Nunavut Impact Review Board
Pre-hearing Conference Decision
Concerning the Back River Project (NIRB File No. 12MN036)
Proposed by
Sabina Gold & Silver Corporation

Date of Pre-hearing Conference: November 17-19, 2014

Date of Decision: December 19, 2014

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Table of Contents

Table of Contents 3
List of Tables 4
List of Figures 4
List of Acronyms 5
Executive Summary 6
ᓇᐃᓚᒋᐊᖅᑕᐅᓯᒪᔨᖅ ᑐᓴᐅᒪᓕᖅᓴᖅ 8
1. Background 11
1.1 Procedural History 12
1.2 Project Description Overview 15
1.1.1 Goose Property 16
1.1.2 George Property 16
1.1.3 Marine Laydown Area 16
2. Summary of Submissions from Parties 18
2.1 Kitikmeot Inuit Association (KIA) 18
2.2 Government of Nunavut (GN) 19
2.3 Aboriginal Affairs and Northern Development Canada (AANDC) 20
2.4 Environment Canada (EC) 21
2.5 Fisheries and Oceans Canada (DFO) 22
2.6 Natural Resources Canada (NRCan) 22
2.7 Transport Canada (TC) 23
2.8 Government of the Northwest Territories (GNWT) 24
2.9 Communities of Bathurst Inlet, Bay Chimo, Cambridge Bay, Gjoa Haven, Kugluktuk, Kugaaruk, Taloyoak and Gameti, Lutselk'e, Whati, and Wekweeti 26
2.10 Submissions by Other Parties 34
2.11 Summary of Proponent's Response 35
2.12 Parties' Submissions on Procedural Issues 36
3. Nunavut Impact Review Board Analysis & Decision 40
3.1 Issues to be decided 40
3.2 Jurisdiction of the Board 40
3.3 Issues 40

3.3.1 Anticipated date for submission of the Final Environmental Impact Statement 41
3.3.2 Date, time and location of the Final Hearing 41
3.3.3 Timetable for the exchange of documents and information requests prior to the hearing 42
3.3.4 Formulation of issues for the hearing 43
3.3.5 Procedures to be followed for the hearing 47
3.3.6 Equipment, language, interpretation, translation and transcript requirements 47
3.3.7 Other matters that aid in the simplification of the hearing 47
4. Coordinated Process 48
4.1 Nunavut Water Board 48
5. Conclusions of the Board 48

List of Appendices

Appendix 1: Commitments from Technical Meeting and Pre-hearing Conference 51
Appendix 2: Sabina's Commitment List based on Technical Review Comments [November 2, 2014] 52
Appendix 3: Nunavut Water Board Technical Review Submission regarding Sabina's Draft Environmental Impact Statement 85

List of Tables

Table 1.0: Summary of Key Issues Raised During Community Roundtable 27

List of Figures

Figure 1 - location of the proposed Back River Gold Mine site 17

List of Acronyms

AANDC - Aboriginal Affairs and Northern Development Canada
ASPPR - Arctic Shipping Pollution Prevention Regulations
AWAR - All Weather Road/All Weather Access Road
DEIS - Draft Environmental Impact Statement
DFO - Fisheries and Oceans Canada
EC - Environment Canada
EIS - Environmental Impact Statement
FEIS - Final Environmental Impact Statement
GN - Government of Nunavut
GNWT - Government of the Northwest Territories
HTO - Hunters and Trappers Organization
IIBA - Inuit Impact Benefit Agreement
IR - Information Request
KIA - Kitikmeot Inuit Association
LKDFN - Lutsel K'e Dene First Nation
NIRB - Nunavut Impact Review Board
NLCA - Nunavut Land Claims Agreement
NPC - Nunavut Planning Commission
NRCan - Natural Resources Canada
NSA - Nunavut Settlement Area
NTI - Nunavut Tunngavik Incorporated
NWB - Nunavut Water Board
OPEP - Oil Pollution Emergency Plan
PHC - Pre-hearing Conference
TC - Transport Canada
VEC - Valued Ecosystem Component
VSEC - Valued Socio-Economic Component
YKDFN - Yellowknives Dene First Nation

Executive Summary

In accordance with the mandate and objectives of the Nunavut Impact Review Board (NIRB or Board) established under Article 12 of the *Nunavut Land Claims Agreement* (NLCA) the NIRB recently concluded the technical review and pre-hearing conference stages of the Board's assessment of the potential ecosystemic and socio-economic effects of the Sabina Gold and Silver Corporation's (Sabina or the Proponent) Back River Project Proposal (NIRB File No. 12MN026) (the Project). This part of the Board's review of the Project involved the following steps (as outlined below and discussed in more detail in the sections that follow):

- The discussion at Technical Meetings held in Cambridge Bay on November 13, 14 and 15, 2014 of technical review comments provided by various intervenors on the *Draft* Environmental Impact Statement (DEIS) filed by the Proponent with the Board on January 20, 2014;
- The further consideration of the DEIS and the Project in general during Community Roundtable Sessions hosted by the Board in Cambridge Bay on November 17 and 18, 2014 with the participation of members of the public and designated community representatives from the communities in the Kitikmeot Region and the Northwest Territories most likely to be affected by the Project; and
- A Pre-hearing Conference held by the Board on November 19, 2014 to discuss the process and procedure leading to the Proponent's submission of a Final Environmental Impact Statement and the Board conducting a Final Hearing for the Project.

Leading up to the Technical Meeting and at the Technical Meeting, the Proponent made close to 400 commitments to address the technical comments, questions and concerns about the *Draft* Environmental Impact Statement and the Project expressed by technical experts and the Board staff. The commitments agreed to by the parties at the Technical Meeting were recorded by the Board staff and are included in Appendices 1 and 2. As summarized by several intervenors at the Pre-hearing Conference, assuming that Sabina fulfills their commitments in a timely manner and complies with the specific direction and intention of the NIRB's Guidelines for the Preparation of the EIS for the Project (EIS Guidelines), many of the technical issues identified by the intervenors during their review of the *Draft* Environmental Impact Statement could be resolved prior to or at the time Sabina submits the Final Environmental Impact Statement. In addition, however, the Board notes that there were also substantive issues identified at the Community Roundtable and during the Pre-hearing Conference that may not be fully addressed in the Proponent's existing commitments. On this basis, the Board encourages Sabina to continue with its co-operative approach to resolving issues to the extent possible in order to address any outstanding issues raised in these contexts as well.

During the Community Roundtable the Board heard that there is a need for employment in the Kitikmeot Region and many Kitikmeot communities would welcome the training, educational,

business, and employment opportunities that the Project could bring. However, participants also indicated that several key areas of concern remain that must be addressed in a thorough and comprehensive way in the Final Environmental Impact Statement and the latter stages of the assessment of the Project, including the following:

- Potential for direct, indirect and cumulative effects to caribou and important caribou habitat;
- The location and method of containment of mine tailings;
- Protection of local water systems and wildlife from exposure to wastes and other contaminants;
- Potential for impacts to the marine environment, including impacts within Bathurst Inlet, as well as upon marine mammals, birds and fish from shipping, including potential fuel spills and emergency response roles, responsibilities and capabilities;
- Support for communities, education and training for youth;
- Navigability of Bathurst Inlet, placement of a dock infrastructure and the alignment of winter roads for the project; and
- Impacts to wildlife and wildlife harvesting from project activities, including caribou, grizzly bears, fish, birds and other animals.

On the basis of the Board's review of the Draft Environmental Impact Statement and reflecting the outstanding issues and concerns expressed by intervenors, community representatives and members of the Public, the Board directs the Proponent to ensure that the Final Environmental Impact Statement is supplemented and improved in respect of the following, as further elaborated within Section 3.3.4 of this report:

- Engagement efforts with communities, residents and organizations in the Kitikmeot Region regarding planned project shipping, including a revised assessment of the marine environment;
- Consideration of project infrastructure in terms of waste management, water management and relevant mitigation and monitoring measures;
- Updates to draft management, mitigation and monitoring plans for the proposed development;
- Further discussion and assessment of potential project impacts to caribou and caribou harvesting, mitigation, adaptive management and monitoring measures;
- Address areas of uncertainty in impact predictions; and
- Provide revisions to its cumulative effects assessment.

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ᒪᓕᓴᓗᑎᒃ ᑐᑭᒧᐊᑭᑎᒃᓴᖅᓯᓐᓄᑦ ᐊᓘᒪᓗ ᐃᓱᒪᑎᓕᒃᑯᑦ ᐱᓇᓱᐊᓚᖅᐅᔪᒪᔪᑎᖅᑕᐱᓄᑦᓗ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑐᓄᑦ (NIRB ᐅᕐᖏᓗᖅᓂᕐᒧᑦ ᑲᑎᒪᔨᕐᓂ) ᓴᖅᑭᖅᑎᑕᐅᓱᒪᔪᑦ ᐃᓕᓴᑯᑦ 12 *ᓄᓇᕗᒻᒥ ᓄᓇᕘᕐᕕᒃᓯᑦ ᐊᕐᕌᕗᑦᑎᑦ* (NLCA) ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᐅᓂᒃᑲᓕᐊᑲᖏᓐᓇᓂᒃ ᑲᑎᒪᓴᕐᓂᖅᑲᓪᓚᕆᔨᑦ ᐊᓘᒪᓗ ᓱᕐᓕᓕᖅᑎᒃ ᑎᒥᑎᖅᐅᔨᑦ ᐃᓄᐃᑦᓗ ᑲᑎᒪᑎᑦᓗᑎᒃ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᖃᐅᔨᓴᓕᐅᑎᓕᓂᖅᑕᖅᑐᑎᓄᑦ ᐊᖏᑎᒥᐅᑕᐅᓂᖅ ᐊᓘᒪᓗ ᐃᓄᐃᓄ-ᐱᐅᓕᓕᐊᔨᑕᐅᔪᓐᓇᖅᑐᓗ ᓴᓐᕕᓇ ᔪᓕ ᓱᐅᑦᐅᓴ ᑯᐊᐳᓚᓴᑯᑦ (Sabina ᐅᕐᖏᓗᖅᓂᕐᒧᑦ ᐱᓕᓚᐊᖅᑭᒪᔨᖅ) ᓴᓐᓂᖅᓱᔨᒥ ᑐᑭᓯᐅᑎᖅᑯᑦ ᐱᓕᓚᐊᓚᔨᒪᖅᖏᓐᓄᑦ (NIRB File No. 12MN026) (ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᖅ). ᑕᒪᐃᓇ ᐃᓕᖅᖏᓗ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᒧᑦ ᖃᐅᔨᓴᓕᐅᑎᒪᔨᖅᖏᓐᓇ ᒪᓕᐅᓐᓇᖅᖏᓐᓇ ᐃᓕᖃᑲᓕᐅᕐᓂᖅ (ᑎᑎᕋᐅᑕᐅᓂᖅ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᒧᑦ ᐅᓂᒃᑲᓕᐊᑲᖏᓐᓇᓂᒃᑯᑦᓗᑎᒃ ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᒧᑦ ᐅᓂᒃᑲᓕᐊᑲᖏᓐᓇᓂᒃᑯᑦ) ᑐᓂᔨᐅᔨᕕᐅᓂᖅ ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᒧᑦ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᓴᖅᓄᓂᒃ ᐃᓄᐃᑦ ᐃᓕᓴᕐᕕᒃᓯᒪᓕᖅᑐᑦ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ ᓴᖅᓄᓂᒃ ᐃᓄᐃᑦ ᐃᓕᓴᕐᕕᒃᓯᒪᓕᖅᑐᑦ ᐃᓕᓴᕐᕕᒃᓯᑦ ᐊᓘᒪᓗ ᐱᓕᓚᐊᓚᐅᑕᔨᓕᔨᒧᑦ ᓄᓇᕗᒻ ᐊᐅᖏᓕᓪᓚᐅᑯᑦ ᑲᑎᒪᔨᖅᑎᑦ

ᐊᖏᑎᓕᕆᔨᒃᑯᓄᑦ ᑲᑎᒪᔨᖏᓕᑦ ᐃᖅᑲᓇᐃᔪᖅᑎᖏᓐᓄᑦ ᐃᓕᖅᓯᐅᔪᖅᓯᒪᔪᓄᑦ ᐅᓂᒃᑲᓕᐊᕐᓂᐅᕐᐸᑦ ᐃᓱᐊᓇᐊᖅᑕᐅᓯᒪᓕᕆᓂᑐᒃ 1-ᒥ ᐊᓚᒪᓗ 2-ᒧᑦᓗ. ᓇᐃᓇᖅᓯᒍ ᐅᖅᑲᐅᒥᐅᓕᐅᖅᓯᒪᑎᑦᓗᒍ ᐃᓕᖓᓐᓄᑦ ᑎᒥᑦ ᓯᓕᒋᔪᖅᓯᒪᔪᓇᓄᑦ ᓯᐅᑦᓕᖏᑐᒃ ᑎᒥᑎᕐᐅᕐᔪᑦ ᐃᓇᐃᑦᓗ ᑲᑎᒪᓂᓕᑦ, ᐃᓱᒪᒥᓗ ᓴᖅᓂᒪᔪᑦ ᐱᓕᕆᓚᐅᖏᓪᓕᐊᓕᖅᑐᖅ ᐱᓕᕆᓚᖅᑐᖅᓯᒪᔪᖅᑐᑎᓪᓗ ᐱᓕᕆᓚᕆᓂᒃᓚᐃᓐᓇᖅ ᓇᑦᓕᐅᑎᓯᒪᔪᓚᖅᑐᖅᓯᐊᕐᓗ ᐱᓇᓱᐊᑕᓚᖅᑐᖅᑕᒥᓇᑦᓗ ᒪᓕᒃᓴᖅᓯᐊᕐᓗᒍᑦ ᐊᖏᑎᓕᕆᔨᒃᑯᓄᑦ ᑲᑎᒪᓂᓕᑦ ᐊᐅᓚᑦ ᓇᐃᓐᓕᐊᓕᖅᑐᖅ

ᑐᐊᕆᕐᓇᖅᑐᖅᓯᐅᑎᑕᕋᕆᔨᕐᕋᓂᖅᓯᑐᓂᓪᓗ, ᐱᓇᓯᐊᕆᓚᐅᕗᑦᓗ ᐱᑕᕆᐊᕆᐅᕗᖅᓴᕆᐊᕆᔨᕐᑕᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ;

