



Nunavut Impact Review Board 2019 Site Update Report

Back River Gold Mine Project

Sabina Gold and Silver Corporation

NIRB File No. 12MN036



Photos Courtesy of Sabina Gold and Silver Corp. 2019

October
2019

Full Report Title: The 2019 Site Update Report for the Nunavut Impact Review Board's Monitoring of the Back River Gold Mine Project (NIRB File No. 12MN036)

Project: Back River Gold Mine Project
Project Location: Kitikmeot Region, Nunavut

NIRB File No.: 12MN036
Back River Gold Mine Project Certificate No. 007

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Pictures in Report: Courtesy of Sabina Gold and Silver Corporation

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1.0 Introduction

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and is responsible for post environmental assessment monitoring of a Project in accordance with Part 7 of Article 12 of the *Nunavut Agreement*.

In accordance with sections 12.7.1 and 12.7.2 of the *Nunavut Agreement* as well as the Project Certificate No. 007, the NIRB is responsible for the establishment of a monitoring program for the Project, which includes conducting periodic site visits. The objective of the NIRB's site visits are to determine whether, and to what extent, the land or resource use in question is being carried out within the predetermined terms and conditions of the NIRB's Project Certificate issued for the Back River Gold Mine Project, in accordance with (*Nunavut Agreement*, Subsection 12.7.2(b)) as outlined in the NIRB Project Certificate.

The NIRB Monitoring Officer was unable to conduct a site visit in 2019 due to operational constraints and therefore was unable to visually inspect activities occurring related to the project and assess compliance to the requirements of the Back River Project Certificate. Therefore, to ensure parties are kept up to date at site, the NIRB has developed a Site Update Report based on discussions, updates, and photos provided by the Proponent. This update will form a part of the NIRB's monitoring program.

1.1 Back River Gold Mine Project History and Current Status

On December 19, 2017 pursuant to Section 12.5.12, Article 12 of the *Nunavut Agreement*, the NIRB issued Project Certificate No. 007 for Sabina Gold and Silver Corp.'s Back River Gold Mine Project. On March 13, 2018 Sabina received Type "B" Water License No. 2BC-BRP1819 from Nunavut Water Board (NWB) which allowed for identified Initial Development Works to commence at both the Goose Property and Marine Laydown Area. In April 2018, Sabina and the Kitikmeot Inuit Association (KIA) entered into a land tenure and Inuit Impact Benefit Agreement. On November 14, 2019 Sabina received its Type "A" Water License which allows for the construction and operation activities at the Project. For further information on the site history, please see [Appendix I](#).

