ENVIRONMENT AND HERITAGE RESOURCES PROTECTION PLAN

Ulu Gold Project

(including Hood River, Roma and other licenced projects)

Kitikmeot Region, Nunavut

March 2021

BLUE STAR GOLD CORP.

SUMMARY

This Plan describes what will be done to avoid damaging the land, air, water, wildlife and archaeological sites within all of its work areas including the Ulu Gold Project, Hood River Gold Project, near Kugluktuk, Nunavut.

REVISION HISTORY

Revision #	Date	Section	Summary of Changes	Author	Approver
20EN001, 19EA019					
2	Mar 21	Summary, Section 1, Table 1, Section 1.3, Figure 1	Amalgamated existing approved Hood River and Ulu management Plans into 1 document for operational efficiency as all activities will be centralized and based out of Ulu. Changes throughout to reflect name of project, related activities and authorizations.	S. Hamm	D. Lindsay
		Section 2	Updated contact info		
20EN001					
1	Jan 2020	-	New document issued	Blue Star Gold Corp.	
19EA019					
1	Apr 2019	-	New document issued	Blue Star Gold Corp.	

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1.0 INTRODUCTION

This *Environment and Heritage Resources Protection Plan* (the Plan) describes methods for protecting environmental and heritage resources that occur within Blue Star Gold Corp.'s work areas including the Ulu Gold Project, that previous defined as the Hood River Gold Project area, and regional exploration areas of interest; the majority of activities are based out of the Ulu camp and undertaken in the local area (the Project). This document should be read in conjunction with the documents listed in Table 1 (which may be updated from time to time).

Table 1 Related project documents, permits and licences.

Document	Authors
Engagement Plan	Blue Star Gold Corp.
Spill Response Plan	Blue Star Gold Corp.
Interim Closure and Reclamation Plan	Blue Star Gold Corp.
Waste Management Plan	Blue Star Gold Corp.
Soil Treatment Facility Management Plan	Blue Star Gold Corp.
Borrow and Quarry Management Plan	Blue Star Gold Corp.
Landfill Management Plan	Blue Star Gold Corp.
Wildlife Protection Plan	Environmental Dynamics Inc.
Interim Water Management Plan	Gartner Lee Ltd.
Mining Lease	Government of Canada
Mineral Exploration Agreement	Nunavut Tunngavik Incorporated
Screening Decision Reports	Nunavut Impact Review Board
Water Licences	Nunavut Water Board
Land Use Licence	Kitikmeot Inuit Association
Archaeology Permit	Government of Nunavut-Department of Culture and Heritage
Wildlife Research Permit	Government of Nunavut-Department of Environment
Scientific Research Licence	Nunavut Research Institute

1.1 SCOPE

This Plan applies to consideration of and interaction with environmental and heritage resources during all activities occurring in relation to the Project including camp operation, drilling, quarrying and fuel caching.

1.2 OBJECTIVES

At Blue Star, our personnel do what they can to protect environmental and heritage resources. Accordingly, the objectives of this plan are to:

- Ensure employees and contractors are aware of their responsibilities regarding protection of environmental and heritage resources;
- Outline appropriate mitigation measures for resource protection.

1.3 SITE DESCRIPTION

The Project is located approximately 200 km southeast of Kugluktuk, Nunavut (see Figure 1), and consists of existing Ulu site infrastructure, including a camp, roads, pads, and airstrip and underground mine development as well as a larger study area, including that previous defined as the Hood River Gold Project area, and regional exploration areas of interest; the majority of activities are based out of the Ulu camp and undertaken in the local vicinity. The site is accessible by air, utilizing the nearby existing airstrip or an adjacent lake. The site has historically been accessed by a winter trail and may be accessed overland in the future by the same route to support resupply.