- ᓄᓇᓕᖅᑎᕗᑦ ᐃᑲᔪᖅᓯᖅᑕᐅᓴᕆᐊᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ, ᒪᖅᔪᖅᑐᓕᓪᓗ ᐃᑕᖅᓂᐊᕆᔨᖅᑕᐅᓴᕆᐊᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᒻᒪᓗ ᓴᓇᐅᑲᖏᓐᓂ ᐃᑕᖅᓂᐊᕆᔨᖅᑎᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅᓯᓪᓗ;
- ᐃᖅᑎᕋᕐᕕᐊᓇᕋᔭᕆᐊᖅᓯᓂᖅ ᐅᒥᐊᕋᐊᓄᑦ ᕿᖅᓱᐅᐳᖅ, ᓇᒧᐊᕆᔨᖅᑕᐅᓇᔭᕆᐊᖅᓯᖅᓱᖅᑎᓂᖅᓯᒪᓂᖅ ᑐᓴᕐᑕᕋᕐᕕᖅᑐᖅ ᐅᑭᐅᖅᑯᓪᓗ ᐊᕆᖅᑯᓯᐅᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᑐᖅᑕᐅᕆᔨᖅᑎᑕᕋᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᒻᒪᓗ; ᐊᒻᒪᓗ
- ᐅᒪᒧᑦ ᐊᐅᑐᖅᑕᐅᓯᒪᔭᕆᓯᐅᕐᓴᐅᑐᐃᓐᓇᓕᖅᑎᓂᖅᓯᒪᓂᖅᓯᒪᓂᖅ ᐊᖓᔪᓇᓯᕐᓂᓪᓗ ᐱᓕᕆᓚᐅᕗᑦᓗᐊᖅᑕᕐᕕᖅᑕᕐᕕᖅᑎᓪᓗᖓ, ᐃᓕᖅᓯᐅᑎᓗᑎᑦ ᑐᑭᓯᐅᑦᓗ ᐊᐅᖅᑯᓯᐅᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐱᓕᕆᐊᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᐅᖅᑕᐅᕆᔨᖅᑎᓂᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ; ᐊᒻᒪᓗ
- ᐅᒪᒧᑦ ᐊᒻᒪᓗᑐᖅᑕᐅᓯᒪᔭᕆᓯᐅᕐᓴᐅᑐᐃᓐᓇᓕᖅᑎᓂᖅᓯᒪᓂᖅᓯᒪᓂᖅ ᐊᖏᔪᓇᓯᕐᓂᓪᓗ ᐱᓕᕆᓚᐅᕗᑦᓗᐊᖅᑕᕐᕕᖅᑕᕐᕕᖅᑎᓪᓗᖓ, ᐃᓕᖅᓯᐅᑎᓗᓂᑦ ᑐᑐᐃᓐᓇᖅᑐᖅ ᐊᐅᖅᑯᓯᐅᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᑐᖅᑕᐅᕆᔨᖅᑎᑕᕋᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐱᓕᕆᐊᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᒻᒪᓗ; ᐊᒻᒪᓗ
- ᐅᒪᒧᑦ ᐊᒻᒪᓗᑐᖅᑕᐅᓯᒪᔭᕆᓯᐅᕐᓴᐅᑐᐃᓐᓇᓕᖅᑎᓂᖅᓯᒪᓂᖅᓯᒪᓂᖅ ᐊᖏᔪᓇᓯᕐᓂᓪᓗ ᐱᓕᕆᓚᐅᕗᑦᓗᐊᖅᑕᕐᕕᖅᑕᕐᕕᖅᑎᓪᓗᖓ, ᐃᓕᖅᓯᐅᑎᓗᓂᑦ ᑐᑐᐃᓐᓇᖅᑐᖅ ᐊᐅᖅᑯᓯᐅᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᑐᖅᑕᐅᕆᔨᖅᑎᑕᕋᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐱᓕᕆᐊᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐊᒻᒪᓗ; ᐊᒻᒪᓗ

ᒪᓕᓐᓄᒍ ᓄᓇᕗᒻᒥ ᐊᖏᑎᓕᓚᐅᖅᓯᑦ ᑲᑎᒪᔨᖏᓕᑕ ᖃᐅᔨᓴᕈᑎᕐᓴᐅᓂᖅᓯᖓᓐᓂᑦ ᓯᕗᓕᓕᕐᕋᑦ ᐊᖏᑎᑎᐅᑕᓕᕐᕋᓂᖅᓯᒪᓂᖅᓯᒪᓂᖅ ᐊᐅᑐᖅᑕᐅᕆᔨᖅᑎᑕᕋᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐅᓂᒃᑲᓕᐊᖅᑕᐅᓴᖅ ᐊᒻᒪᓗ ᓴᖅᑭᑦᓕᓐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐱᓕᕆᐊᖅᑕᐅᔪᖅᓴᖅᑕᕐᕕᖏᓐᓂᕆᔨᕋᔭᕐᓂᖅᑎᓂᖅᓯᒪᓂᖅ ᐅᓂᒃᑲᓕᐊᖅᑕ

1. Background

In accordance with the mandate and objectives of the Nunavut Impact Review Board (NIRB or Board) established under Article 12 of the *Nunavut Land Claims Agreement* (NLCA), the NIRB recently concluded the technical review and pre-hearing conference stages of the Board's assessment of the potential ecosystemic and socio-economic effects of Sabina Gold and Silver Corporation's (Sabina or the Proponent) Back River Project Proposal (NIRB File No. 12MN036).

Pursuant to Rule 21.1 of the NIRB's Rules of Procedure, in order to facilitate the hearing process the Board may hold a Pre-hearing Conference (PHC) with the parties either before or after the date of a hearing is set. The PHC may be held in writing or orally, by teleconference or in person, and deal with any of the following matters:

(a) Prepare a clear statement of issues in question;

(b) Confirm the participation of authorizing agencies in the hearing;

(c) Identify and register intervenors;

(d) Determine the positions of the parties;

(e) Determine the witness list;

(f) Determine whether the parties may benefit from a mediation meeting to discuss the issues;

(g) Set a timetable for the exchange of documents and information requests prior to the hearing;

(h) Finalize procedures to be followed in the hearing; and

(i) Decide any other matters that may aid in the simplification of the hearing.

Prior to the PHC, the NIRB hosted a meeting of technical experts in Cambridge Bay from November 13-15, 2014 to facilitate discussions between the Proponent, regulatory authorities and interested parties regarding the issues raised in parties' technical review comments for the Draft Environmental Impact Statement (DEIS) for the Back River Project (the Project). The Technical Meeting was facilitated by the staff of the NIRB with the objective of achieving further clarity and/or resolution on items within the DEIS where the methodology, analysis or conclusions presented by the Proponent are not supported by reviewers.

Through the technical review period for the DEIS and the NIRB's Technical Meeting, the Proponent made close to 400 commitments intended to address the technical comments, questions and concerns raised by interested parties regarding the Project and the information needed for presentation within a Final Environmental Impact Statement (FEIS) submission for

the Project. A list of these commitments was compiled and brought forward for consideration at a PHC held as part of the Review of the Project, to assist the NIRB with identifying those areas where additional direction may be required for the Proponent's preparation of its FEIS submission.

A Community Roundtable and PHC was conducted in Cambridge Bay from November 17-19, 2014 as part of NIRB's Review of the Back River Project. The PHC serves as an important milestone in the NIRB's review process; providing an opportunity for the Board to hear from intervenors, the Proponent and the public regarding issues identified during the technical review of the DEIS, including those which have been adequately addressed and those which remain outstanding. The NIRB conducts a PHC to identify and limit the issues of divergence among parties to the Review, and to promote the efficient use of time at the Final Hearing. The PHC also served as an opportunity to discuss the final phase of the review process, including the anticipated timing of the Proponent's FEIS submission and scheduling of a Final Hearing.

Should the Proponent fulfill its commitments and comply with the specific direction and intention of the NIRB's Guidelines for the Preparation of the EIS for the Project (EIS Guidelines), the NIRB believes that many of the technical issues identified by the parties during their review of the DEIS will be addressed through Sabina's FEIS submission. However, the Board notes that there were also a number of issues identified at the Community Roundtable and PHC that may not be fully addressed through the Proponent's commitments alone. The objective of this PHC decision is to provide further direction that must be addressed by Sabina in its preparation of the FEIS for the Project, such that the final stage of the NIRB's Review of the Back River Project Proposal adequately addresses the potential impacts and public concerns associated with the proposed project and narrows the outstanding issues to be addressed through the final hearing for this Review.

1.1 Procedural History

On June 14, 2012 the NIRB received the Back River project proposal directly from the Proponent, and on July 12, 2012 the NIRB received a referral from the Nunavut Water Board (NWB) requesting that the Board screen the Project. The Back River project is located in the Kitikmeot Region of Nunavut, an area that does not currently have an approved land use plan in place; therefore, a conformity determination from the Nunavut Planning Commission was not required for this file. The NIRB assigned this project proposal file number 12MN036 and commenced its screening pursuant to Article 12, Part 4 of the NLCA.

Public notice of this project proposal and the NIRB's Screening assessment was distributed on August 1, 2012 to the communities of Kugluktuk, Cambridge Bay, Gjoa Haven, Taloyoak, Kugaaruk, and Ulukhaktok (NT) as well as to relevant federal and territorial government agencies, Inuit organizations and potentially interested/affected groups of Nunavut and the

Northwest Territories. The NIRB requested that interested parties review the proposal and provide the Board with any comments or concerns by August 22, 2012; later extended to September 5, 2012 at the request of the Kitikmeot Inuit Association. Due to the additional time required to conduct adequate public consultation of this application, on August 20, 2012 the NIRB requested an extension to the screening deadline from the Minister of Aboriginal Affairs and Northern Development (the Minister). On September 6, 2012 the NIRB received correspondence from the Minister's office granting the extension as requested.

On September 25, 2012 the NIRB issued its screening decision report to the Honourable John Duncan, then-Minister of Aboriginal Affairs and Northern Development, which recommended pursuant to NLCA Section 12.4.4(b) that the Back River Project required a Review under Part 5 or 6 of Article 12 of the NLCA. On December 17, 2012 the Minister referred the Project to the NIRB to conduct a Review to assess the ecosystemic and socio-economic impacts of the proposal pursuant to Article 12, Part 5 of the NLCA. In addition, pursuant to Section 12.5.1 of the NLCA, the Minister also provided the following specific direction with respect to the NIRB's assessment of potential transboundary impacts and cumulative impacts:

> Transboundary Impacts
> *Given the Proposal's close proximity to the Bathurst caribou calving ground, it is essential that the scope of the Board's review also include consideration of transboundary impacts upon affected communities and groups who depend upon this resource. I therefore suggest that the Board pay particular attention to encouraging the participation of these groups in the review so that the potential impacts and proposed mitigation measures can be thoroughly understood.*
>
> Potential Cumulative Effects
> *The Back River Project Proposal is one of many proposed and/or existing mines in the Kitikmeot Region. A thorough cumulative impacts assessment will be very important for the review. However, when assessing these impacts, I urge the Board to consider the Proposal in combination with reasonably foreseeable mine and transportation infrastructure developments.*

On December 17, 2012 the NIRB distributed the Minister's decision and public notice of the Board's commencement of its Review of the Back River Project. In its correspondence the NIRB detailed the specific direction from the Minister as listed above; the Board further noted that while the Minister had indicated that participant funding would not be made available for the Review, he did acknowledge the need for ensuring effective participation through the NIRB's process. On December 21, 2012 the NIRB issued correspondence outlining the initial steps of the Review process further clarifying for parties that, at the request of Sabina, the NIRB's Review would be coordinated with the NWB's water licensing process for the Project (see

Section 4). The correspondence also included a Draft Scope for the assessment of the Back River Project and requested that parties provide comments to the Board based on their area of expertise and/or mandate on or before January 25, 2013.

In determining the scope of the Board's assessment, from February 2-13, 2013 the NIRB undertook a series of public scoping meetings in each community of the Kitikmeot region, with specific invitations and opportunity for residents of Bathurst Inlet and Bay Chimo to participate in meetings scheduled for Cambridge Bay and Kugluktuk. The NIRB also carried out a public scoping session for this Review in Yellowknife, NT on February 20, 2013. On February 8, 2013 the NIRB issued a revised Scope and its Draft EIS Guidelines, requesting that interested parties and responsible authorities review the documents and provide comments to the Board based on their area of expertise and/or mandate on or before March 11, 2013. Following consideration of the input received through written submissions from interested parties as well as oral comments provided during public scoping sessions, on March 18, 2013 the NIRB issued correspondence providing the following:

- The Final Scope for the assessment of the Back River Project;
- The Revised Draft EIS Guidelines for the Project, with a request that parties review the document and provide comments to the Board on or before April 8, 2013; and,
- An opportunity for parties to indicate whether there was sufficient need/interest in scheduling a Guidelines Development Workshop for April 22, 2013.

On April 5, 2013 the NIRB released its *Public Scoping Meetings Summary Report for the NIRB's Review of Sabina Gold & Silver Corp.'s "Back River" project (NIRB file no. 12MN036)* which provided an overview of the comments and questions raised during the community meetings outlined above.

Based on comments received from parties on March 25 and April 8, 2013, the NIRB provided notice to parties on April 9, 2013 that the Board had determined that the scheduling of a Guidelines Development Workshop would be unnecessary as no significant outstanding items which would require further dialogue had been identified by interested parties.

Pursuant to Section 12.5.2 of the NLCA, on April 30, 2013 the NIRB issued its *Guidelines for the preparation of an Environmental Impact Statement for Sabina Gold & Silver Corp.'s Back River Project (NIRB File No. 12MN036)* (i.e. EIS Guidelines) to the Proponent.

On January 20, 2014 the NIRB acknowledged receipt of Sabina's *Draft* EIS (DEIS) submission for the Back River project and initiated an internal review of the submission to determine whether or not it conformed to the EIS Guidelines issued by the Board for the Project. On February 11, 2014 the NIRB provided notice to the Proponent and parties that it had determined the DEIS conformed to the NIRB's EIS Guidelines, and that the Board was inviting interested

parties to submit Information Requests (IRs) related to the DEIS, to the NIRB for consideration on or before March 13, 2014. Following receipt and review of the IR submissions, on April 7, 2014 the NIRB issued correspondence to Sabina, the Government of Canada, the Government of Nunavut, and the Government of the Northwest Territories regarding those IRs that needed to be addressed prior to initiation of the technical review period for the DEIS. On July 23, 2014 the NIRB received IR responses from all parties as required and, after a preliminary completeness check, confirmed that sufficient information had been provided to continue with further technical review.

On July 31, 2014 the NIRB initiated a 60 day technical review period to allow for a detailed review of the DEIS with the intent of analyzing the completeness and quality of the information presented by the Proponent in support of the project proposal. The NIRB requested that responsible authorities, interested parties and those with specialist advice provide their technical review comments to the NIRB on or before September 29, 2014.

All documentation cited above and associated with the NIRB's Review of the Back River Project can be accessed online from the Board's public registry at the following address:

http://ftp.nirb.ca/02-REVIEWS/ACTIVE%20REVIEWS/12MN036-SABINA-BACK%20RIVER/.

1.2 Project Description Overview

The following is a summary overview of the project description for the Back River Project as filed with the NIRB; the complete project description can be accessed online from the Board's public registry at the following address:

http://ftp.nirb.ca/02-REVIEWS/ACTIVE%20REVIEWS/12MN036-SABINA-BACK%20RIVER/02-REVIEW/05-DRAFT%20EIS%20&%20CONFORMITY%20REVIEW/02-DEIS%20JAN%202014/.

The Back River Project is a proposed gold mining and milling operation located approximately 150 kilometres (km) south of Bathurst Inlet, 250 km southwest of Bay Chimo, 300 km northeast of Cambridge Bay, and 375 km northwest of Kugluktuk. The Project would involve mining operations at two separate areas, the Goose Property and the George Property, as well as a Marine Laydown Area at Bathurst Inlet, with winter roads connecting the sites. The Project as proposed would use a combination of open pit and underground mining techniques to access six deposits to remove approximately 20-28 million tonnes total ore, mill up to 7,000 tonnes of ore per day, and produce 300,000-400,000 ounces of gold annually as gold dore bars which would be flown to markets direct from site. Construction of the Project would take approximately two years, mine operations would last ten to eighteen years, with a five year closure period, and post closure monitoring to follow.

During the Technical Meeting and Pre-hearing Conference, Sabina indicated that it no longer intends to utilize the Tibbit-Contwoyto Winter Road connection that was referenced within the DEIS[1].

1.1.1 Goose Property

Proposed activities and facilities at the Goose Property include the development of three open pits: Goose Main, Umwelt, and Llama. An underground operation is also proposed to extract ore from below the bottom of the Umwelt open pit. All ore generated at both properties would be processed at a mill located at the Goose Property. Tailings would be stored in a tailings storage facility next to the processing plant. Other proposed facilities at the Goose Property would include a camp with capacity to house 700 people during construction and 350 during operations, an airstrip, maintenance, warehouse, shops and a fuel storage tank farm.