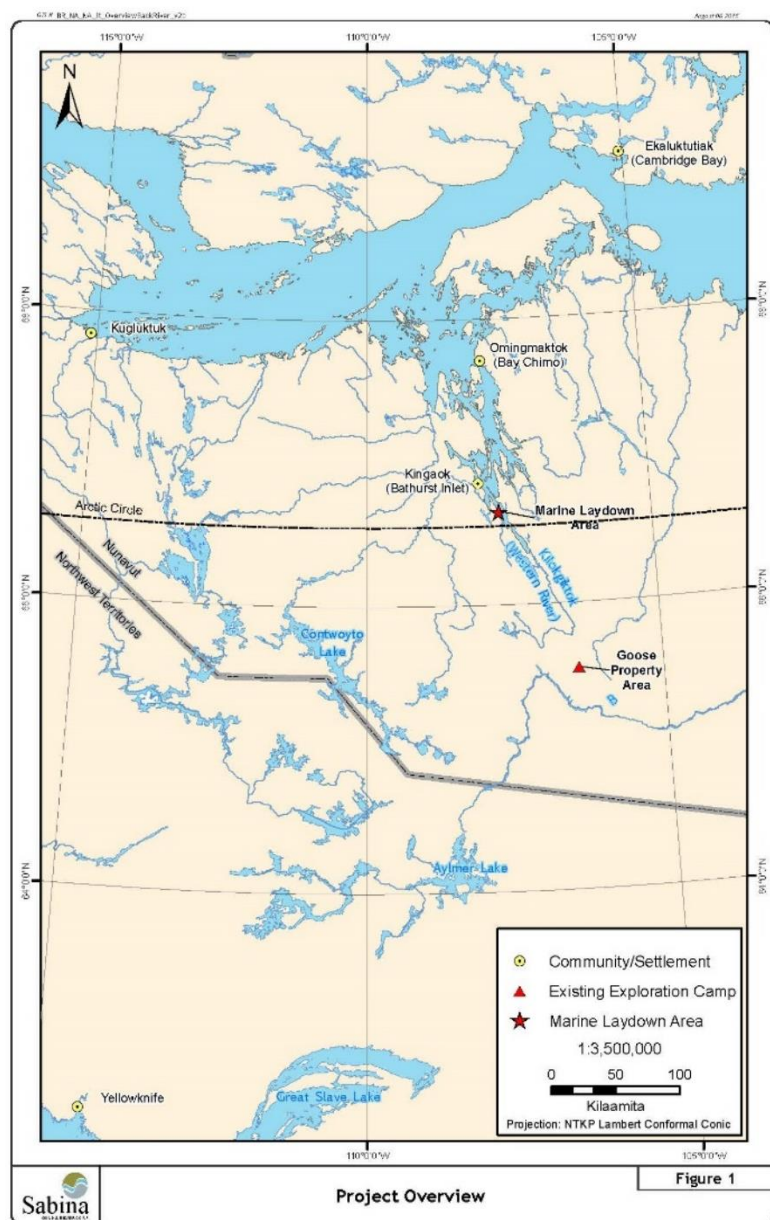
In 2018 Sabina focused on pre-development infrastructure activities at the site. At the Marine Laydown Area (MLA) work was focused on earthworks and the initial commissioning of the site. Two (2) of three (3) cargo sealifts were received and materials were stored for hauling down the Winter Ice Road (WIR). At the Goose Property, the quarry was expanded, including the initial road and bridge construction and a targeted exploration program was also carried out. In December 2018 Sabina commenced construction of the WIR which was closed on May 9, 2019 having transported 70 loads between the MLA and Goose Property. During the winter an ice airstrip constructed at the MLA to bring in equipment and supplies via Hercules and other aircraft.

In 2019 pre-development works continued at the MLA with the construction of a ten (10) million litre (L) fuel tank and a 500,000 L fuel tank. The sealift was also received in August 2019 and materials are being stored for transportation down the WIR. Operations at the Goose Property resumed on March 26th, 2019

with initial development works including an exploration program similar to previous years, a trenching program, ongoing environmental monitoring and baseline programs and ongoing geotechnical drilling occurred at key infrastructure sites.

All documentation associated with the Back River Project is available online from the NIRB's public registry at <http://www.nirb.ca/project/124129>.

1.2 Back River Project Components



The Back River Gold Mine Project (NIRB File No. 12MN036; the Back River Project or the Project) consists of the proposed mobilization, construction, operation, closure, reclamation, and post-closure monitoring of a gold mine operation in the Kitikmeot region of Nunavut. The Project is located approximately 400 kilometres (km) southwest of the community of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories. The proponent for the Back River Project is Sabina Gold & Silver Corp. (the Proponent or Sabina). The Back River Project includes two (2) main development areas with a winter ice road interconnecting the Goose Property with the Marine Laydown Area (MLA), which would be located at Bathurst Inlet.

Figure 1: Project Overview Map

1.2.1 Goose Property

The Goose Property will comprise of a processing plant, four (4) deposits (Umwelt, Llama, Echo, and Goose Main) to be mined through open and underground mining methods; an all-weather air strip; a camp facility; and associated mining facilities. Ore mined at the Goose Property would be hauled to ore stockpiles located at the Goose Site where the ore would be processed within an ore processing plant (mill) using conventional gravity concentration and cyanidation techniques at approximately 6,000 tonnes of ore per day. A tailings storage facility would be built south-southeast of the Goose Main open pit for tailings deposition during the first two (2) years of production, with tailings then to be directly deposited into the mined-out Umwelt open pit and then into the mined-out Goose Main open pit for the remaining mine life. The gold doré bars produced at the processing plant would be stored on-site and then transported off-site by aircraft on a semi-weekly basis.

