\right)$$

Where the mass of residual fines (M_{fines}) is calculated assuming a bulk density of 1,800 kg/m^3 and a total volume of residual fines remaining. The target NPR for the mixture (NPR_{mix}) is set to 3 to allow for mixing inefficiencies. Table 1 provides a summary of parameters used for the above equation and the two calculation scenarios.

There are two potential scenarios considered here for the amount of limestone required to offset potential acid generation from waste material at the ore pad, the average and upper-case scenarios. The average case would require 5.7 tonnes $CaCO_3$ (or 1.0 kg $CaCO_3$/m^2) and the upper-case scenario would require 12 tonnes $CaCO_3$ (or 2.0 kg $CaCO_3$/m^2). It is recommended that the upper-case scenario value be used for limestone placement (2.0 kg/m^2) given the variability in the amount of waste rock material remaining on the tundra surface.

Table 1: Summary of parameters used to calculate mass of limestone required for acid neutralization at disturbed areas at the ore pad.

Parameter	Value
Disturbed Area at North Edge (m^2)[1]	4,117
Disturbed Area at South Edge (m^2)[1]	1,577
Maximum Thickness of Residual Waste Rock (cm) [2]	10
Thickness of Residual Fines (cm)[3]	1.0
Total Volume of Residual Fines (m^3)[4]	102
NPR_{mix}	3
AP_{LST}[5]	2.2
TIC_{LST}[5]	954
AP_{Fines} (average value)[6]	21
AP_{Fines} (maximum value)[6]	37
TIC_{Fines} (average value)[6]	11
TIC_{Fines} (minimum value)[6]	3.3

Sources NACAPR003914/Internal/Task 400 Reclamation Support/Geochemical Guidance Memo/[CAPR003914_Ulu_LimestoneCalc_Rev00.xlsx]

Notes:

[1] Values provided by Darryl Godley (SRK).

[2] Based on field observations following waste rock relocation. Note that there is a large variability in the amount of waste rock material remaining; however, this is the most conservative approach.

[3] Assuming a maximum thickness of 10 cm waste rock remained following relocation and assuming 10% of the remaining material is reactive (i.e., particle size <2 mm).

[4] Calculated total volume from total disturbed area and thickness of residual fines.

[5] Values from GeoNorth Engineering (2018).

[6] Values for ore pad fines (SRK, 2021).

4.3 Waste Rock-Portal Pad Area

The waste rock-portal pad area is the next area that requires reclamation following the ore pad. Mineralized rock stockpiled above the portal is classified as PAG. Seepage drains into the mine sump pond (where the integrity of the liner is questionable), the portal pond, or a third adjacent temporary pond directly to the west which is thought to drain (sub-surface) to Seep-02 and then into East Lake.

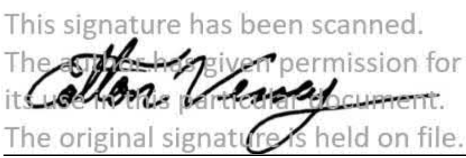
Blue Star has proposed to dewater the portal pond by discharging towards East Lake (with monitoring at either ULU-7, Seep-10, Seep-9 or Seep-2) followed by backfilling the portal area with mineralized rock located above the portal pond and waste rock located southeast of the portal pond. Note that draining the portal pond is not necessary but may provide additional advantages to rock placement. Closure of this area will involve generating a natural slope towards the southeast and covering the material with esker sand to create an interim thermal barrier and later incorporating the long-term ML/ARD cover design.

SRK agrees with the above approach and provides the following guidance:

- It is recommended that the most severe material at risk of acidification and metal leaching (i.e., PAG material) be placed within the portal pond below the natural water level (i.e., not yet acid generating). Once the reclamation activity is complete the back filled portal pond will fill with water and eventually freeze. This strategy will limit acid generation and potential release of constituents of concern. Note that already acid generating rock should not be placed in the portal pond entrance since this material may flush oxidation products.
- During placement of the esker sand thermal cover for closure SRK recommends blending with limestone to provide additional buffering capacity. Rehandled mineralized rock and waste rock within the waste rock-portal area will result in increased exposure to atmospheric conditions that may release stored acidity and constituents of concern. The blended esker sand and limestone material will therefore provide buffering capacity to offset acidity until the thermal cover can be constructed and permafrost conditions develop at depth.

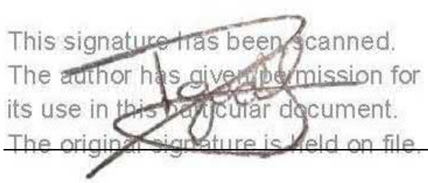
Closure

This report, Geochemical Guidance for Reclamation of Waste Rock at Ulu Camp, was prepared by



Colton Vessey, PhD, GIT (SK)
Senior Consultant (Geochemistry)

and reviewed by



Darryl Godley, PEng (NT/NU)
Senior Consultant (Civil Engineering)

Stephen Day, PGeo (NT/NU)
Corporate Consultant (Geochemistry)

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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