1.1.2 George Property

Activities and facilities proposed at the George Property include the development of three open pits: Lone Cow Pond North, Locale 1 and Locale 2 with all ore mined at the George Property to be stockpiled during the summer and transported over a winter road to the mill at the Goose property for processing. Other proposed facilities at the Goose Property include a camp with capacity to house 300 people during construction and 150 during operations, an airstrip, maintenance, warehouse, shops and a fuel storage tank farm.

1.1.3 Marine Laydown Area

Proposed activities and facilities at the marine laydown area include the construction and operation of several all-weather and/or winter roads connecting the marine laydown area with the Goose and George properties. These roads would be used to transport supplies and equipment, to access various project infrastructure, and to transport ore from mine sites to the mill on the Goose Property which is located approximately 130 km south-east of the laydown area. Marine access, activities, and associated infrastructure would be used for annual resupply and seasonal transport during the open-water season to move equipment, supplies and fuel to site via 5-10 ships per year (or equivalent via barge) during construction, and 3-5 ships per year (or equivalent via barge) during operations with ships to be routed north of Bathurst Inlet to the Coronation Gulf, and on through existing shipping corridors to the east or west. Infrastructure associated with the proposed marine laydown area would include: a barge ramp for two barges, a temporary dock installed seasonally and a laydown and storage and maintenance facilities, explosives storage, camp facilities capable of housing 100 people during construction and 50 during operations, and a fuel tank farm.

[1] Back River DEIS (January 2014), Volume 1 p.xi, p.lxiii, p.lxxiv, Section 3.3.1.4 p.3-17, Section 9.1 p.9-2; Volume 2, p.iii, Section 4.2.2 p.4-3, Section 4.2.2.3 p.4-5, Section 6.2 p.6-1, Section 8.1 p.8-2.

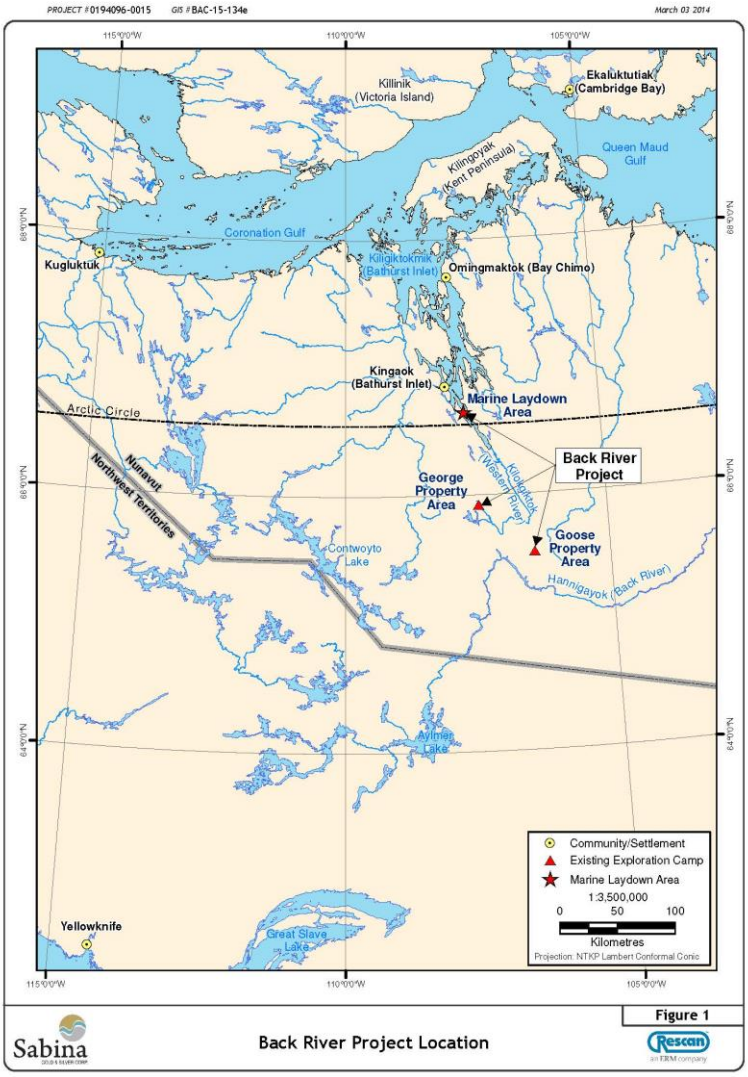

Figure 1 - location of the proposed Back River Gold Mine site

2. Summary of Submissions from Parties

On August 14, 2014 the NIRB provided confirmation to parties of the dates for its Pre-hearing Conference. Following the submission of technical review comments from parties on October 10 and 14, 2014 and responses from Sabina on October 24 and 30, 2014, on October 31, 2014 the NIRB provided the Back River distribution list with an agenda for the Pre-hearing Conference, as well as direction regarding presentation format and length for agencies and organizations planning to attend the meeting.

2.1 Kitikmeot Inuit Association (KIA)

The KIA is a Designated Inuit Organization under the NLCA, with jurisdiction as the owner and administrator of the Inuit Owned Lands on which the majority of the proposed project development area is situated. The KIA has participated in the Board's assessment of the proposed Project since the initiation of this Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, the KIA submitted 140 Information Requests directed to Sabina, as well as 53 detailed technical review comments. The KIA attended the NIRB's Technical Meeting and Pre-hearing Conference with five participants at the Technical Meeting and three at the Pre-hearing Conference.

The KIA noted during the PHC that all but two of the issues it raised during the technical review period had been addressed through commitments made by Sabina. The KIA's outstanding concerns included a desire for a realignment of the proposed winter road near Bathurst Inlet to avoid the high quality habitat north of Tahikafalok Lake (Bathurst Lake), and a concern regarding the potential effectiveness of the proposed tailings storage facility given the ruggedness of the development area.

The KIA noted that the following outstanding concerns had not been addressed through commitments by Sabina:

- Snow pack sampling to be undertaken to monitor for pollutants entering water from dustfall and quickly identify the source of the pollutant; and
- Monitoring changes in speciation of arsenic, noting that there may be other water monitoring efforts undertaken by Sabina that could address this concern.

As most of the Back River Project is proposed on Inuit Owned Land, during the Community Roundtable portion of the meetings the KIA provided additional detail and responses to some of the community members concerns about the Project, specifically with respect to monitoring

responsibilities, requirement for financial securities, and potential benefits to the communities including through the Inuit Impact and Benefit Agreement (IIBA) that would have to be negotiated for the Project. The KIA noted that it would work with the Government of the Northwest Territories, AANDC, and the NWB where these parties had issues or concerns similar to those of the KIA.

2.2 Government of Nunavut (GN)

While the federal government currently has authority over the management of mineral resources on Crown Land in Nunavut, the GN has retained jurisdictional responsibility and permitting authority over activities that affect wildlife and wildlife habitat, Commissioner's Lands, municipalities, education, health, social services, public safety, culture, community development, property rights, and the administration of the laws of Nunavut. The legislative base governing the GN's jurisdiction for the Back River project proposal includes the *Apprenticeship, Trade and Occupations Certification Act*, *Environmental Protection Act*, *Income Tax Act*, Nunavut Archaeological and Palaeontological Sites Regulations, *Nunavut Housing Corporation Act*, *Official Languages Act*, *Petroleum Products Tax Act*, *Public Highways Act*, *Public Health Act*, *Scientists Act*, and the *Wildlife Act*.

As indicated in its Parnautit policy[2], it is the GN's objective to ensure that mineral resource projects in Nunavut are developed in a manner that respects, protects and cares for the land, animals and the environment, while ensuring that a given project will create positive effects on the socio-economic conditions of the territory by providing opportunities for employment, education and training to Nunavummiut.

The GN has participated since the initiation of this Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the Project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, the GN submitted 42 Information Requests directed to Sabina, as well as providing 37 technical review comments. The GN participated in the NIRB's Technical Meeting and Pre-hearing Conference, with four participants at the Technical Meeting and three participants at the Pre-hearing Conference.

Of its 37 technical review comments submitted to the NIRB for consideration, the GN noted during the Pre-hearing Conference that it had reached agreement with the Proponent on 18 of these items, with partial agreement on 17 more items and 2 items where no agreement had been reached and which remained outstanding. During the Technical Meeting, the GN confirmed that

[2] Government of Nunavut, Department of Economic Development and Transportation, 2013. "Parnautit: A foundation for the future—Government of Nunavut Mineral Exploration and Mining Strategy". Iqaluit: GN Dept. of ED and T.

all of its outstanding socio-economic issues had been resolved through side meetings between it and the Proponent; Sabina confirmed wording for commitments to address these items within its FEIS submission. The GN also confirmed that Sabina had made commitments regarding muskox, wolverine and furbearers, and raptors, and that partial agreement was made regarding issues pertaining to vegetation. GN noted that 9 outstanding items remained where Sabina provided responses that resulted in only partial agreement. Concerns noted by the GN during the Community Roundtable and Pre-hearing Conference covered environmental and human health topics such as:

- Wildlife (GN-20, 21, 22) – the GN noted that it had outstanding concerns relating to noise disturbance, and recognized Sabina's commitment to work with the GN on wildlife monitoring.
- Cumulative Effects (GN-23) – the GN noted outstanding concerns with respect to cumulative effects to wildlife.
- Caribou (GN-24) – the GN recognized Sabina's agreeing to update monitoring and mitigation measures for caribou, however, noted concerns regarding potential impacts and cumulative effects to caribou.
- Polar bears (GN-25, 26) – the GN noted that with regard to its recommendation that Sabina assess the effects to polar bears along the shipping route and provide mitigation measures, the Proponent had partially agreed. The GN noted remaining concerns regarding the level of detail Sabina would provide to effectively assess potential impacts.
- Grizzly Bears (GN-27, 28, 29) – the GN acknowledged Sabina's agreement to providing a bear safety and response plan and further detail for mitigation measures; however, the GN noted concerns with Sabina's proposed approach to regional monitoring and the ability to detect potential impacts to the grizzly bear population.
- Vegetation (GN-33) – the GN acknowledged Sabina's agreeing to monitor dustfall, however, noted concern with regard to its lack of proposed vegetation contaminant monitoring.

2.3 Aboriginal Affairs and Northern Development Canada (AANDC)

AANDC is the federal government department responsible for meeting the government's obligations and commitments to First Nations, Inuit and Métis, and fulfilling the federal government's constitutional responsibilities in the Canadian North. AANDC has participated since the initiation of this Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, AANDC submitted 74 Information Requests directed to Sabina, as well as submitting 36 technical review comments.

AANDC participated at the NIRB's Technical Meeting and Pre-hearing Conference with four participants in attendance at each event.

Within its technical review comment submission to the NIRB, AANDC indicated that generally, the DEIS was lacking a significant amount of information to support the conclusions presented. Due to the number of commitments made by Sabina referencing information that would be deferred to the FEIS, AANDC summarized that its recommendations during this stage of the NIRB's Review focused on identifying the information necessary to fully understand the conclusions and mitigation presented in the EIS, as opposed to being in agreement or disagreement with Sabina's conclusions as presented within its DEIS.

AANDC noted that additional information would be required within the FEIS as relating to: mine closure, site water management, permafrost and groundwater conditions, stability of mine structures, the consideration of alternatives, the potential requirements for contingency measures, public engagement methods and findings, and human resources planning.

2.4 Environment Canada (EC)

EC's mandate covers the preservation and enhancement of the quality of the natural environment, including water, air, soil, flora and fauna, as well as species at risk and migratory birds. EC also provides meteorological data. In fulfilling its mandate, EC is guided by the following legislation: *Department of the Environment Act*, *Canadian Environmental Protection Act* (air quality, spill contingency planning and waste management), *Fisheries Act* (pollution prevention, water quality, metal mining effluent regulations), *Migratory Birds Convention Act*, and the *Species At Risk Act*.

EC has participated since the initiation of the NIRB's Review of the proposed Back River project, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, EC submitted 42 Information Requests directed to Sabina, and also provided 46 technical review comments. EC participated at the NIRB's Technical Meeting and Pre-hearing Conference with two representatives present at each of these meetings.

The majority of technical issues raised by EC during the Pre-hearing Conference focused on wildlife, migratory birds, species at risk, waste management, environmental emergency preparedness and response, project design, water quality monitoring, and metal leaching and acid rock drainage. In EC's technical review of the DEIS, it found that the conclusions drawn in the document were generally supported by the analysis, and its recommendations were provided to strengthen the Project and mitigate negative effects related to EC's mandate. It was noted during

the PHC that Sabina had yet to submit appropriate management plans for the operation of landfarms, the management of wastewater at proposed treatment facilities, the assessment of stability characteristics of areas proposed for terrestrial discharge, and a comprehensive cyanide management plan to prevent the release of cyanide to the environment. EC recommended that Sabina provide further details on components of the proposed project such as the proposed landfill, specifically a description of site's physical, surface, and subsurface characteristics, geotechnical characteristics, and an estimation of the volume and mass of wastes to be produced for the site.

EC acknowledged that Sabina committed to addressing its concerns by conducting additional environmental assessment to ensure that the Project does not adversely affect the study area. EC further encouraged Sabina to contact Environment Canada promptly should the results of Sabina's feasibility study indicate that Schedule 2 of the Metal Mining Effluent Regulations applies to the proposed project.

2.5 Fisheries and Oceans Canada (DFO)

The federal government exercises authority over marine and freshwater fisheries within Canada's territorial boundaries. DFO's primary focus in reviewing proposed developments in and around Canadian fisheries' waters as defined under the *Fisheries Act* is to ensure that the works and undertakings do not result in the release of substances deleterious to fish or cause "serious harm" to fish (which includes marine mammals) or fish habitat under the applicable provisions of the *Fisheries Act*.

DFO has participated since the initiation of this Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, DFO submitted 8 Information Requests directed to Sabina, and 15 technical review comments. DFO participated in the NIRB's Technical Meeting and Pre-hearing Conference with one representative in attendance at each meeting.

During the Pre-hearing Conference DFO indicated that all issues raised in its 15 technical review comments had been addressed through commitments made by Sabina; DFO noted that it looked forward to reviewing the FEIS for responses to its various technical comments.

2.6 Natural Resources Canada (NRCan)

NRCan's mandate includes the development, implementation and delivery of policies, programs, science and technology for the sustainable development and responsible use of Canada's mineral, energy and forestry resources. NRCan also serves as a responsible authority for the

proposed project through the application of the *Explosives Act*; the department also has specialist knowledge of areas pertaining to earth sciences.

NRCan has participated since the initiation of the NIRB's Review of the Back River project proposal, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, NRCan submitted 22 Information Requests directed to Sabina, and 37 technical review comments. NRCan participated at the NIRB's Technical Meeting and Pre-hearing Conference with one representative in attendance at each of the meetings.

Included within its submission to the NIRB was a request from NRCan for Sabina to provide more information on permafrost and terrain stability, hydrogeology, acid generation and metal leaching from mine materials. While it was indicated that the DEIS was lacking in additional geotechnical information required for substantiating the overall impact of Project infrastructure, NRCan recommended that Sabina's FEIS should specifically incorporate supporting information on the thermal conditions of the tailings impoundment area, cover thickness of tailings impoundment and waste rock storage areas, as well as climate change effects on management strategies for mine wastes.

NRCan indicated during the Pre-hearing Conference that, as a result of discussions during the Technical Meeting, it was generally satisfied with the responses Sabina provided to its recommendations, and that while it did not have any outstanding issues, it would likely have additional comments on the FEIS due to the amount of material outstanding from the DEIS. NRCan noted that its technical experts would continue to work with the Proponent to resolve technical issues prior to the submission of the FEIS.

2.7 Transport Canada (TC)

TC's mandate involves promoting and supporting the development of an integrated transportation system that is safe, secure, efficient, and environmentally responsible. TC administers transportation regulations, policies and programs designed to enhance the safe operation of aircraft, trains, ships and barges. TC's jurisdiction over the proposed Back River Project is supported by various pieces of legislation including, but not limited to: the *Canada Shipping Act, 2001*, the *Arctic Waters Pollution Prevention Act*, the *Marine Liability Act*, the *Coasting Trade Act*, the *Marine Transportation Security Act*, the *Navigation Protection Act*, the *Transportation of Dangerous Goods Act, 1992*, as well as relevant regulations which may apply.