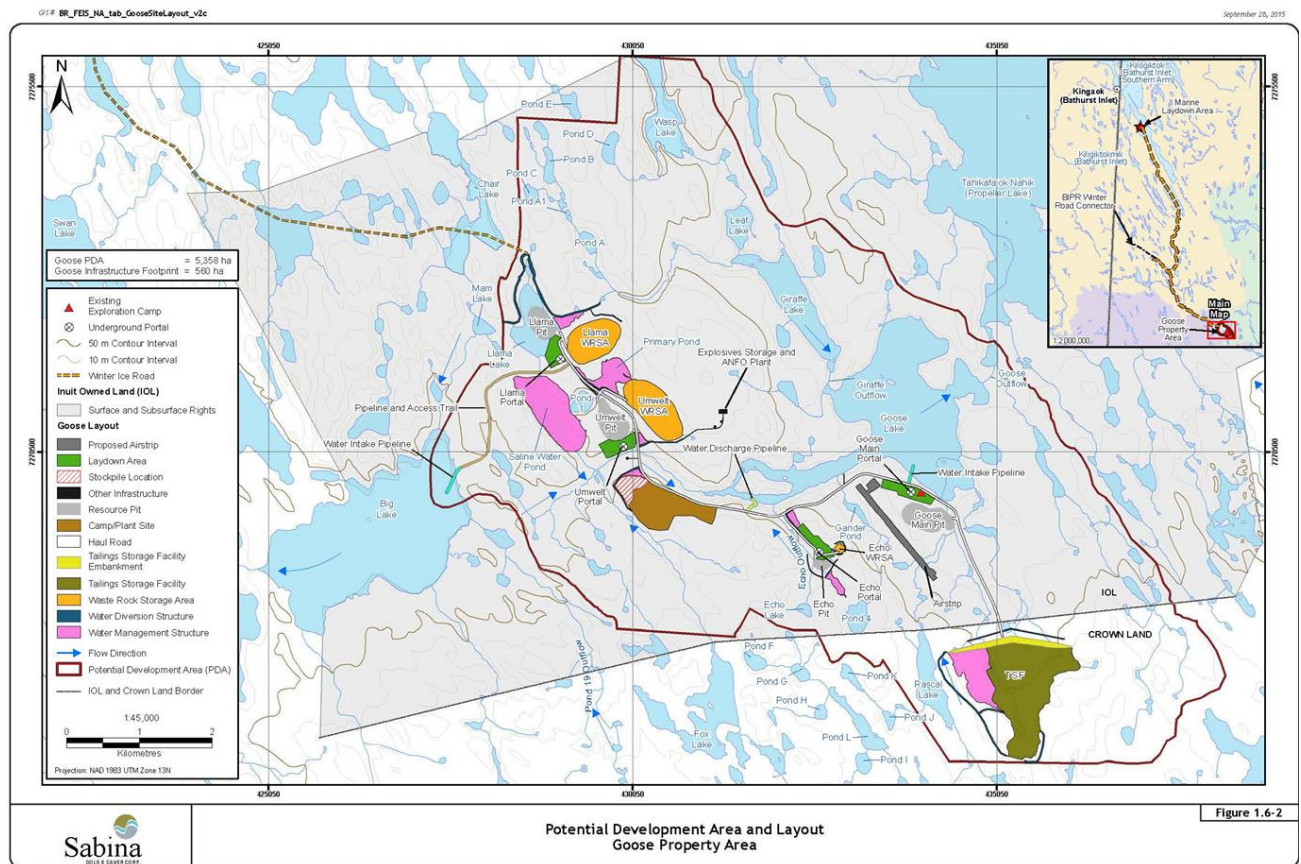


Figure 2: Potential Development of Goose Property Area

1.2.2 Marine Laydown Area-

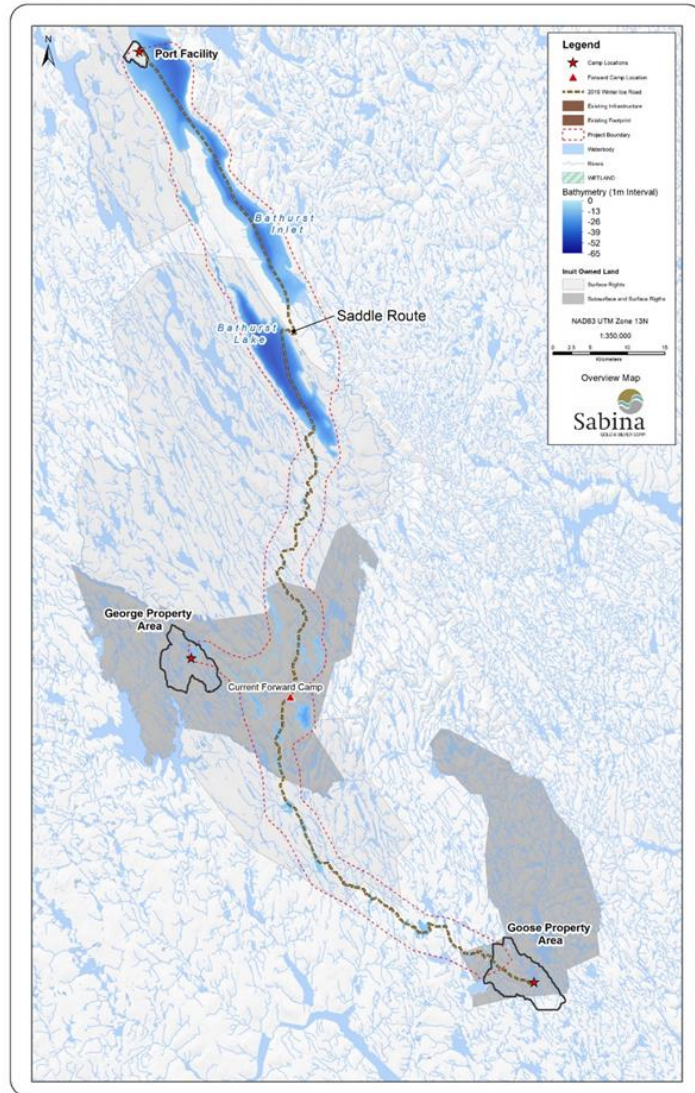


Figure 3: Winter Ice Road Corridor Between MLA and Goose Property

1.2.3 George Property

The George Property is an advanced exploration camp located approximately 50 km northwest of Goose Property and Sabina may construct an annual spur road from the winter ice road to the George Property for transportation of supplies. The continuation of a diamond drilling based mineral exploration program for the George Property and the Wishbone claim of mineral leases was included within the scope of the Board's assessment for the Back River Project. It should be noted that further advanced exploration (i.e., bulk sampling and infrastructure development) was not included in the Project with the understanding that such activities would require further assessment by the NIRB prior to occurring.

2.0 2019 Site Update

As previously stated, the NIRB Monitoring Officer was unable to conduct a site visit in 2019 due to operational constraints and therefore was unable to visually inspect activities occurring related to the Project and assess compliance to the requirements of the Back River Project Certificate.

The following sections briefly describe the major components and activities of the Back River Project in 2019. Where applicable, the Monitoring Officer has noted compliance with specific terms and conditions of the Project Certificate.

2.1 Goose Property