The Project is located within the Southern Arctic Ecozone and the Takijuq Lake Upland Ecoregion. Much of this region is composed of unvegetated rock outcrops. Vegetative cover is characterized by shrub tundra, consisting of dwarf birch, willow, northern Labrador tea, avens species and blueberry species. Organic Cryosols are the dominant soils in the lowlands and permafrost is deep and continuous (ECCC 2019). Snow remains for more than 250 days a year, typically from September to June; average annual snowfall rarely exceeds 0.5m, most of which falls during autumn and spring storms (Cowley *et al* 2015).

1.4 PLAN MANAGEMENT

The Plan is reviewed annually by the Project Manager and updated as needed following receipt of or amendments to licences and permits, to ensure alignment with relevant terms and conditions. When material changes occur, the updated document will be provided to parties in accordance with the *Engagement Plan*.

1.5 PLAN IMPLEMENTATION

This Plan is effective upon approval and is valid throughout all phases of the Project.

The Project Manager or designate is responsible for Plan implementation.

A copy of this Plan is maintained on site in the Office.

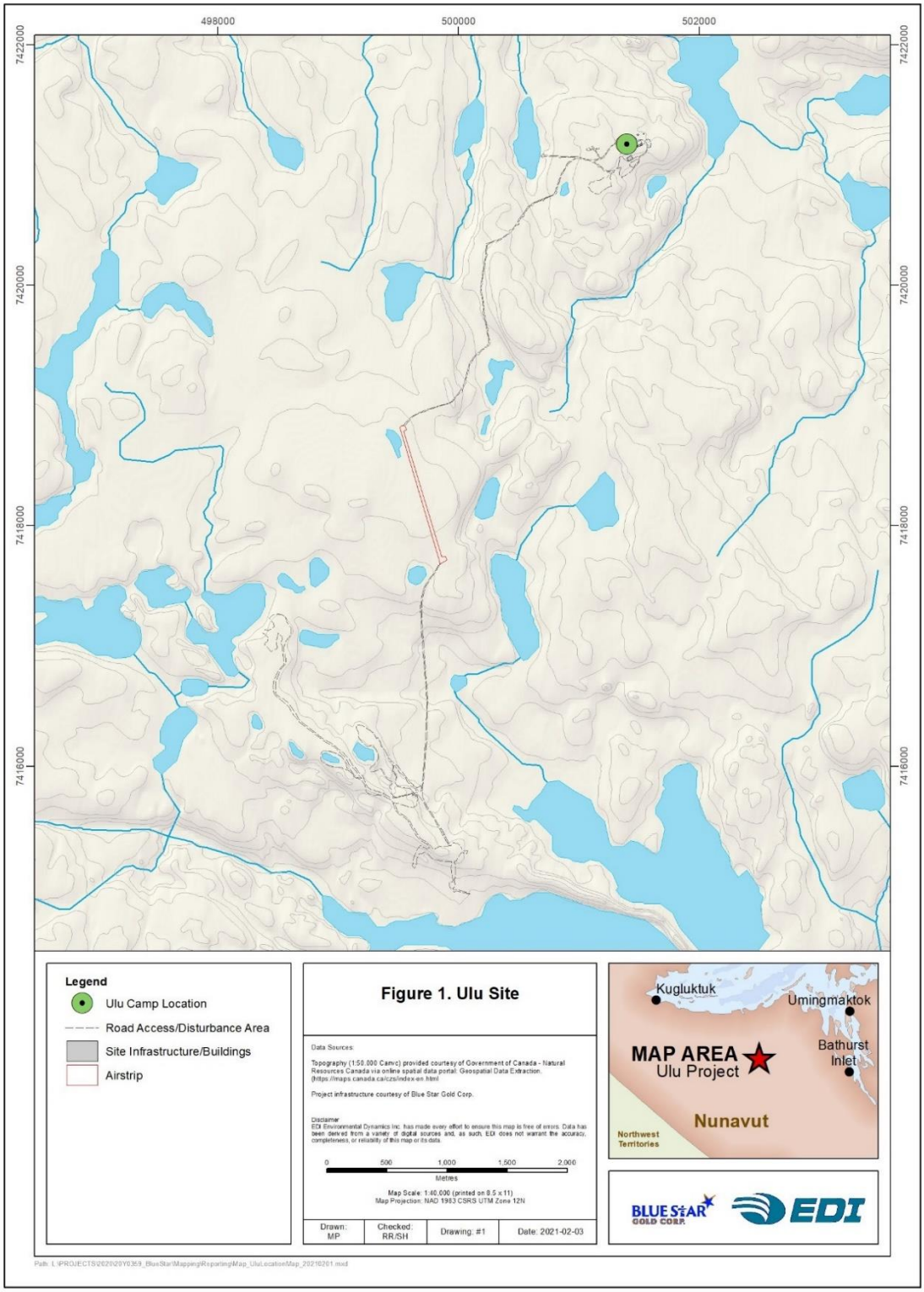

Figure 1 Ulu Gold Project location map.

2.0 ROLES AND RESPONSIBILITIES

Blue Star is responsible for activities associated with the Project, including implementation and management of this Plan. Blue Star's contact information is provided below.

Blue Star Gold Corp.
Suite 507-700 W. Pender Street
Vancouver BC V6C 1G8
Phone: 1 778-379-1433

Contact: Darren Lindsay, Vice President of Exploration
Phone: 1 778-379-1433
Email: d.lindsay@bluestargold.ca

2.1 STAFF, CONTRACTORS, SUPPLIERS AND VISITORS

All personnel conducting activities on site, including staff, contractors, suppliers and visitors, are required to implement this Plan as it pertains to their activities on site. Specifically, these responsibilities include:

- Taking all necessary steps to minimize negative effects to water, land and air;
- Cooperating fully with your supervisor and/or Blue Star management to implement an environmental protection program in your work area;
- Only carrying out duties and tasks that you are experienced at and trained to perform;
- Where there is uncertainty, asking questions and bring concerns to the attention of your supervisor when working with products or conducting tasks that may pose potential environmental risks;