TC has participated since the initiation of this Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS

Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, TC submitted 17 Information Requests directed to Sabina, and 3 technical review comments. TC participated at the NIRB's Technical Meeting, with one representative in attendance, and at the Pre-hearing Conference with two representatives.

TC indicated that requirements under the Arctic Shipping Pollution Prevention Regulations (ASPPR) currently set the standards for how vessels operate in Arctic waters, and that Sabina's safety and emergency plans have yet to fully consider requirements under existing legislation to minimize impacts from proposed shipping activities. It was noted that Sabina is required to amend the legislative requirement section of its Oil Pollution Emergency Plan (OPEP) to comply with section 168 (1) (b) (iii) of the *Canada Shipping Act*, which requires the Proponent to identify every person authorized to implement the OPEP and their contact information on the oil handling facility declaration. During the Technical Meeting, Sabina committed to addressing all of the concerns raised by TC and to provide information where requested including engaging TC's regulatory process to ensure that proposed shipping activities do not adversely affect the environment.

Discussions at the PHC clarified that Sabina has not yet determined what size of vessels would be used for the proposed shipping of fuel and supplies for the Project. Sabina noted that as it is currently assessing shipping vessel and barge requirements and the size of vessels or barges to be used as part of the feasibility study, once the study is complete, it would be able to provide additional detail into the shipping plans as well as the operational considerations.

As a result of the amount of outstanding information identified through the meetings, TC recommend in its summary of concerns that Sabina review the shipping routes and review proposed project works that could be subject to the *Navigation Protection Act*. Once Sabina has determined the size of vessels being considered to undertake project related shipping, TC recommended that it check that the appropriate bathymetric information, including depth of the inlet and/or dredging requirements, if necessary, are provided within the FEIS. TC stated in their concluding remarks that Canadian Coast Guard spill response equipment should not be relied upon in Sabina's plans related to spill response, and that Sabina ensure it has proper and independent response capabilities in place.

2.8 Government of the Northwest Territories (GNWT)

The Government of the Northwest Territories department of Environment and Natural Resources' (GNWT) policy outlines the department's mandate to promote the sustainable use and development of natural resources to protect, conserve and enhance the Northwest Territories' environment for the social and economic benefit of all residents. This mandate is supported more broadly by the GNWT-wide Sustainable Development policy which identifies

cooperation with other jurisdictions as important in addressing transboundary concerns related to resource management and the maintenance of environmental quality. The GNWT noted that a memorandum of understanding with the Government of Nunavut is currently being formalized with regard to several aspects of the shared management of caribou herds.

The GNWT has participated since the initiation of the NIRB's Review, providing comments, concerns and advice to the NIRB for consideration regarding the scope of the project and assessment, the EIS Guidelines issued by the NIRB to the Proponent, and most recently, throughout the information request and technical review commenting period. During the review of the DEIS for the Project, the GNWT submitted 13 Information Requests directed to Sabina, 1 directed to the Government of Nunavut and Sabina, as well as 9 technical review comments. GNWT also participated at the NIRB's Technical Meeting and Pre-hearing Conference with two representatives present at each meeting.

The focus of the GNWT's technical review was potential impacts and cumulative effects that the Project may have on grizzly bears and wolverines, as well as on caribou, especially owing to the Bathurst caribou herd currently experiencing a severe population low which increases their vulnerability to further decline or impacts that may cause a delay of population recovery. The GNWT generally noted that it did not accept Sabina's conclusions in the DEIS that the Project's specific or cumulative effects on wildlife would be "not significant". More specifically, the GNWT noted that the DEIS did not provide enough information to evaluate impacts to caribou in the context of population status of the herds; the GNWT found that Sabina did not provide a sufficient analytical basis or line of evidence, quantitative or qualitative, to examine changes in reproductive productivity for any species, particularly caribou; and the assessment of impacts due to disturbance was limited to noise and therefore incomplete for assessing potential costs of indirect habitat loss to caribou.

The GNWT noted that it also disagreed with Sabina's statement that the degree of Project overlap with sensitive habitats is minimal, noting the possible repercussion in underestimating Project impacts to caribou during sensitive life stages, as well as disagreeing with Sabina's statement that the proposed mitigation measures adequately minimize impacts to caribou during sensitive periods including spring migration, calving and post-calving. Finally, the GNWT noted that Sabina's approach to the cumulative effects assessment was insufficient to support conclusions on potential range-scale impacts to caribou and that the proposed monitoring for grizzly bear and wolverine was insufficient to adequately address impact predictions.

As a result of its participation in the Technical Meeting, the GNWT noted that it considered Sabina's commitments as providing:

- Predictions for caribou to be considered in context of herd status and recovery potential.
- Use of timelines relevant to communities that depend on caribou in significance ratings.

- More information on annual variation in herd movement and historic calving (and post-calving) ranges to be included.
- Willingness to contribute to cumulative effects monitoring, assessment and management initiatives for Bathurst herd.
- Need for work suspension protocols for caribou.
- More detailed monitoring plans that to test impact predictions and that link back to the species.
- Analysis using 14 km zone of disturbance.

The GNWT noted two outstanding issues including:

- More comprehensive assessment of impacts to reproductive productivity and cumulative effects to caribou required, and
- Uncertainty should be addressed more explicitly.

2.9 Communities of Bathurst Inlet, Bay Chimo, Cambridge Bay, Gjoa Haven, Kugluktuk, Kugaaruk, Taloyoak and Gameti, Lutselk'e, Whati, and Wekweeti

To facilitate its Community Roundtable portion of the PHC, the NIRB invited representatives from the Kitikmeot communities of Bathurst Inlet, Bay Chimo, Cambridge Bay, Kugluktuk, Gjoa Haven, Taloyoak, and Kugaaruk, as well as representatives of potentially affected communities of the Northwest Territories including Bechoko, Dettah, Gameti, Lutselk'e, Wekweeti, Whati, and Yellowknife-Ndilo. The NIRB invited 3 representatives from each of the Nunavut communities: one from each of the local Hamlets, Hunters and Trappers Organizations and the Kitikmeot Inuit Association's Community Liaison Officers; and invited 1 representative from each of the Northwest Territories communities, with invitations sent to the band councils or local governments. Representatives from each of the Nunavut communities were present during the Pre-hearing Conference and Community Roundtable, as well as representatives from Northwest Territories including the communities of Lutselk'e, Dettah, Wekweeti, and Bechoko on behalf of the T'licho Government.

The majority of environmental issues raised by community representatives during the Community Roundtable focused on the potential impacts (including cumulative and transboundary effects) associated with the proposed mine and road infrastructure on the air, land, water and wildlife, with a particular focus on effects on caribou populations. The potential for impacts from shipping activities and accidents along the shipping route on the marine environment, marine mammals and harvesting marine wildlife was also identified as a key area of concern. Table 1.0 outlines a summary of the key issues raised during the Community Roundtable.

Table 1.0: Summary of Key Issues Raised During Community Roundtable

Topic	Issues/Concerns/Comments
Air Emissions	How does the Proponent intend to reduce emissions from machinery and vehicles on-site?
	What is SO_2 and why is it assessed in the DEIS?
	The Proponent should remember that this is a pristine environment and so dust and smoke from an industrial site are very visible from a long way away
	The Proponent should consider incorporating Inuit traditional knowledge into their management measures; Inuit do not idle vehicles more than needed, to limit pollution
Aircraft	Concerns expressed about the potential for effects of air travel (up to 10 flights a day during construction) and helicopter flights on birds and caribou, noting experience with mineral exploration-related helicopter movements having scared caribou away from a particular area, and that once helicopters are gone from the area, caribou started to return.
	Will equipment be moved by air or mostly by ship?
	Where will people be flying out of (Yellowknife, Cambridge Bay, Kugluktuk or elsewhere)?
All Weather Roads (AWAR)	What materials will be used to construct the AWAR used on-site (boulders, gravel, berms, etc.)?
Blasting/Explosives	For the explosives, is there a storage facility on-site and if so, how will the Proponent make sure explosives are stored properly?
Caribou	The Dolphin and Union caribou herd when they are migrating from their summer grounds to their wintering grounds may pass across the newly forming ice, so any interference with the formation of the sea ice at early stages can affect that migration.
	The population of the Bathurst caribou have declined significantly—we are not here to blame anyone but we want to ensure that these impacts are minimized and that land be reclaimed so that further impacts do not affect the population in the long term.
	Any embankments around mine roads should be minimized to ensure that they do not pose a barrier to caribou passage or cause caribou to be injured.

Topic	Issues/Concerns/Comments
	How will Sabina change its plans to reflect changes to migration routes for caribou that may result in more caribou being present in the project area for longer periods?
	More detail about the Proponent's mitigation plans associated with impacts to caribou is necessary to establish thresholds that identify how many caribou must be near the mine site to trigger particular types of mitigation measures
	The caribou population may change (there may be more or there may be less) and how they use their range could change dramatically and the Proponent needs to be able to change their plans to reflect the numbers of caribou that use the site and the types of use of the site (especially calving and post-calving use).
	Can the Governments of Nunavut and Northwest Territories co-ordinate their monitoring of the herds?
	When a caribou survey is conducted how do you ensure that it is accurate?
	Do models of caribou populations include predation by wolves (this is becoming a big issue for certain caribou populations)?
	If we don't manage caribou well, we will not survive and the caribou are not going to respect a plan that stops at the territorial border or project area surrounding the mine site.
	Communities also need to take responsibility for teaching young people about how to hunt and use all of the caribou and should be educated on these things, not just training for working in an office or a mine. Inuit need to have an active role in conservation and best use of caribou.
Climate Change	How has the Proponent included considerations of climate change in the project (e.g. impacts such as less permafrost)?
Consultations	Hunters and Trappers Organizations (HTOs) would like to be more consulted on wildlife and harvesting issues (not just running comments through the NTI and KIA).
	When the Proponent finishes the NIRB assessment and gets the go ahead, will it have to continue to consult and meet with communities or will that be the last that the communities would see of the Proponent?
Cultural Resources	How are archaeological sites identified and preserved? How is harm to these sites prevented from taking place during project development?

Topic	Issues/Concerns/Comments
	Are there any grave sites in the project area that could be affected by mine development?
Cumulative Effects	In the NWT the communities are surrounded by the diamond mines and with the addition of this gold mine in the area there will potentially be further effects on the wildlife around us, mammals, migratory birds, caribou—how is this Proponent going to be required to take these additional effects on areas across the Nunavut border into account?
Dust control/dust suppression	How will the Proponent prevent dust from being released from the mine site and the machinery at the site?
	How will the Proponent control dust coming from roads during the summer time and winter time?
Fish	How till the Proponent limit the effects of noise on fish (they are very sensitive to noise)?
	Will there be a need to do a fish out of any dewatered lakes/water bodies?
	What will the Proponent do if there are effects on the country food (wildlife and fish) we can harvest in the area?
Fuel Transportation, Use and Storage	Does the Proponent have measures in place to respond to a spill of fuel during marine transportation?
	Does the Proponent have measures in place to respond to a spill of fuel into the marine environment when transferring the fuel from the vessel to the shore?
	Does the Proponent have measures in place to respond to a spill of fuel onto the land from the fuel storage area or during fuel transfer?
Marine Laydown Area	Why is the marine laydown area for this project located closer to the community than the BIPR location?
	It is very important to the people in that area that the Proponent re-aligns the road from Tahikafalok (Bathurst Lake) to the marine laydown area to avoid the riparian and sensitive areas as these areas are very important for wildlife.
	What will the dock structures look like for the project (how big and how far into the water?)
	Will the dock structures be seasonal or permanent?

Topic	Issues/Concerns/Comments
Marine Shipping	The Proponent needs to understand that Bathurst Inlet freezes earlier because there are four freshwater sources feeding into the inlet and therefore the residents of Bathurst Inlet are concerned that any marine shipping cannot be extended beyond September without affecting the ice cover which affects residents' and animals' ability to travel in the area when early ice formation is affected.
	Glad to see confirmation that shipping is only going to take place during "open water" season, but the shippers need to understand that ice may form earlier than predicted and if it does, shipping that breaks up the ice when it starts to form can affect the caribou migrating east to west. Shipping needs to be stopped as soon as the ocean starts to freeze to prevent effects on that migration.
	Does the Proponent have anything set up to deal with the potential for an oil spill during project shipping in the marine environment?
	Bathurst Inlet is a difficult water body to navigate safely even for small recreational vessels; residents have seen people without experience damaging their boats because they don't have sufficient personal experience with the area which is very important to successful navigation of the Inlet.
	When the ships travel through this route if there is a spill it will be a serious problem in the north—sea mammals, polar bear and fish could be very affected—are the Proponent, communities or others prepared to handle a clean-up?
	Concerns that oil/fuel spills near the Boothia Peninsula during project shipping, could affect already limited polar bear hunting.
	How many ships will be used at a time?
	Sometimes in different years there can be ice bergs and ice formation in the summer time that will require the shippers to be very careful and they must be prepared to avoid these ice bergs and ice.
	Are all the parties (including the Proponent, the Coast Guard and other federal government agencies, the Government of Nunavut and the communities) really prepared to handle a spill anywhere along the shipping route? The communities are really concerned that a spill could damage our food and livelihood.
	Do shippers get invited to these meetings?
	What months will project shipping take place?
	How big will the vessels be that do project shipping?
	How many ships will be along the shipping route at any one time?

Topic	Issues/Concerns/Comments
Marine Shipping (cont'd)	How will the shippers prevent contaminants being brought into the dock area from the areas where the ships originate?
	Where will the ships come from (all Canadian vessels or could there be foreign-flagged vessels)?
	How will the shippers ensure that they have the most recent routing, charts and up to date maps so that they do not have accidents along the way?
Mill	How will the mill process work and how long would it be operating—will there be cyanide; and then where does the wastewater from the mill go?
Monitoring	Will there be any wildlife monitors employed on-site?
	Will the KIA have a role in air and water testing at the site?
	Once the mine closes will there be obligations on the Proponent to conduct post-closure monitoring; or will the Proponent be long gone and then the Government will be required to do it?
Permafrost	How will the Proponent manage changes to the project that will happen if the permafrost is lost (things like changes to how the tailings storage facility operates) that are based on predictions that permafrost will be in place?
	Permafrost is melting—we have seen it already—so the Proponent should be prepared to address the situation of melting permafrost.
Place Names	There is confusion with some of the place names, as residents near Gjoa Haven think of a different area that is not actually within this project area when they hear "Back River" – the Proponent and other parties should consider using place names that make it clearer exactly where the proposed Project will be located but also where it is not.
Reclamation and Security	How can mine sites continue to be authorized/licensed when there are such large liabilities associated with gold mine clean ups like the Giant mine (how do regulators calculate the security for these projects now and have they improved the way that they do this to make sure that Nunavummiut are not stuck with the bill)?
Sewage Wastes	How will sewage wastes be dealt with?
	Will there be a sewage lagoon, and if so, how will the Proponent prevent wildlife and birds in particular from accessing this area?
Socio-Economics	The experience of Bay Chimo and Bathurst Inlet with mining in the area is that the benefits didn't accrue to these communities; so how is this project going to be different?