The Goose Property encompasses four (4) mineral deposits: Umwelt, Llama, Echo, and Goose Main, which would all be accessed using conventional open pit and underground methods. On March 26th, 2019 Sabina resumed seasonal operations at the Goose Property with initial development works including: an exploration program similar to previous years: a trenching program: ongoing environmental monitoring and baseline programs: and ongoing geotechnical drilling at key infrastructure sites. Equipment received during the previous year on the barge was also transported from the MLA to the Goose Lake Camp and was stored along the airstrip (Photo 3). The Goose Lake Camp currently consists of office buildings, sleeping accommodations, washroom (dry), kitchen, medical facility, core tent, maintenance facilities, storage facilities, laydown areas, and other associated infrastructure (Photo 1) with no construction on approved site infrastructure during 2019.



Photo 1: Goose Lake Camp



Photo 2: Bridge across Gander Creek



Photo 3: Equipment storage along airstrip from WIR season



Photo 4: Airstrip at Goose Lake Camp

2.1.1 Trenching Program

Exploration continued at the Goose Main site with the completion of a spring trenching program. The primary objective of the trenching program was to uncover, examine, and sample the bedrock exposure within the proposed open pit area of the Goose Main deposit. The excavation was approximately 75-100 metres (m) long and 25 m wide by 3 m depth. The trenching program was completed July 12, 2019 and August 8, 2019 and at the end of the program the trench was infilled and recontoured.