- Maintaining confidential the location of found archaeological sites;
- Ensuring found archaeological sites remain undisturbed;
- Reporting wildlife observations, archaeological finds, spills and emergency situations in accordance with relevant management plans.

2.2 MANAGERS AND SUPERVISORS

Managers and supervisors have a responsibility to ensure that staff, contractors, consultants and visitors have been trained in Blue Star environmental and heritage resource protection expectations and procedures. Additional supervisor and manager responsibilities include:

- Maintaining a no blame work environment in implementing mitigation measures and follow-up actions;
- Ensuring site-, task- and material-specific training is provided to all departments and staff;
- Ensuring there are appropriate and sufficient supplies on site to support implementing mitigation measures and follow-up actions;
- Providing assistance in responding to environmental hazards;
- Maintaining confidential the location of known and found archaeological sites;
- Engaging the project archaeologist in accordance with this Plan;
- Maintaining records regarding inspections, personnel training, equipment testing and maintenance; and
- Engaging with relevant parties in a timely and transparent manner, where appropriate.

3.0 PHYSICAL RESOURCES

Protection measures pertaining to the physical environment are outlined below.

3.1 GROUND STABILITY

Ground stability can be affected through excavating, rutting or otherwise disrupting the tundra and permafrost, as well as quarrying. Negative effects to ground stability arising from project activities can be mitigated by:

- Limiting heavy equipment travel to existing constructed site surfaces to the greatest extent possible;
- Constructing a new camp on a durable surface;
- Moving equipment overland only when conditions are such that rutting or gouging of the tundra will not occur;
- Avoiding activities such as excavations that may result in permafrost degradation;
- Managing drill sites and cuttings sumps in accordance with the *Interim Closure and Reclamation Plan*;
- Inspecting engineered structures in accordance with water licence terms and conditions;
- Developing new quarries as close to existing infrastructure where possible, and developing these quarries under the guidance of a suitable professional.