Topic	Issues/Concerns/Comments
	Will the Proponent commit to providing training (such as on-the-job training for heavy equipment operators), especially for youth in the Kitikmeot Region?
	About how many jobs will actually be available for the residents of the Kitikmeot Region?
	Is the Proponent working together with the Government of Nunavut to co-ordinate education and training opportunities to make sure that their training initiatives reflect the work force that Sabina is going to need?
	Does the Proponent have a memorandum of understanding or other form of project development agreement in place with the Government of Nunavut?
	The importance of negotiating an impacts and benefits agreement was emphasized and questions were raised regarding the extent to which a party purchasing Sabina or Sabina's assets could be bound to fulfill the Proponent's commitments under the Impact Benefit Agreement applicable to the Project.
	Will there be any jobs or economic opportunities for people in the NWT close by?
	Does Sabina conduct security checks for drugs and alcohol at the site right now and if so, do you intend to maintain those checks when the mine is operating?
Socio-Economics (cont'd)	How will Sabina ensure that it has all the personnel it needs to staff the project from Nunavut (we have a lot of territory but not a lot of people)—how will all levels of Government and the Proponent ensure our education system is improved to address this problem (e.g. is there any thought of offering training to students over the summer holidays)?
	How will the benefits of the mine be distributed locally or will these benefits be distributed widely outside the local area affected by the mine?
	Will the budgets for high schools in the communities affected by the mine increase?
	Will the schools incorporate training for heavy equipment operators into the school curriculum when this project begins hiring?
Tailings Storage Facility	Is there something covering the tailings pond to prevent migratory birds from getting into the tailings and being harmed as a result?

Topic	Issues/Concerns/Comments
	How with the Proponent prevent animals from getting into the tailings storage facility? Has the Proponent thought about using an electric fence to prevent wildlife access to the tailings storage facility?
	How can the Proponent and regulators assure us that the tailings management facility will not fail and release tailings into the water and onto the land like the mine in B.C.?
	Are the tailings storage facilities going to be lined so that there won't be seepage onto the lands?
	How will the location for the tailings facility be chosen? It needs to be designed for the long term, not just during operation of the mine but it will also be on the land for a very long time—long after the mine stops operating.
	The Proponent should consult further with locals who know the area to determine a location for its tailings storage facility because they know best where to locate something like that.
	How will the tailings storage facility be reclaimed—will the tailings be removed and disposed of elsewhere or will the Proponent leave it all behind in the tailings storage facility?
Waste Management	How will wastes generated on-site be dealt with (for example will the Proponent use an incinerator?)
	How will hazardous wastes (batteries, oily wastes, etc.) be disposed of?
	How will food/kitchen wastes be dealt with?
	How will you prevent the landfill from attracting wildlife, particularly birds?
Water Use	How will you access water for use on site (use a reservoir or water pipeline—if a pipeline will be used it needs to be protected so that it doesn't leak)?
	Where will the freshwater come from to support the marine laydown area as there is no freshwater source there?
Wildlife	What will the Proponent do if there are effects on the country food (wildlife and fish) we can harvest in the area?
	When the wildlife see changes in the environment they will go somewhere else—this will affect migration routes for caribou and birds as well (they are particularly sensitive during certain times in their lives--breeding, calving, nesting).
	How do the remote wildlife cameras work and how close does the wildlife need to be to trigger the cameras?

Topic	Issues/Concerns/Comments
	Will the Proponent work with HTOs on management initiatives with respect to responding to and dealing with increases to grizzly bear and wolf populations in the area?
	How often are the remote wildlife cameras damaged by the weather, wildlife, etc.?
	How long have you been studying the wildlife in area?
Winter Roads	When is Sabina planning to use the winter road?
	How will Sabina accommodate late freeze up and early break up without damaging the small ponds and lands underneath the winter road?
	There must be monitoring for effects along the winter road especially for contaminants and effects on wildlife.

2.10 Submissions by Other Parties

On November 18, 2014 while the Community Roundtable and Pre-hearing Conference sessions were underway, a written comment submission was received by the Board from the Yellowknives Dene First Nation (YKDFN) for the Board's consideration during the Pre-hearing Conference.

The submission indicated that based on the results from the recent June 2014 survey of Bathurst caribou calving grounds, the GNWT has estimated that there are fewer than 4,000 breeding females in the Bathurst herd which is a significant decline from the estimate of 14,000 breeding females in 2012. On this basis, the submission identified that the short-term action plan developed by the GNWT and Aboriginal Governments in the immediate response to the survey results focused on limiting cumulative impacts on caribou stemming from harvesting, climate change and industrial development. The Yellowknives Dene First Nation also identified that beginning in 2010, the YKDFN has implemented voluntary harvest restrictions to support conservation of the Bathurst herd. However, despite these measures, the YKDFN noted that the population continues to decline.

The YKDFN expressed concern that disturbance of the Bathurst caribou in their calving grounds may not only be the "final straw" for the Bathurst herd, but could also result in increased harvesting pressures on adjacent herds such as the Beverly and Ahiak caribou. Noting the significant sacrifices of Aboriginal people in the NWT to limit further losses to the herd, the YKDFN submission sought: "…a moratorium on all new development in the calving and post-calving grounds, on both sides of the border."[3]

[3] Letter from Chief E. Sangris, YKDFN and Chief E. Betsina to A. Hanson, Director of Technical Services (NIRB), dated November 17, 2014 and received by the Board on November 18, 2014, at p. 2.

In keeping with the Board's normal practice, the Board posted this submission on its on-line registry.[4] Recognizing that many in attendees at the PHC, including Sabina and the intervenors, may have limited access to the internet, and for the convenience of the parties, the Board printed and circulated copies of the submission for these attendees. The Board also gave the participants wishing to respond to the content of the YKDFN's submission an opportunity to include any comments in their closing remarks on November 19, 2014.

On November 19, 2014 following the close of the Pre-hearing Conference, the Board also received a written submission from the Lutsel K'e Dene First Nation[5] (LKDFN) that echoed the submissions of the YKDFN, also seeking a moratorium on all development in the calving and post-calving grounds of the Bathurst herd on both sides of the border.

None of the parties present at the Pre-hearing Conference expressly addressed the YKDFN's submission in their closing remarks.

2.11 Summary of Proponent's Response

In advance of the Technical Meeting, Sabina provided the NIRB with 392 commitments that had been made during the technical review period, to address the information requests and technical issues raised by parties during the technical review period, which Sabina indicated it would track leading up to the submission of its FEIS for the Back River Project. Sabina confirmed that in all cases where parties had suggested that wording be updated in the commitment list circulated as a result of the Technical Meetings, the updated wording was acceptable to Sabina and it would continue to undertake discussions with parties to resolve any further issues.

With respect to the two issues noted as outstanding by the KIA, the request for snowpack monitoring and company commissioned research on the speciation of arsenic in the environment, Sabina provided details during the Technical Meetings and PHC on why it may not be practicable to address these issues to KIA's expectations. Sabina noted that snowpack monitoring would duplicate the monitoring practices already proposed within the Conceptual Aquatic Effects Monitoring Plan and the Air Quality Monitoring and Management Plan, which were designed to identify any changes to the environment, and trigger management practices track and address the issue. Sabina concluded that it did not see benefit to the extra cost of the

[4] Available from the NIRB's online public registry at the following address: http://ftp.nirb.ca/02-REVIEWS/ACTIVE%20REVIEWS/12MN036-SABINA-BACK%20RIVER/02-REVIEW/08-TECHNICAL%20MEETING%20%26%20PHC/02-PREHEARING%20CONFERENCE/03-PHC%20PRESENTATIONS%20%26%20SUBMISSIONS/.

[5] Letter from Chief F. Lockhart, Lutsel K'e Dene First Nation to A. Hanson, Director of Technical Services (NIRB), dated November 18 and received by the Board on November 19. Available from the NIRB's online public registry at the following address: http://ftp.nirb.ca/02-REVIEWS/ACTIVE%20REVIEWS/12MN036-SABINA-BACK%20RIVER/02-REVIEW/08-TECHNICAL%20MEETING%20%26%20PHC/02-PREHEARING%20CONFERENCE/03-PHC%20PRESENTATIONS%20%26%20SUBMISSIONS/.

snowpack monitoring, and felt that the plans proposed in the DEIS included the required components to track down potential sources of contamination in the event that a threshold for mitigation measures was triggered.

In regards to the request for additional environmental studies regarding arsenic speciation, Sabina indicated that the priority of monitoring is to detect and mitigate project-specific impacts, and that in this case the cost of this proposed research may not be warranted due to the already high, naturally occurring arsenic in the area. Sabina noted that it had already proposed arsenic monitoring and mitigation practices in the Mine Waste Rock and Tailings Management Plan, and that the treatment of tailings water would be conducted to Metal Mining Effluent Regulations standards and within the water licence release standards.

Sabina further noted that numerous information items requested in the NIRB EIS Guidelines and through the technical review period for the DEIS were currently being assessed as part of the feasibility study being undertaken by Sabina and that the study would be completed prior to the submission of its FEIS.

2.12 Parties' Submissions on Procedural Issues

At the Pre-hearing Conference, the Proponent, intervenors, community representatives and members of the public were given an opportunity to provide their input regarding the following procedural issues:

1. Anticipated date for submission of the Final Environmental Impact Statement.
2. Date, time and location of the Final Hearing.
3. Timetable for the exchange of documents and information requests prior to the hearing.
4. Formulation of issues for the hearing.
5. Procedures to be followed in the hearing.
6. Equipment, language, interpretation, translation and transcript requirements.
7. Other matters that may aid in the simplification of the hearing (including the parties' views with respect to a site visit for the Board prior to, or during the Final Hearing).

Sabina advised the Board that it anticipates filing the Final Environmental Impact Statement by July 2015.

With respect to the date and time of the Final Hearing, Sabina indicated that it had no specific preferences, other than noting that it would expect the Final Hearing to be scheduled in a timely manner following the submission of the FEIS. With respect to these issues, the Kitikmeot Inuit Association (KIA) advised that if the submission of the FEIS occurs in July 2015 as projected by

Sabina, November or December 2015 would be preferable to hold the Final Hearing, depending on the time that the caribou moved through the area. The Government of Nunavut (GN), Aboriginal Affairs and Northern Development Canada (AANDC) and the Government of the Northwest Territories all noted that the Final Hearing dates should avoid hunting times to ensure full public participation. Members of the public also indicated that dates in the late spring, summer and early fall should be avoided if possible to avoid conflicting with seasonal harvesting activities. Natural Resources Canada (NRCan) also indicated that its experts tend to be less available during the summer and fall months when they are conducting field work/research, and although NRCan would work to accommodate the timing established by the Board, as these limits coincide with the submissions of other parties NRCan's preference would also be to avoid Final Hearing dates in the summer and early fall as well. Fisheries and Oceans Canada (DFO), Environment Canada (EC) and Transport Canada (TC) indicated they could accommodate whatever dates are chosen by the Board for the Public Hearing.

With respect to the location of the Final Hearing, as noted above Sabina expressed no preferences. The KIA noted that although all of the Kitikmeot communities might be impacted, Cambridge Bay and Kugluktuk are the closest to the proposed development areas and as such, the KIA suggested that the Final Hearing be held in either of those communities. AANDC and DFO recommended that the location for the Final Hearing be Cambridge Bay and the community representatives indicated that the location was not important as long as the NIRB supports the attendance of representatives from the potentially affected Kitikmeot communities.

With respect to the timetable for the exchange of information prior to the Final Hearing, the Nunavut Water Board (NWB) indicated that, reflecting that the Back River Project is subject to a co-ordinated process between the NWB and the NIRB, an Information Request (IR) stage associated with the final Type "A" Water Licence Application that Sabina will be attaching to the FEIS would be beneficial. In addition, AANDC, noting its role in the water licensing process also indicated that an IR stage would be helpful, not only for the water licence application attached to the FEIS, but also in advance of the general technical review of the FEIS, as the parties should expect the FEIS to contain a large amount of new information that may warrant IRs prior to parties being able to complete the additional technical review. The KIA also indicated that an IR stage may be useful, or alternatively that the technical review period be extended by 30 additional days to ensure that all parties have an opportunity for comprehensive technical review before the final written submissions must be filed. NRCan indicated that an IR stage may be beneficial or alternatively an extension of the normal technical review comment period could assist parties' review of the additional information to be provided in the FEIS. NRCan also indicated that additional time may not be required if the parties are kept informed by Sabina and are consulted on an on-going basis with respect to outstanding issues prior to the submission of the FEIS. Sabina indicated that with respect to the incorporation of an IR stage in advance of the technical review, that Sabina did not object to this addition, however, wanted to

emphasize to the Board and parties that whatever process is chosen by the Board that the NIRB should ensure timelines are clearly communicated and maintained so that the process does not get bogged down with repeated extension requests and unforeseen delays.

With respect to the issues that remain to be discussed at the Final Hearing, the parties indicated that if Sabina meets the commitments outlined in their response to the parties and as provided at the Technical Meeting (attached to this Decision as Appendix 1) there were no issues that would prevent the Back River Project from proceeding to the next steps in the Review (Sabina's preparation of the FEIS, technical review of the FEIS and a Final Hearing). However, although the parties indicated that the Board's Review could continue to the next stages, many parties at the PHC identified the following issues in addition to those referenced in sections 2.1 – 2.10 of this report which may warrant further discussion during the final phase of this Review, including at a Final Hearing for the Project:

- The NWB identified that depending on the level of information supplied in the Type "A" Water Licence Application appended to the FEIS, the NWB may consider scheduling a Preliminary Technical Meeting in relation to the water licence application immediately following the Final Hearing;
- The KIA identified that further discussion of the need for arsenic speciation and further discussions of Sabina's position with respect to KIA's request for snow pack monitoring would be helpful;
- EC identified that it may be helpful if Sabina and EC provide additional details regarding Sabina's *Metal Mining Effluent Regulations* Schedule 2 Amendment Application;
- TC identified that it expected further detail would be supplied regarding overwintering of barges and that this topic should be discussed between Sabina and TC before submission of the FEIS. TC also indicated that it expected more discussion on navigable water issues during the technical review of the FEIS; and
- Community Representatives indicated that additional information regarding the ranges and potential for the project to impact the Dolphin and Union caribou herds would be beneficial.

With respect to procedures to be followed at the Final Hearing, the parties agreed that Board's Rules of Procedure (effective September 3, 2009) should govern the proceedings for the Final Hearing for the Project. The DFO and NRCan requested direction from the NIRB regarding whether the parties can continue meeting with Sabina outside the NIRB formal processes to assess materials proposed for inclusion in the FEIS, to discuss additional technical issues related to the Project and to work co-operatively to resolve outstanding issues. In response, the NIRB indicated that the Board encourages on-going engagement, but that the parties are expected to provide details of discussions and significant issues that were identified through these types of meetings and discussion of agreements reached or resolution of issues. Further the NIRB

advised that details in respect of discussions relating to the resolution of issues addressed in the FEIS should be provided by the parties or Sabina for inclusion on the public record where reasonable and pertinent to the public nature of the Review, and that Sabina should also consider reporting these details and in particular the results of discussions within the FEIS if possible.

Sabina also indicated that the FEIS submission would be structured as a complete document with a stand-alone Type "A" Water Licence Application being provided as an Appendix. In addition, Sabina noted that providing smaller presentations at the beginning of each discussion on a subject matter had been a positive experience during the technical meetings, and Sabina requested that the NIRB consider the same format for the Final Hearing. NRCan shared Sabina's view that shorter, more focused presentations, followed by questions makes it easier for intervenors to ask more directed questions, ensure that they have the required technical experts available to provide questions and comment and more easily cross-reference presentations to technical review comments. EC also noted the importance of timely provision of an agenda for the Final Hearing as well as confirming participants, presentations and logistical arrangements as soon as possible when the dates for the Final Hearing are confirmed.

With respect to equipment, language, interpretation, translation and transcript requirements, in addition to the Board's normal requirements, the attendees from the Northwest Territories indicated that additional interpreters for the T'licho would be required (only one interpreter was available for the Community Roundtables and PHC). All participants noted that due to the very technical nature of the information being presented that the Board should be mindful of retaining specialized interpreters if possible. The GNWT also noted that meeting the Board's translation requirements in terms of timing and access to specialized translators is a challenge. Consequently, clear direction from the Board regarding these requirements as far in advance as possible is very important.