Photo 5: Trench Program Location



Photo 6: Exposing the bedrock in Goose Main Trench



Photo 7: Goose Main Trench



Photo 8: Backfilled Trench

2.1.2 Environmental Monitoring

Environmental studies that are occurring on site to date included:

- Archeology Program
- Hydrological Monitoring
- Fisheries Program
- Freshwater Quality
- Marine Water Quality
- Vegetation Program
- Wildlife Program
- Meteorological studies



Photo 9: Monitoring at Bridge Crossing



Photo 10: Aquatic Effects Monitoring Program



Photo 13: Meteorological Monitoring



Photo 12: Wildlife Camera Testing



Photo 11: Caribou at MLA

2.2 Marine Laydown Area

In 2018 at the Marine Laydown Area (MLA) work was focused on earthworks and the initial commissioning of the site. Two (2) of three (3) cargo sealifts were received and materials were stored for hauling down the Winter Ice Road (WIR). During the winter, equipment needed to build the WIR as well as other prioritized materials and supplies that had been on the third sealift were instead mobilized to site via 737, a Hercules and other aircraft using an ice strip on Bathurst Inlet (Photo 14 and Photo 15).



Photo 14: Unloading 737 on the MLA ice airstrip



Photo 15: Tukker being unloaded from Hercules



Photo 16: MLA Camp Winter 2019



Photo 17: Incinerator at MLA



Photo 18: Camp at MLA

2.2.1 Bulk Fuel Storage

Bulk diesel fuel is currently contained at the MLA in 30,000 L double walled enviro tanks within Insta-berms (Photo 19). In 2019 Sabina began constructing the permanent bulk fuel tank facility (Photo 20 and Photo 21) including a ten (10) million litre (L) fuel tank and a 500,000 L fuel tank. Sabina has yet to construct the stand-alone bulk fuel pipeline and small vehicle access road required to transfer fuel from the fuel barge to the fuel tanks.



Photo 19: Fuel Tanks at MLA



Photo 20: MLA Bulk Tank Liner



Photo 21: MLA Bulk Fuel Tank August 8, 2019

2.2.2 Sealift

Sabina received their sealift in August 2019 and materials are being stored at the MLA for transportation via the WIR.



Photo 22: Sealift



Photo 23: Offloading from Sealift at MLA

2.3 Winter Ice Road

In December 2018 Sabina began construction of their first Winter Ice Road (WIR). Construction on the road was slow until mid-January when the missing WIR equipment was delivered. Many additional challenges were encountered during the first year of construction of the WIR including routing, snow depth, water requirements, severe weather conditions and equipment limitations.

Sabina had intended to construct and operate the road between December and April 15; however, due to construction challenges the WIR was required to be open after the April 15, 2019 deadline. Therefore, as per the Wildlife Mitigation and Monitoring Program Plan, Sabina informed the Government of Nunavut (GN) and the Kitikmeot Inuit Association (KIA) and additional monitoring and mitigation measures were put in place to protect caribou (see [Section 2.3.1](#)). The WIR operated until May 9, 2019 and in total 70 loads were successfully transported between the MLA and the Goose Property.



Photo 24: Early construction: WIR looking North



Photo 25: Packing Saddle Crossing: First Section of overland WIR



Photo 26: Forward Camp



Photo 27: Constructing the WIR



Photo 28: Watering the WIR



Photo 29: Construction of WIR



Photo 30: Truck hauling drill rig

2.3.1 Caribou Protection Measures

On March 29, 2019 Sabina noted in correspondence to the GN and KIA that *“Sabina constructs and operates the WIR to ensure caribou can cross the road if they chose. Sabina also ensures that mitigation is in place for caribou present on the road or in close proximity to the road. This includes managing snow banks and vehicles to allow caribou to cross the road as well as speed restrictions.”*

Sabina also put in place additional monitoring and mitigation as outlined in their Wildlife Mitigation and Monitoring Plan (WWMP). In order to ensure that these commitments were met, from April 15, 2019 to early May, Sabina also hired a Wildlife Monitor to conduct regular surveys along the WIR to identify caribou and ensure that site personnel were following the required mitigation measures. The Wildlife Monitor travelled the WIR daily following Sabina’s Caribou Protection Measures, sometimes traversing the entire route or focusing on areas where caribou were observed. The Wildlife Monitor captured video and photos and took notes of their observations. It is estimated that approximately 10,000 caribou were observed adjacent to and/or crossed the road. They were generally in small groups of up to a few thousand caribou at one time. Other species observed on the WIR included wolf and moose.