3.2 PERMAFROST

Permafrost can be affected through facility construction and excavation. Negative effects to permafrost arising from project activities can be mitigated by:

- Constructing temporary facilities in such a manner as to support stability and limit ground thaw;
- Avoiding excavating in the ground for sumps to the greatest extent possible;
- Where an excavation is necessary, covering sumps during winter months to prevent snow accumulation;
- Capturing water at drill collars to the greatest extent possible to prevent thermokarst occurrence around the drill stem;
- Developing quarries and borrow areas in such as manner as to prevent an accumulation of standing water.

3.3 HYDROLOGY

Hydrology can be affected through unapproved water use that may occur in relation to camp operation, drilling, or dust control. Hydrologic effects are mitigated through compliant water use, in accordance with the Nunavut Water Board licences, and maximizing water reuse during drilling.

3.4 WATER QUALITY

Water quality can be affected by unplanned or non-compliant discharges to the aquatic environment. Negative effects to water quality can be mitigated by:

- Employing best drilling practices;
- Managing drill sites in accordance with the *Interim Closure and Reclamation Plan*;
- Using only inert drilling fluids during on ice drilling;
- Adhering to the *Spill Response Plan* where required;
- Implementing erosion control where necessary, to prevent sediment from entering any waterbody;
- Monitoring site water and run-off in accordance with the water licences and the approved *Interim Water Management Plan*;
- Depositing inert drill water in a suitable sized upland sump, greater than 31 m above the high water mark of any watercourse; and
- Discharging grey water and other effluents in accordance with water licence terms and conditions;
- Disposing of non-hazardous waste in an authorized engineered landfill, designed with appropriate cover to minimize water ingress and erosion
- Operating and closing facilities in accordance with engineered design parameters.

3.5 SEDIMENT AND SOIL QUALITY

Sediment and soil quality can be affected by historic activities on site, poor drilling practices and an unplanned release of a material to the ground. Negative effects to soil and sediment quality can be mitigated by:

- Employing best drilling practices;
- Managing drill sites in accordance with the *Interim Closure and Reclamation Plan*;
- Storing drilling related materials in accordance with the *Spill Response Plan*;
- Using only inert drilling fluids during on ice drilling;
- Containing and treating hydrocarbon-contaminated soils in an authorized on site facility
- Activating the *Spill Response Plan* as required.

3.6 AIR QUALITY

Air quality can be affected through emissions from incineration, open burning and equipment operation. Negative effects to air quality arising from project activities can be mitigated by:

- Incinerating camp wastes in compliance with the *Canada Wide Standards for Dioxins and Furans and Mercury* (CCME 2001);
- Open burning only clean wood and paper products that are too large to be incinerated;
- Avoiding incineration of waste oil/grease;
- Conducting routine and preventative maintenance on generators and engines;
- Using alternative, low emission fuels where feasible.

3.7 NOISE

Ambient noise levels can be affected by operation of Project equipment such as generators, helicopters, fixed wing aircraft, heavy and light equipment. Negative effects to noise levels can be mitigated by:

- Conducting routine and preventative maintenance on generators and engines;
- Ensuring mufflers are in use, as required by manufacturers;
- Using quieter alternative equipment where possible; and
- Adhering to the *Wildlife Protection Plan*.

4.0 BIOLOGICAL RESOURCES

Protection measures pertaining to vegetation and aquatic life are outlined below.

Refer the *Wildlife Protection Plan* for general and species-specific wildlife protection measures.

4.1 VEGETATION

Vegetation can be affected by on land activities such a site access, airstrip expansion, camp operation, quarry establishment and drill movement. Negative effects to vegetation can be mitigated by:

- Employing best drilling practices including
    - Establishing drill sites on durable surfaces;
    - Minimizing salt use during diamond drilling where possible;
    - Minimizing drill water discharge to tundra to the greatest extent possible during diamond drilling;
    - Depositing inert drill water in a suitable sized upland sump.
    - Managing drill sites in accordance with the *Interim Closure and Reclamation Plan*;
- Constructing a new temporary camp on a durable surface, that has been previously disturbed, if possible;
- Limiting heavy equipment travel to existing constructed site surfaces;
- Moving equipment overland only when conditions are such that rutting or gouging the tundra will not occur;
- Assessing the footprint of expansion areas, such as an airstrip extension or new quarry, for rare plants, and amending design as required to the greatest extent possible; and
- Adhering to the *Spill Response Plan* where required.