With respect to other matters that may aid in the simplification of the Final Hearing, the Board polled all the parties regarding whether they would have objections to the Board conducting a site visit in advance of, or as part of, the Final Hearing. No parties had objections to the Board conducting a site visit and the KIA emphasized the importance of a site visit to the NIRB and the Nunavut Water Board gaining a sufficient understanding of key features of the project development area, such as the rugged terrain in the area proposed to be used as the tailings impoundment facilities. Sabina indicated that it would welcome a site visit and agreed with the recommendations from the KIA, AANDC, and DFO that the timing of the site visit should be during the summer months when there was no snow cover and no ice on adjacent water bodies. Sabina advised the Board that a site visit would likely require Sabina to partially open the Goose camp, which Sabina is willing to do with sufficient notice. Several intervenors indicated they would welcome the opportunity to attend the site visit, although the NIRB noted that, depending on site visit logistics, the site visit may not be available to all participants at the Final Hearing,

and may be limited to only the Board and staff or the Board and staff and only a limited number of representatives from the parties and communities.

3. Nunavut Impact Review Board Analysis & Decision

3.1 Issues to be decided

Parties were directed to address the following seven issues:

1. Anticipated date for submission of the Final Environmental Impact Statement
2. Date, time and location of the Final Hearing
3. Timetable for the exchange of documents and information requests prior to the hearing
4. Formulation of issues for the hearing
5. Procedures to be followed in the hearing
6. Equipment, language, interpretation, translation and transcript requirements
7. Other matters that may aid in the simplification of the hearing

3.2 Jurisdiction of the Board

The NIRB conducted the Pre-hearing Conference (PHC) for the Back River Project on November 19, 2014 under the authority of Article 12, Part 5 of the NLCA[6] and the NIRB Rules of Procedure, dated September 3, 2009, Section 21. The NIRB generally conducts a PHC in order to identify and limit the issues of divergence among parties prior to the Final Hearing, to identify any outstanding issues that could prevent the Board's review of the project proposal from proceeding to the next stages of the review, to solicit the views of the parties regarding various procedural issues leading to and at the Final Hearing and to promote the efficient use of time at the Final Hearing.

3.3 Issues

Taking into account parties' submissions and comments from the public at the Community Roundtables and the PHC, the Board's decision on the seven issues is as follows:

[6] Section 12.5.3 states "NIRB may conduct its review by means of correspondence, public hearings or such other procedures as it deems appropriate to the nature of the project and the range of impacts."

3.3.1 Anticipated date for submission of the Final Environmental Impact Statement

Sabina advised the Board that it anticipates filing the FEIS by July 2015.

The Board emphasizes to Sabina that the quality and completeness of the FEIS is the foundation for a timely, effective and thorough assessment and minimizes additional information requests and facilitates ease of review for all parties. The decision as to when Sabina has determined that its FEIS is in all respects complete and complies with the requirements set by the NIRB remains with Sabina. However, if the anticipated timing of the FEIS submission should change the Board requires Sabina to provide the NIRB with an update regarding its revised submission timeline as soon as possible. As all parties can appreciate, and as requested during the PHC, advance notice regarding deviations from the timelines, practice and procedure normally associated with a NIRB Review is appreciated and necessary so that changes can be accommodated in the communities affected by the project, as well as the Board's schedule and those of all participants.

The NIRB notes that the FEIS is expected to include a table which illustrates its concordance with the EIS Guidelines and compliance with the PHC Decision. The Board requests that Sabina provide a similar table which cross-references the commitment listings in Appendices 1 and 2 with sections of the FEIS where corresponding information can be located.

3.3.2 Date, time and location of the Final Hearing

Until the Board has received the FEIS submission, reviewed the submission and considered whether a further opportunity for an Information Request stage is necessary before the technical comment period commences, the Board is unable to confirm the specific dates for the Final Hearing. However, for the benefit of all the parties, assuming Sabina meets the commitments in its submissions and in Appendices 1 and 2 of this report as well as submitting an FEIS that complies with the direction in this PHC Decision and the EIS Guidelines in July, 2015, the Board expects that a Final Hearing could be scheduled in November or December 2015.

The NIRB notes the request from several parties for sufficient advance notice of the date of the Final Hearing and the confirmation of the Final Hearing date will be provided as soon as possible following the NIRB's receipt and compliance review of the FEIS and upon initiation of the technical review period. At that time the Board will also consider the Board's schedule of other ongoing assessments.

The Board further notes that as indicated by several intervenors and Community Representatives, a late Spring/Summer date for the Final Hearing could make it more difficult for potentially affected communities to fully participate, as many community members may be on the land and engaged in traditional activities. Prior to confirming the dates for the Final Hearing, the Board

will consult with the affected communities to identify any timing conflicts with significant community events or other seasonal restrictions.

When determining the Final Hearing date the Board is also required to take into consideration Section 12.2.27 of the NLCA which states:

> *All necessary steps shall be taken by way of notice, dissemination of information, and scheduling and location of hearings to provide and promote public awareness of and participation at hearings.*

The NIRB Rules of Procedure (September 2009) Part III, section 20 also prescribe that at least 60 days' notice of the Final Hearing must be provided.

As indicated by several parties at the PHC, the Board has decided that Cambridge Bay is the most appropriate venue for the Final Hearing. As was done for the Community Roundtable and PHC, the Board will support the travel and participation of Community Representatives from the other Kitikmeot communities of Bathurst Inlet, Bay Chimo, Cambridge Bay, Kugluktuk, Gjoa Haven, Taloyoak, and Kugaaruk potentially affected by the Back River Project so that they are able to participate in the Final Hearing in Cambridge Bay. In addition, the Board will work with representatives of potentially affected communities of the Northwest Territories including Bechoko, Dettah, Gameti, Lutselk'e, Wekweeti, Whati, and Yellowknife-Ndilo to support, to the extent possible, their on-going participation at the Final Hearing.

3.3.3 Timetable for the exchange of documents and information requests prior to the hearing

Once accepted by the NIRB, the FEIS will be subject to a minimum 90 day technical review period. An Information Request (IR) period will run concurrently with the initial 30 days of the technical review period, allowing parties to submit IRs for response where necessary. The Proponent will be required to respond to IRs within 30 days of receipt or less, depending on the breadth, scope and total number of IRs received. The NIRB notes its expectation that the Proponent's FEIS submission will be fully developed to address the specific requirements and general objective of the detailed listing of commitments in Appendices 1 and 2, such that the need for submission of IRs by parties should be very limited. The NIRB reserves the right to extend the technical review period if the Board finds that additional time is necessary to deal with issues arising from the quality of the FEIS submission.

Following the Board's compliance review, the NIRB will establish a process for the submission of IRs and may schedule another meeting of technical experts (i.e. a technical meeting) and/or a PHC. Having noted the parties' request for sufficient advance notice of meetings requiring

technical experts, if the Board determines that a Technical Meeting and or PHC are warranted, the Board will ensure sufficient advance notice is provided.

3.3.4 Formulation of issues for the hearing

The Board also believes that the commitments set out in Appendix 1 will address many of the concerns raised by the community representatives. For example, further discussions and improvements to spill response planning, as well as improvements on impact predictions for caribou, are expected in the FEIS. A number of commitments have been made to improve the discussion on the assessment of winter road routing, and shipping. The Board expects that when fulfilling its commitments, Sabina will take into consideration the issues highlighted at the Community Roundtables.

Based on the NIRB's consultation with parties and potentially affected communities, and in addition to Sabina's commitments set out in Appendix 1, the Board requires Sabina to address the following in its development of the FEIS, or to include the following information within its FEIS submission:

1. Sabina shall include within the FEIS further details on engagement, both planned and completed, with Transport Canada and with communities, residents and organizations in the Kitikmeot Region regarding the following points associated with planned project shipping:
    a. Anticipated shipping vessel sizes, types and experience of operators;
    b. Documentation of bathymetry, approaches, natural hazards, and areas sensitive to disturbance for Bathurst Inlet;
    c. Measures to ensure adequate spill response planning and equipment is in place for project vessels and the Proponent's proposed oil handling facilities;
    d. Communication plan for providing regular updates to local communities and organizations regarding Project shipping schedules; and
    e. Determining the annual open water season for Bathurst Inlet and the Project shipping routes in the Nunavut Settlement Area, including contingency planning should shipping schedules required adjustment (i.e. barge overwintering areas, cat train/ice trail transport plans) owing to earlier than anticipated freeze-up.
2. Within its FEIS, Sabina shall update its discussion of groundwater to include a consideration of permafrost structures within the proposed development area which may contain high-salinity water. Where such structures are identified, it shall include discussion of the potential for high-salinity water within permafrost to be released as a result of Project activities, and include relevant mitigation measures.

3. Sabina shall include within the FEIS, updated draft management plans for the proposed development, including but not limited to: operation of landfarms; the management of wastewater at proposed treatment facilities; the stability and integrity of the tailings impoundment area; the assessment of stability characteristics of terrestrial areas proposed for water discharge; and, the use of cyanide.
4. Sabina shall, within its FEIS, highlight updates or changes made to its adaptive management and/or monitoring plans for caribou and shall discuss how these changes were achieved in consultation with the governments of Nunavut and the Northwest Territories. The discussion shall also clearly identify thresholds for adaptive management (i.e. work stoppages).
5. Sabina shall, where possible and in consultation with the Government of the Northwest Territories, provide additional analysis (quantitative or qualitative) in the FEIS of project impacts to caribou reproductive productivity with the objective of increasing confidence in the conclusions of Sabina's effects assessment.
6. Sabina shall include within the FEIS additional discussion on project impacts to caribou in the context of the Bathurst herd's current low population levels. Sabina's assessment shall include recognition of the low population levels and include a discussion of potential project effects on population recovery. Sabina shall also describe how its mitigation measures may contribute to improved rates of recovery, and shall discuss how it may contribute to any initiatives or efforts to improve rates of recovery.
7. Sabina shall demonstrate within the FEIS how the timing of its project activities may interact with harvesting by communities.
8. Sabina shall include within the FEIS additional information on historic annual variation in Bathurst caribou herd movement and utilization of calving and post-calving areas.
9. Within its FEIS, Sabina shall demonstrate a consideration of the need for, and potential incorporation of, work suspension protocols and other adaptive management measures for caribou. This shall include consideration of triggers for the implementation of such measures within relevant management plans.
10. Sabina shall clearly demonstrate within its FEIS how monitoring programs will be designed to verify impact predictions made in the FEIS and describe how it plans to update monitoring programs and impact predictions during the life of the Project.
11. Sabina shall include within its FEIS, a clear rationale and discussion for its preferred zone of disturbance chosen for the assessment of impacts to caribou.
12. Sabina shall include within its FEIS, updated information to clarify how and where areas of uncertainty in impact predictions have been identified, and shall identify where a precautionary approach to adaptive management and/or monitoring has been undertaken.

13. Sabina shall include within its FEIS a revised assessment of the marine environment and impacts from proposed shipping activities to include the marine shipping route within the Nunavut Settlement Area. The assessment shall demonstrate consideration for potential impacts to VECs and VSECs specific to shipping activities, cumulative effects of shipping in relation to other proposed and reasonably foreseeable projects are considered, and shall include appropriate mitigation and monitoring measures.
14. Within its FEIS, Sabina is expected to revise its cumulative effects assessment to address the following:
    a. Inclusion of all presently approved and reasonably foreseeable (i.e. within the NIRB's Review process) industrial developments within the Kitikmeot region within its consideration of cumulative effects to VECs and VSECs, including the marine shipping components of each approved or potential development.
    b. Provide clarification or justification for its use of the 95^{th} percentile distribution range for its winter cumulative effects assessment boundary, while employing a 50^{th} percentile distribution range for the summer range. Given noted variability in caribou ranges, Sabina shall, where possible, demonstrate consideration for the use of a 95^{th} percentile for both summer and winter ranges, and, where note possible or feasible to do so, shall provide justification.
15. Sabina shall include within its FEIS, confirmation of the removal of the Tibbit-Contwoyto road and potential connections from the scope of the Project proposal. Should Sabina wish to have this road connection remain under consideration for the assessment, it must include this component within the LSA, RSA, and include it for consideration as part of the assessments of all VECs and VSECs, including cumulative and transboundary impacts.
16. Sabina shall include within its FEIS, clearly defined periods for proposed post-closure monitoring with justification for the chosen period(s) for each project component and/or VEC/VSEC, as applicable.
17. Sabina shall within its FEIS, highlight areas where significance determinations have been further updated to take into consideration the concerns raised by reviewers.
18. Sabina shall include within the FEIS, updated maps or illustrations which clarify the direction of migration of animals.
19. Sabina shall provide within its FEIS, its statistical analyses methods and results in tabulated form where possible, and shall provide clear justification for all impact analyses and rationale for choosing the RSA, LSA, and other parameters in order to assist the reader in verifying the reasonability and reproducibility of said analyses as consistent with the NIRB's EIS Guidelines, section 7.7.

Given the issues raised to date in this Review, the NIRB believes it will be necessary for government departments and agencies to be prepared to address the following key issues within their technical review of the Proponent's FEIS submission, including their final written submissions to the Board and during participation at the Final Hearing for the Project:

- Kitikmeot Inuit Association: Discussion of the status of the Inuit Impact and Benefits Agreement negotiations, with a focus on non-confidential details and any progress made with addressing concerns of the residents of local communities related to potential project effects.
- Government of Nunavut: Discussion of how lessons learned from approved mining developments such as the Meadowbank Gold Mine and the Mary River Iron Mine may have impacted the cost, timing, and delivery of public services and programs under the responsibility of the Government of Nunavut (e.g. daycare, education, policing, health care, etc.).
- Government of Nunavut & Government of the Northwest Territories: Population health of caribou herds in proximity to the proposed development area, particularly the Bathurst caribou herd. A discussion of ongoing and/or planned harvesting restrictions and other conservation measures in Nunavut and the Northwest Territories, as well as a review of the Proponent's impact assessment conclusions and proposed adaptive management plans for caribou and caribou habitat.
- Aboriginal Affairs and Northern Development Canada: Adequacy of proposed security and reclamation estimates provided by the Proponent within its FEIS.
- Aboriginal Affairs and Northern Development Canada & Natural Resources Canada: Structure and suitability of the engineering and design of structures associated with the proposed tailings impoundment area, with emphasis on any considerations described in the FEIS for permafrost, climate change and contingencies for possible structural failure.
- Environment Canada: Information from Canadian Ice Services, including changes to ice regime specific to the Nunavut Settlement Area that may affect Project related shipping, including specifically, the timing of freeze-up in Bathurst Inlet and observed or anticipated changes to ice formation in this and other areas relevant to the shipping route(s) as proposed for the Back River Project.
- Transport Canada & Canadian Coast Guard: Navigability of proposed shipping routes, particularly Bathurst Inlet, for the proposed vessel types, timing of shipping and specific approaches described by the Proponent.

Following the review of the FEIS, the Board will further formulate the issues for the Final Hearing.

3.3.5 Procedures to be followed for the hearing

As agreed to by the parties at the PHC, the Final Hearing will proceed in accordance with the NIRB Rules of Procedure, dated September 3, 2009.

Formal technical presentations will be scheduled to take place first and will be organized by subject. As noted by Sabina and some intervenors, shorter, issue-focused technical presentations will be expected for this part of the Final Hearing. The technical sessions will be followed by less formal community roundtable sessions, where short, focused presentations by Sabina and the intervenors will be followed by rounds of questions and comments from community representatives. All parties are required to ensure sufficient technical expertise is available for both the technical sessions and the community roundtable components of the Final Hearing.

For anyone wishing to participate in the Final Hearing but who is not automatically considered to be an "Intervenor" under the NIRB's Rules of Procedure, the Notice of Final Hearing will contain additional details and specific timelines as to how to bring an application to become a formal Intervenor at the Final Hearing.