Photo 31: Caribou crossing the WIR

On April 18, 2019 the GN responded and requested that *“Sabina produce a short report on the road operations, including an analysis of caribou movements during the period of April 15th to the end of the winter road operations. This report should examine the overlap between road operations and caribou migratory movements in-order to determine whether significant interactions occurred and detail the mitigation measures that were employed by Sabina to reduce potential adverse effects.”* It was also recommended the report be provided to the Caribou Technical Advisory group for review and discussion and a final copy to the NIRB.

3.0 Observations based on NIRB’s Project Certificate No. 007

Due to the early stage of development of the Back River Gold Mine Project, it is noted that some terms and conditions as contained within Project Certificate No. 007 may not be applicable for this monitoring period and/or have not yet been thoroughly implemented at this time by Sabina.

3.1 Vegetation

During the 2018 site visit the Monitoring Officer observed some damage (tracks) had occurred on the tundra near the Goose Lake Quarry and at the MLA from the shore to the camp area as well as at some additional areas at the MLA site. Sabina staff noted at the time that these areas are to be repaired and monitored as part of the vegetation monitoring program being established. Sabina staff also noted that they would be developing as part of their Vegetation Monitoring Plan a revegetation and reclamation strategy to maximize revegetation to the damaged areas on the tundra.

In 2019 the Proponent has provided photos of the track that show that the vegetation in this area is recovering naturally.



Photo 32: 2018 Damage to tundra MLA



Photo 33: 2019 Natural Recovery of Tundra
(note looking opposite direction)

4.0 Public Information Session

Pursuant to the *Nunavut Agreement* and the Back River Gold Mine Project Certificate No. 007; the NIRB monitoring responsibilities include providing periodic updates regarding its Monitoring Program for the communities most affected by the Back River Gold Mine Project. To further ensure ongoing awareness of Project-specific terms and conditions, and encourage effective participation throughout the Board's monitoring process, the NIRB scheduled a community information session in Cambridge Bay on August 29, 2019 in conjunction with the update for the Doris North Gold Mine Project (05MN047), Phase 2 Hope Bay Belt Project (12MN001), and the Jericho Diamond Mine Project (00MN059).

For a summary of the NIRB's public information session and questions that were asked, please refer to [Appendix II](#). These comments help the Board identify items that need to be addressed or considered throughout the NIRB's monitoring program for the Back River Gold Mine Project.

5.0 Conclusions

Although the Proponent has provided information updates and photos not conducting a site visit does limit NIRB's ability to monitor the site effectively. While the site is in pre-construction it is important to see the ongoing changes and activities at the mine site while they are in operation including the winter ice road and the Marine Laydown Area. For the 2019-2020 monitoring year it is essential that the NIRB monitoring officer be able to visit the site, particularly during the construction/operation phase of the winter ice road from the Marine Laydown Area.

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Title: Technical Advisor II
Date: October 1, 2019
Signature:



Reviewed by: Kelli Gillard PAg
Title: Manager, Project Monitoring
Date: October 1, 2019
Signature:



APPENDIX1: SITE HISTORY

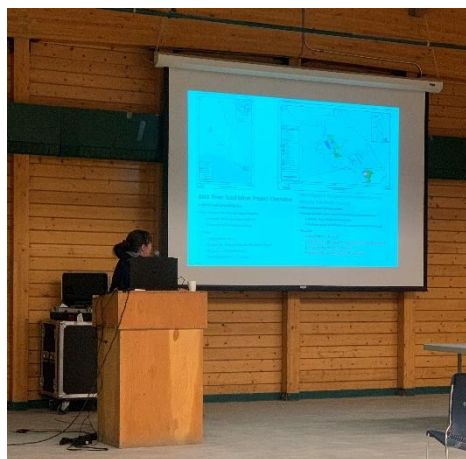
Table 1: Back River Gold Mine History

Date	Activity Undertaken
December 19, 2017	The NIRB issued Project Certificate No. 007 and Sabina applied for authorizations to commence construction of the mine.
March 13, 2019	Sabina received Type “B” Water License No. 2BC-BRP1819 from the Nunavut Water Board which allowed Initial Development works to commence at both the Goose Property and the Marine Laydown Area
April 2018	Sabina and the Kitikmeot Inuit Association enter into a land tenure and Inuit Impact Benefit Agreement.
April 2018	Pre-development commenced at MLA including construction of 40person camp, earthworks, airstrip, laydown storage areas. At Goose site, commencement of earthworks; including quarry expansion, heavy equipment upgrades and initial road and bridge construction.
August 14 to 16, 2018	NIRB site visit conducted
November 14, 2019	Sabina received its Type “A” Water License which allows for the construction and operation of the mine activities.
December 2018 to May 9, 2019	Winter Ice Road Constructed and Operated
Summer 2019	NIRB unable to conduct site visit due to operational constraints