4.2 AQUATIC LIFE

Aquatic life, such as fish, may be affected by Project activities such a site access, camp operation, quarry establishment, drilling and reclamation. Negative effects to aquatic life can be mitigated by:

- Employing best drilling practices;
- Managing drill sites in accordance with the *Interim Closure and Reclamation Plan*;
- Using only inert drilling fluids during on ice drilling;
- Activating the *Spill Response Plan* where required;
- Implementing erosion control where necessary, to prevent sediment from entering any waterbody;
- Monitoring site water and run-off in accordance with the water licences and the approved *Interim Water Management Plan*;
- Depositing inert drill water in a suitable sized upland sump, greater than 31 m above the high water mark of any watercourse; and
- Discharging grey water and other effluents in accordance with water licence terms and conditions;
- Using water in accordance with water licence terms and conditions;
- Conducting any blasting associated with quarry development in accordance with Wright and Hopky (1998) or other guidance as provided by DFO.

5.0 HERITAGE RESOURCES

Heritage resources can be affected by on land activities such a site access, camp operation, prospecting, drill movement, airstrip expansion, quarry establishment and winter trail use. Potential negative effects to heritage resources can be mitigated by:

- Conducting an archaeological assessment prior to program commencement in new undisturbed areas;
- Minimizing land disturbance outside of existing site infrastructure and drill sites;
- Avoiding construction of new inukshuks or rock piles unless otherwise approved;
- Where possible, avoiding interaction with and disturbance of known or suspected archaeological sites, including rocks that may appear to be in some formation;
- Where not possible to avoid interaction with known archaeological sites, proceed with direction from the project archaeologist and Territorial Archaeologist;
- If a suspected archaeological site or human remains (structures, artifacts or bones) are encountered during the Program, immediately stopping work in the vicinity and notifying the Project Manager who will notify the Territorial Archaeologist and project archaeologist;
- Maintaining a 30 m buffer around all known or suspected archaeological sites, unless otherwise approved; and
- Keeping confidential the location of known and found archaeological sites.

6.0 TRAINING

All attendees to site participate in a site orientation which outlines environmental and heritage resources that may be encountered over the course of the Program and identifies personnel roles and responsibilities regarding protection of these resources.

Wildlife-specific roles and responsibilities are outlined in the *Wildlife Protection Plan*.

Any activities undertaken on site in relation to archaeological surveys, finds or mitigations are done so by or under the direction of the project archaeologist.

7.0 REPORTING AND DOCUMENTATION

7.1 REPORTING

Reporting will occur in accordance with regulatory requirements and the *Engagement Plan*.

7.2 DOCUMENTATION

Documentation supporting protection of environmental and heritage resources includes:

- Maintaining equipment preventative maintenance logs and required follow-up actions on site;
- Documenting water use and waste disposal in accordance with the water licences;
- Logging wildlife observations;
- Maintaining a layer in the Project GIS system that identifies:
    - Watercourses suitable for, and those previously used for, water withdrawal;
    - Known archaeological sites surrounded by a 30 m buffer, the location of which is to be kept confidential, considered and avoided in future drill program planning;
    - Key habitat features such as dens and nests, the location of which is to be considered and avoided in future drill program planning;
    - Drill cuttings sumps;
    - New project footprint area such as that related to an expansion of the airstrip or establishment of new quarries.

8.0 REFERENCES

Nunavut Act S.C. 1993, c.28
Nunavut Archaeological and Palaeontological Sites Regulations SOR/2001-220

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