3.3.6 Equipment, language, interpretation, translation and transcript requirements

As identified by the community representatives from the T'licho, to ensure that sufficient capacity is available for simultaneous interpretation throughout the proceedings, more than one T'licho interpreter will be required at the Final Hearing. In addition, the Board expects to implement normal requirements associated with the Board's Final Hearings with respect to the equipment, language, interpretation, translation and transcript. The Board will issue specific direction regarding these requirements closer to the Final Hearing date.

3.3.7 Other matters that aid in the simplification of the hearing

As established in Rule 27.1 of the NIRB's Rules of Procedure, the Board has determined that scheduling a site visit either in advance of, or as part of the Final Hearing would be beneficial. When the timing of the Final Hearing is confirmed by the Board, further details regarding the schedule and logistics for the site visit will be provided. As noted at the PHC, depending on the logistical limitations at the site visit, the Board may not be able to ensure that other Final Hearing participants are able to accompany the Board for the site visit. However, the agenda, activities and stops while at the site will all be agreed to in advance with the Proponent, parties and the Board. Further, a public summary of the site visit will be attached as an Appendix to the Final Hearing Report.

4. Coordinated Process

4.1 Nunavut Water Board

On February 24, 2009 the NIRB and the NWB released a Detailed Coordinated Process Framework to demonstrate how the NIRB and the NWB would coordinate their efforts to avoid unnecessary duplication in the review and processing of Type "A" water licence applications for projects undergoing a NIRB Review, pursuant to Sections 13.5.2 and 13.6.1 of the NLCA. In response to comments, on September 4, 2009 the NIRB and the NWB issued a revised Detailed Coordinated Process Framework describing the planned coordination between the NIRB and the NWB.

In its original June 26, 2012 application to the NIRB, Sabina requested that should the project be referred to a Review under Part 5 or 6 of the NLCA, it proceed as a NIRB-NWB coordinated process. To date, the NWB has participated in the NIRB's Review as follows:

- Scoping meetings and development of the *Final Scope List for the NIRB's Assessment of the Back River Project (March 18, 2013)*;
- Development of Section 1.4 and *Appendix C: Nunavut Water Board Information Requirements for Type A Water Licence Application* in the *Guidelines for Preparation of an Environmental Impact Statement (April 30, 2013)* which defined the information requirements related to water licensing; and,
- Provision of technical advice at the November 2014 Technical Meeting and Pre-hearing Conference.

The NWB's technical advice on the DEIS noted that due to the amount of information outstanding in the document, additional time and requests specific to the water licence application may be required during the next phase of the NIRB's Review. The NWB would consider holding a preliminary technical meeting on the Type "A" Water Licence Application for the Back River project following the NIRB's Final Hearing, contingent on the completeness of the Draft Water Licence application contained within the FEIS. Additional information from the NWB's technical review of the draft water licence is included as Appendix 3.

5. Conclusions of the Board

The NIRB believes that Sabina will resolve many of the technical issues raised by parties if it endeavours to comply with the specific direction and implied intention of the NIRB's EIS Guidelines and by fully meeting its commitments made during the technical meeting as set out in Appendix 2 of this Decision, and those commitments made by Sabina as a result of parties' technical review of the DEIS as set out in Appendix 1. The Board accepts the Commitment Lists

as set out in Appendix 1 and 2, and notes that the fulfilment of these is a key part of the FEIS requirements. The Board encourages Sabina to continue to work with parties to resolve the balance of the issues identified at the Community Roundtables and PHC.

The Board expects Sabina and the intervenors to consider the comments received in the public review of the DEIS and to respond to the issues raised in the comment submissions as each party considers appropriate. The Board also encourages the parties to engage in discussions with those providing comment submissions with a view to resolving outstanding issues, to the extent possible, prior to the Final Hearing to be held as part of the Board's Review.

Once completed, Sabina should direct its FEIS submission to the NIRB at the following address:

Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Upon receipt of the FEIS submission, the Board will make its findings regarding acceptance of the FEIS public after an internal 15 day review. In preparing its FEIS for submission, the Proponent should be aware of the need to include a concordance table that demonstrates where the EIS Guidelines have been met, the various commitments outlined in Appendices 1 and 2 of this report have been met, and finally, where the specific direction provided within this report has addressed. Furthermore, the Board expects that Sabina will include within its submission, a table which lists and describes any items that were required by the NIRB Guidelines and which Sabina noted within the DEIS as being deferred to the FEIS. In keeping with the format for a concordance table within the FEIS, it should provide necessary reference locations to enable reviewers to easily locate and review the relevant material.

The NIRB will provide further details and direction on process for the final phase of the Review, consistent with the items noted in the sections above, and will take steps necessary to ensure effective public engagement and participation in the steps to follow once the FEIS has been accepted.

The Board appreciates the efforts by all those involved with its Review thus far, and looks forward to working with all parties in the final phase of its Review of the Back River Project.

Signed this 19th day of December, 2014.

Elizabeth Copland
Chairperson
Nunavut Impact Review Board

Appendix 1: Commitments from Technical Meeting and Pre-hearing Conference

1) Please note that any commitments requiring submission of materials prior to the Final Environmental Impact Statement (FEIS) are also to be included within the FEIS where applicable.

2) Where it is requested that data be provided, it is expected a related discussion will also be included within the FEIS.

3) Where no timelines are indicated, Sabina Gold & Silver Corp. (Sabina) is to provide as per requests of the party putting the commitment forth.

Commit-ment #	Party	Reference (relevant IR or TRC)	Commitment	Comments
DAY 1				
DEIS Organization, Conclusions and Methodologies				
Alternative Assessment including Geology, Geotechnical Information and Waste Management				
1	AANDC	AANDC TRC 1	Sabina commits to show within the FEIS how alternatives were analyzed and to explain when options are dropped off, identify rationale for the selection, and clarify which alternative options remains a possibility. This should include how environmental and socio-economic factors have been applied to the selection of alternatives.	
2	NRCan	NRCan 7	Sabina commits to provide any additional site specific investigations (e.g. geotechnical, geophysical) of the foundational materials for proposed alignments for dykes and embankments, that are undertaken in the next six months, in the FEIS.	
3	KIA	KIA IR 9, 10, 12	Sabina commits to providing information on ground ice based on results of geotechnical site investigations conducted between the release of its feasibility study and submission of the FEIS.	
4	KIA	IR 15	Sabina commits to presenting the seepage data for the airstrip as soon as practical and to assessing the results in the context of an adaptive management framework within the waste rock management plan to be submitted as a part of the FEIS.	
5	KIA	n/a	Sabina commits to demonstrating consideration of realignment of the winter road north of Tahikafalok Lake (Bathurst Lake) to the marine laydown area in order to address potential impacts to identified riparian zones. This reconsideration may include a site visit conducted in coordination with the KIA, discussion of which shall be included within the FEIS.	
6	NWB	n/a	Sabina commits to providing a discussion of potential tailings slurry density, taking into account other projects in the north, specifically Meadowbank. This information wil be included wtihin the FEIS.	
7	NRCan	NRCan 36/37	Sabina commits to further consult and engage with NRCan regarding its response to technical review comments 36 and 37 prior to submission of the FEIS.	
8	GN	IR 12	Sabina commits to removing reference to a hard-surface airstrip in the FEIS.	commitment 24 from GN submission
9	GN	CR 20	For the FEIS, Sabina commits to detailing whether bulk fuel storage will include overwintering of fuel vessels in sea ice.	commitment 25 from GN submission
Atmospheric Environment including Climate, Air Quality, Noise and Vibration				
10	NWB		Sabina commits to demonstrating in the FEIS that it has considered the experience gained at Meadowbank with respect to dust suppression as well as its related effects assessment, and water consumption rates.	
11	KIA	CR 14	Sabina commits to come up with a methodology for modelling climate change and to discuss it with the KIA and other interested parties prior to the submission of the FEIS.	
12	KIA	KIA IR 18	Sabina commits to providing more detail on the operation of the incinerator and management of emissions in the FEIS. Details will include: the make and model of the incinerator including a letter from the manufacturer stating that it is designed to incinerate sewage sludge, adheres to EC's guidance document on batch incineration, and is a dual-chamber incinerator. Details will be provided for adapative management if elevated metals, dioxans, furans, and/or ammonia are detected through the dustfall monitoring program.	

13	GN	IR 18	At this time the Goose Property Airstrip will not be designed to accommodate aircrafts as large as a Boeing 767. If larger aircraft are selected as a viable option, Sabina commits to updating the air quality and noise models and conduct an effects assessment to address the potential effects of this larger class of aircraft. This would be included in the FEIS.	commitment 48 from GN submission
14	GN	TRC 35	Dustfall sampling locations will be chosen to ensure that all large sources of emissions are monitored. Sabina will consult with the GN on the number and location of sampling sites prior to finalizing the Air Quality Monitoring Plan for the FEIS.	commitment 49 from GN submission
Aquatic Environment including Water Management, Freshwater Environment, Hydrology, Hydrogeology and Mine Rock Characterization				
15	NWB		Sabina commits to include the conceptual design of all water management structures within the water licence application filed as part of the FEIS.	
16	KIA	IR 22, 23, 25, 26	Sabina commits to develop site specific water quality objectives where relevant for parameters that naturally exceed CCME protection of aquatic life levels. This pertains to each of the project locations including Goose, George and the Marine Laydown Area.	
17	AANDC	AANDC 13	Sabina commits to reviewing table 4.8-1 for the FEIS to ensure clarity with the text that water will not be discharged to the aquatic receiving environment prior to meeting site water quality objectives.	
18	AANDC	AANDC 15	Sabina commits to providing more details in the FEIS on the waste water management strategy including sewage effluent. This will include discharge locations and the characteristics of those locations as well as impacts on the receiving environment, attenuation capacity, end of pipe locations, seasonal considerations, alternatives, and design or engineering contingencies.	
DAY 2				
19	AANDC	AANDC-22	Sabina commits to reviewing the need for contingency measures in relation to all potentially contaminated discharge (of particular concern and interest to AANDC are potential discharges from the waste rock storage areas, tailings impoundment area, and the pit lakes at closure). Where it is deemed that contingency measures would significantly reduce the risk to the environment, those measures will be presented in the FEIS. Where contingency measures are not provided, a rationale will be provided as to why they are not necessary.	
20	EC	EC-26	Sabina commits to including sensitivity analysis for approach of zero-discharge volumes within the detailed site wide water and load balance presented in the FEIS to address higher than predicted water volumes.	
21	EC	EC-28	Sabina will provide detailed effluent quality predictions, an assessment of the receiving environment concentrations, and identification of water quality objectives within the FEIS.	
22	DFO	3.1.1	As part of the Site Preparation Application and in the FEIS, Sabina commits to provide DFO and other parties with supplemental information on how the Rascal stream realignment may affect the following: existing channel stability and erosion potential; the potential for re-suspension of sediments in ponds; and areas with undefined channels.	
23	DFO	3.1.1 (DFO 2)	As part of the Site Preparation Application and in the FEIS, Sabina commits to provide DFO and other parties with supplemental information on whether Arctic grayling spawning and rearing habitat is limiting within the watershed for the population using the stream.	
24	DFO		As part of the Site Preparation Application and in the FEIS, Sabina commits to provide DFO and other parties with supplemental information on how the Rascal stream realignment may result in Arctic grayling spawning and egg stranding in the deactivated reaches of Rascal Stream East.	
25	KIA	IR-29	Sabina commits to provide a discussion of the expected seepage volume from the tailings storage facility in the perimeter ditches and a threshold for a maximum acceptable flow to be included in the FEIS. Sabina also commits to provide further discussion of mitigation within the FEIS and specific adaptive management protocols that would be triggered should the proposed thresholds be breached.	

26	KIA	IR-30	Sabina commits to ensuring that all mine phases are addressed within plans listed in the FEIS (as presented in the DEIS table 13.1), including: the Mine Waste Rock and Tailings Management Plan (addition of construction and closure phases), the Site Water Monitoring and Management Plan (addition of temporary and final closure phases), and the Fish Offsetting Plan (addition of final closure phase).	
27	KIA	n/a	Sabina commits to working with the KIA, EC, and DFO on the components of the final AEMP prior to submission of the FEIS.	
28	KIA	IR-16	Sabina commits to providing the appropriate justification for design criteria adopted for any water management structures at Lytle and Occurrence Lakes and to demonstrate a consideration for whether or not contingency plans are warranted within the FEIS.	
29	AANDC	AANDC-23	Sabina commits to providing within the FEIS, an estimate of water quantity and quality produced throughout the project, parameters to form the basis for design of water management structures, monitoring that will be required at each of the sites and how this monitoring will be effective, and associated treatment options.	
30	AANDC	AANDC-26	Sabina commits to providing in the FEIS an updated preliminary closure plan which includes definitions of temporary closure and care and maintenance including outlining what activities and monitoring may continue at the project subject to the phase within which care and maintenance is implemented.	
31	EC	EC-24, EC-36	Sabina commits to include the marine laydown area within water management plans as presented in the FEIS.	
32	EC	EC-27	Sabina commits to incorporate contributions from blasting reagent residues in the water balance and load estimates submitted within the FEIS.	
33	EC	EC-31	Sabina commits to identify appropriate surrogates for total suspended sediment (TSS) assessment and to continue to calibrate this with build data.	
34	TC		Sabina commits to providing sufficient detail in the FEIS that would clarify any alternative to relocate or adjust the spatial location of a tailings impoundment area with respect to any involved or surrounding waterbodies as such relate to navigability.	
35	KIA		Sabina commits to giving consideration to high salinity within its groundwater model and subsequent data presented within the FEIS.	
36	KIA	KIA CR-10	Sabina commits to further sampling and analysis during operations where required to support waste rock management activities. It is anticipated that there will be two components to this work, including collection and analysis to classify waste rock during the mining process, and sampling and anaysis to verify the effectiveness of the management plans. Details on these plans will be provided in the waste rock management plan submitted as part of the FEIS.	
37	NRCan	NRCan-23 24	Sabina commits to addressing these considerations and to further investigating the methods for predicting and managing groundwater inflows (such as those suggested in Appendix O of the DEIS) in the site water and monitoring management plan in the FEIS.	
Socio-Economic Environment and Assessment including Heritage Resources				
38	GN	GN-1	The Proponent commits to include project-specific data concerning employee community of residence and number of employees that relocated from the year prior (to and from, for Cambridge Bay, Kugluktuk, Taloyoak, Gjoa Haven, and Kugaaruk) in their Socio-Economic Monitoring Program within the FEIS and subsequent annual reports. The details of this process will be captured in the Terms of Reference for the project-specific Back River Socio-Economic Monitoring Committee.	
39		GN-3	Sabina commits to provide a summary of initiatives it supports through its Donations Policy pertaining to "youth and education" and "community wellness and traditional lifestyle" in the FEIS and to provide details of a potential summer student program directed at post-secondary.	