APPENDIX II: NIRB PUBLIC INFORMATION MEETING

To further ensure ongoing awareness of Project-specific terms and conditions, and encourage effective participation throughout the Board's monitoring process, the NIRB scheduled a community information session for TMAC's Doris North Gold Mine Project (05MN047) and Phase 2 Hope Bay Belt Project (12MN001), Sabina's Back River Project (12MN036) and an update on the Jericho Diamond Mine (00MN059) site stabilization and remediation activities. The sessions consisted of an afternoon open house (2:00-4:00pm) and an evening update meeting (7:00pm-9:00pm) at the Luke Noviligak Community Hall in Cambridge Bay on August 29, 2019 and were open to all members of the public. Refreshments and snacks were provided.

All in attendance, including government, industry representatives and media, were asked to sign in and identify the community or organization they represented. The afternoon session recorded attendance of 3 people and the evening session 5 people. Consecutive interpretation was available in Inuinnaqtun. The NIRB Staff in attendance included Jaida Ohokannoak, Technical Advisor II/Monitoring Officer for the Back River Project and Jericho, Keith Morrison, Technical Advisor II/Monitoring Officer for Doris North and Phase 2 Hope Bay, Kelli Gillard, Manager Project Monitoring and Francis Emingak, Jr. Technical Advisor.



The NIRB Monitoring Officers made PowerPoint presentations for each Project providing a general update of the NIRB's Monitoring Process, with a focus on update on the project, including an overview of project activities and key components, and issues identified through the project specific monitoring programs. The presentation also outlined the ways in which the public can participate in the Board's monitoring process. The public was encouraged to comment and ask questions relating to the NIRB's process, activities undertaken, project effects, and any concerns related to the Project. Both written and verbal comments were accepted and verbal comments were recorded by NIRB staff members.

1.1 Meeting Materials

At the public meeting, the following materials were provided by the NIRB:

- The NIRB's PowerPoint presentation (in English and Inuinnaqtun)
- Comment Forms (in English and Inuinnaqtun)

All document received and pertaining to this project, including copies of consultation materials, the presentation, advertisements and sign-in sheets, can be accessed from the NIRB's online public registry at:

Doris North Gold Mine: www.nirb.ca/project/123632

Phase 2 Hope Bay: www.nirb.ca/project/124148

Back River Project: www.nirb.ca/project/124149.

Jericho Diamond Mine: www.nirb.ca/project/123035

1.2 Advertisements

The NIRB advertised the meeting through radio, poster, and online through Facebook in Cambridge Bay both in English and Inuktitut in the month prior to the meeting.

1.3 Meeting Notes

The following sections summarize the comments and concerns that were raised both verbally and in writing at the community information sessions. The comments help the Board identify items that need to be addressed or considered throughout the NIRB's monitoring program for each.

Doris North / Hope Bay Belt

General:

- Why does Phase 2 Hope Bay Belt Project have more terms and conditions?
- What is the NIRB website?

Operations:

- How deep is the crown pillar at Madrid?
- Will Windy Lake Camp be opening again?
- Are they shutting down the road to Windy Camp?
- What was the Windy Lake Camp?

Wildlife:

- What did they do to prevent small animals from getting stuck in the sumps?
- Were any caribou seen in the area?

Back River Gold Mine

Wildlife:

- Were there other caribou seen around camp or in the area of the mine?

Closure:

- When the mine is shut down, is there a requirement to make the mine look like it was never there? Is there a plan?

Socio-Economic

- Inuit employment numbers should be increased.
- Sabina should have Inuit people who have worked in the mines do presentations in schools.

Jericho Diamond Mine

Water Management:

- Are the kimberlite tailings filled with water?
- What do you mean by cutting a hole (breaching) the dam?
- Are they testing the water in the Open Pit?

General:

- Where was the waste shipped to?
- Is the Kitikmeot Inuit Association (KIA) going to clean up Inuit Owned Land?
- Will KIA be monitoring the waste rock piles for Acid Rock Drainage?
- Are the barrels being left on site?
- Was money put aside to clean up the site?
- Would like to see elders be brought to the site for monitoring.