40		GN-4	Sabina commits to provide full National Occupational Coding in its workforce schedule, and to identify and register with the appropriate GN department, all trades persons and apprentices working within the Project operations. Sabina will consult with the GN's Department of Family Services Career Development Division to identify current apprentice students for training and employment.	
41		GN-17, GN-18	Sabina commits to work with the GN's Territorial Archaeologist to provide the maps and site status reports in a manner and timeline that is agreeable to both parties and to be determined at a later date. Timing will be included within the FEIS.	
42		AANDC-35	Sabina commits to working with the GN, AANDC and other interested parties to develop a draft Terms of Reference for a Back River Socio-Economic Monitoring working group; a summary of the draft Terms of Reference will be provided in the FEIS.	
Public Engagement and Incorporation of Inuit Qaujimajatuqangit				
Terrestrial Environment including Wildlife, Migratory Birds, Species at Risk and Vegetation				
43	KIA	KIA IR-1, 2, 4	Sabina commits to providing within the FEIS, more detail specifying site-specific monitoring plans, specific thresholds and triggers and adaptive management responses with regard to wildlife.	
44	KIA	KIA IR-1, 2, 4	Sabina commits to providing additional clarity on project specific monitoring associated with wildlife VECs in question within the FEIS (noting that these would not be at the population level, and would be focused on project effects).	
45	KIA	KIA CR-1, 2, 3, 4	Sabina commits to provide within the wildlife and cumulative effects assessments, a better explanation or justification for the magnitude rating cut off points including the divisions between nil, low, and moderate. If there is not sufficient data to justify these divisions as suggested above, Sabina commits to remove the restriction from the methodology chapter that the EIA practitioner must conclude that an effect is not significant if they select low.	
46	KIA	KIA CR-1, 2, 3, 4	Within the wildlife and cumulative effects assessments, Sabina commits to include species specific duration categories with justification for each, or if not sufficient data to justify species specific duration categories, as suggested above, Sabina removes restriction that the EIA practitioner must conclude that an effect is not significant if they select short term as their duration value.	
47	EC	EC-10; 6.1.10	Sabina commits to reduce disturbance to known colonies of nesting, feeding, or moulting birds by imposing flight restrictions to maintain a distance of 3000 metres from colonies of birds.	
48	EC	EC-9; 6.1.9	Sabina commits to demonstrating consideration for inclusion of EC's recommended setback distances within the FEIS.	
DAY 3				
Terrestrial Environment including Wildlife, Migratory Birds, Species at Risk and Vegetation - *continued*				
49	GN	IR 14	Sabina commits to updating Table 5.6-2 (Cumulative Habitat Loss in the Bathurst Caribou CEA Boundary) in the FEIS. For closed or past developments it was assumed that dust no longer contributes as habitat alteration and wildlife are anticipated to re-inhabit these areas, thus blank cells should read NA.	commitment 94 from GN submission
50	GN	CR 15	For the FEIS, Sabina commits that updates will be provided to include the most recent 2012 data in Volume 5, Table 5.1-2 (Bathurst Caribou Herd Population Numbers and Breeding Females from 1986 to 2009).	commitment 95 from GN submission
51	GN	IR 19	Sabina commits to include the Nunavut Wildlife Act in the List of Permits, Licenses, and Authorizations Required for the Project in the FEIS.	commitment 96 from GN submission
52	GN	GN-20	Sabina commits to including text in the FEIS referencing Project-related effects in the context of Nunavut wildlife management populations.	commitment 97 from GN submission
53	GN	TRC 20	Sabina has assessed areas where wildlife may be disturbed by noise as indirect habitat loss. Sabina commits to providing additional information (which may include literature) within the FEIS to describe potential effects to wildlife that may continue to use this area, including energy expenditure, stress and population health.	

54	GN	TRC 21	Sabina commits to include in the WMMP as part of the FEIS, a plan to collaborate in programs led by the GN in future population level monitoring of grizzly bear, wolverine, muskox, and caribou, if and when such monitoring is undertaken.	
55	GN	TRC 21	Sabina commits to demonstrate in the FEIS how the remote camera study (if this is the program used) design will meet species-specific monitoring objectives taking into account the differences in sampling requirements amongst program objectives as well as differences in the expected densities and distribution amongst the species being monitored. Clarify how remote cameras will be effective at detecting change in low density species.	commitment 344 from GN submission
56	GN	TRC 21	Sabina has made the commitment to participate in regional monitoring plans, lead by government, for several wildlife VECs, including caribou, muskox, grizzly bear and wolverine if and when they exist. At that time, these regional, government-led programs will replace the proposed regional monitoring plans in the DEIS WMMP. An update on this commitment is to be provided within the FEIS.	
57	GN	TRC 21	Sabina commits to verifying model results that determined areas of indirect habitat loss for wildlife using actual field noise monitoring results and to present this information within the FEIS.	
58	GN	TRC 21	Sabina commits to include in the WMMP as presented in the FEIS, additional details on the design of focal species monitoring programs including the metrics being measured, sampling design and intensity, threshold values for acceptable impacts and expected sample size and ability to detect when thresholds have been exceeded.	
59	GN	TRC 22	Sabina commits to include within the FEIS, additional details for mitigation measures and the associated implementation protocols, specifically: (a) Human-wildlife conflict management, including the establishment of i) Project-related wildlife mortality thresholds above which mitigation measures would be revised and adapted ii) communication protocols with regulatory agencies and co-management organizations on the use of deterrents, translocations or destruction of wildlife especially bears and furbearers. (b) Nest management plans (c) Den site management plans.	
60	GN	TRC 22	Sabina commits to update within the FEIS, mitigation measures and associated implementation protocols to include detailed staged reduction in Project activities in response to approaching wildlife, including the different stages of work reduction and how they would be triggered.	
61	GN	TRC 22	Sabina commits to, within the FEIS, clarifying inconsistencies regarding proposed mitigation measures relating to staged reduction in Project activities in response to approaching wildlife, including considerations of wildlife group size and composition, season, sensitive periods, and distance to Project.	
62	GN	TRC 22	Sabina commits to the development of a mitigation response decision tree for approaching caribou. This would consider multiple variables such as species, group size and composition, season, sensitive periods, and distance to Project in determining the appropriate mitigation response. This will be included within the FEIS.	
63	GN	TRC 22	Sabina commits to enhance monitoring mechanisms for detecting wildlife approaching the Project as triggers for mitigation actions such as blasting management, traffic management and staged work reductions. These should take into consideration the required time for implementation of mitigation measures following detection of approaching wildlife. This detection capacity can be enhanced by giving consideration to measures such as the use of dedicated wildlife monitors stationed at key points around the site and at distances up to 4km from the site during sensitive caribou periods, use of spotting scopes for distant scanning, height of land surveys and potentially the use of elevated observation platforms around the project site.	
64	GN	TRC 28	Sabina commits to including potential effects on hunting allocations due to potential Project related direct mortalities of grizzly bears within the FEIS.	
65	GN	TRC 27	Sabina commits to update the FEIS to include the final results of the grizzly DNA study conducted in 2012 and 2013 including additional details on methodology and analytical approach as requested by the GN.	

66	GN	TRC 27	Sabina commits to develop adaptive management measures to mitigate potential impacts to grizzly bears from defense kills should set thresholds be exceeded and to include this information within the FEIS. Adaptive management measures may include undertaking DNA mark-recapture studies for grizzly bears similar to those conducted in baseline studies to assess the significance of potential impacts.	
67	GN	TRC 24	Sabina will include more detail on the definition of “population and subpopulation health” and “acceptable risk thresholds” in definition of Significance Ratings in the FEIS.	commitment 98 from GN submission
68	GN	TRC 24	Sabina commits to develop adaptive management measures to mitigate impacts to caribou should any of the 4 herds were to dramatically shift ranges or migration routes into the Project area during the life of the Project and to include this within the FEIS.	
69	GN	TRC 29	Sabina commits to develop a stand-alone Bear Safety and Response Plan that pulls together relevant information provided in the DEIS and to include thresholds for acceptable impacts associated with human-bear conflicts (e.g. number of problem bear encounters per year, number of translocations required, number of direct mortalities resulting) and proposed actions to be taken if these thresholds are exceeded. This plan should also include information on coordinating with government agencies and co-management partners and will be included within the FEIS.	
70	GN	TRC 30	Sabina commits to revise the FEIS to validate the Habitat Suitability Index (HSI) that was used in the impact assessment for muskox.	
71	GN	TRC 31	Sabina will update and expand the management and monitoring sections of the WMMP that deal with attraction of predators (including wolverine) to camps and managing problem wildlife (including wolverine). This information will appear in the FEIS.	commitment 349 from GN submission
72	GN	TRC 31	A discussion surrounding wolf, wolverine, and grizzly bear predation of ungulates will be added to the ungulate sections of the FEIS.	commitment 102 from GN submission
73	GN	TRC 32	Additional information on the proposed raptor monitoring protocols will be added to the wildlife mitigation and management plan (WMMP) for the FEIS following guidance on measuring and analyzing a zone of influence (ZOI) on nest success by the Canadian Wildlife Service. This information will appear in the FEIS.	commitment 350 from GN submission
74	GN	TRC 32	Sabina commits to update the WMMP to include an example of a nest specific management plan for a nest located with the PDA to illustrate the range of mitigation and monitoring actions that would be undertaken.	
75	GN	TRC 32	Sabina commits to include in the WMMP for the FEIS, a protocol for working with the GN and other co-management partners to mitigate impacts on nests located within the PDA, including the requirement for seeking regulatory approval prior to any action that could potentially damage/destroy or disturb these nests.	
76	GN	TRC 32	Sabina commits to provide additional detail to the raptor chapter of the FEIS (Volume 5, Chapter 10) to provide relevant citations to support mitigation activities.	commitment 103 from GN submission
77	GN	TRC 36	Sabina acknowledges the requirements of the Scientists Act and commits to ensuring that legislated reporting requirement under the Scientists Act are reflected in the FEIS.	commitment 104 from GN submission
78	GN	TRC 37	Sabina commits to update the table on Permits and Approvals for Mine Development in the FEIS to include all relevant authorizations required for the life of the Project.	commitment 105 from GN submission
Marine Environment and Marine Transportation				
79	EC	EC 2 / 6.1.2	Sabina commits to recommending that shippers adhere to the 30 km setback from Prince Leopold Island as proposed by EC and assuming ship safety. This information will be included within the FEIS.	
80	EC	EC 5 / 6.1.5	Sabina commits to identifying and considering known colonies of migratory birds along the shipping route and to ensure that information is considered for project shipping. This information will be included within the FEIS.	

81	EC	EC 25	Sabina commits to characterization of the brine effluent and review of alternative discharge strategies and to a further review in the FEIS of monitoring requirements of discharged brine for compliance with subsection 36(3) of the Fisheries Act prior to release to the marine environment.	
82	KIA	n/a	Sabina commits to update within its FEIS, a discussion on community level capacity in spill planning and response.	
83	NIRB	n/a	Sabina commits to including additional information within the FEIS as related to the potential for cumulative impacts from shipping activities associated with other proposed and approved development projects within the Kitikmeot Region, including Doris North, Phase 2 Hope Bay Belt, Hackett River, and Izok Corridor.	
84	GN	GN-25	Sabina will review the references related to occurrence of polar bears in the marine environment in particular known summer time concentrations along the shipping route and update the information within FEIS as needed.	commitment 99 from GN submission
85	GN	GN-26	Sabina commits to working within the existing regulatory framework defined by Transport Canada. An approved SOPEP will be in place by the shipping provider prior to the commencement of any shipment.	commitment 100 from GN submission
86	GN	GN-26	Sabina will work with the GN and other agencies to acquire appropriate public data related to polar bear distribution and density. To the extent possible, this information will be used to assess worst case and best case scenarios should a fuel release or spill event occur in the marine environment along the shipping route. Using the available data where applicable, Sabina will for the FEIS: 1) highlight rough densities of polar bears along the shipping routes; 2) provide further rationale on the risk of potential spills and provide rationale around the parameters of magnitude (i.e., location of spill, volume of spill, area of dispersion, type of spill, response time); 3) identify worst case scenario (i.e., highest density of polar bears, high volume, worst type of liquid) and best case scenario (i.e., lowest density of polar bears, low volume, lightest type of liquid).	commitment 101 from GN submission
87	GN	GN-26	Sabina commits to participate in relevant research and management initiatives and increasing understanding and mitigation of potential cumulative effects associated with the Project's shipping activities.	
88	GN	n/a	Sabina commits to limit their shipping period to the open water season and to not ship within the Nunavut Settlement Area after October 15 each year (except under unforeseen and exceptional events including consideration for vessel safety). All vessels utilized will be appropriate as defined by Transport Canada's Zone Date System. This will be included in the FEIS.	
Human Health and Risk Assessment				
89	KIA	n/a	Sabina commits to review table 6.4.4 (volume 8, ch 6) against figure 6.4-8 and to ensure all pathways identified in figure 6.4-8 are included in tables of the FEIS. Sabina shall also ensure that all inputs (including incinerator) are included in the risk assessment model as per figure 6.4-8.	
90	KIA	IR 3	Sabina commits to update the human health risk assessment and terrestrial and aquatic wildlife risk assessments with more realistic forage and consumption numbers.	
Cumulative Effects Assessment				
91	KIA	KIA CR 3	Sabina commits to, within the wildlife total effects section, and within the effects assessment and cumulative effects assessment, include additional references from applicable studies with high statistical power on total effects and for other studies report a lack of power analysis or low power if applicable and revise discussion accordingly within the FEIS.	
Accidents and Malfunctions				
92	AANDC	AANDC 16	Sabina commits to include in the FEIS, plans or design contingencies where appropriate, that are in place to prevent and manage reasonably foreseeable worst case scenarios as they relate to accidents and malfunctions.	
93	AANDC	AANDC 16	Sabina commits to extending the accidents and malfunctions assessment into the closure and post closure periods, within the FEIS.	

94	NRCan	n/a	Sabina commits to update and clarify to the extent possible, Project components and activities related to explosives manufacture and storage within the FEIS.	
95	NRCan	n/a	Sabina commits to provide an updated Explosives Management Plan within the FEIS and to ensure that the plan accurately describes explosives manufacturing and storage and which clarifies whether Sabina anticipates storing explosives components at the marine laydown area.	
96	NRCan	n/a	Sabina commits to carrying forward updated project components and activities associated with explosives manufacturing and storage in its assessment of accidents and malfunctions (including the marine laydown area if applicable) within the FEIS.	
97	GN	GN-26	Sabina commits to provide information specific to mitigation measures for polar bears for consideration in the shipping carrier's marine spill response plan. This will be included in the FEIS.	

Appendix 2: Sabina's Commitment List based on Technical Review Comments [November 2, 2014]

Sabina Gold Silver Corporation Commitment List for the Back River Project

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
1	2	Project Description & Alternatives	~	~	AANDC-1	Sabina commits to updating the alternatives assessment to include a more explicit analysis of alternatives and evaluation criteria in the FEIS.
2	2	Project Description & Alternatives	AANDC-8	~	~	Sabina commits to clarify the elevation and location of underground access, and any potential risk of flooding shall be addressed in the FEIS.
3	2	Project Description & Alternatives	AANDC-10	~	~	Sabina commits to providing details of dust suppressants and dust suppression methods for underground and aboveground facilities in the FEIS.
4	2	Project Description & Alternatives	AANDC-11	~	~	For the FEIS, Sabina commits to providing details on any potential design changes resulting from additional years of available earthquake data.
5	2	Project Description & Alternatives	AANDC-12	~	~	For the FEIS, Sabina commits to providing details on schedules and volumes of materials and updated information resulting from the optimization of facility and infrastructure configuration.
6	2	Project Description & Alternatives	~	~	AANDC-15	Sabina commits to providing more details on the sewage effluent management strategy in the FEIS.
7	2	Project Description & Alternatives	~	~	AANDC-20	Sabina commits to providing additional information on the TIA freeboard and the potential for overtopping the tailings storage embankment during operations. This work, which will be done in accordance with the Canadian Dam Association Guidelines will be presented in the FEIS.
8	2	Project Description & Alternatives	AANDC-48	~	~	Sabina commits to providing a more detailed estimation of waste generation quantities and facilities design in the FEIS.
9	2	Project Description & Alternatives	AANDC-49	~	~	Sabina commits to providing a more detailed estimation of waste generation quantities and facilities design in the FEIS.
10	2	Project Description & Alternatives	AANDC-50	~	~	Sabina commits to providing a list of expected hazardous materials in the FEIS.
11	2	Project Description & Alternatives	~	AANDC-61	~	New information obtained through ongoing community consultations will be integrated for the final alternatives assessment presented in Sabina's FEIS.
12	2	Project Description & Alternatives	~	AANDC-61	~	Sabina commits to providing minutes from post-DEIS submission meetings and information from the final TK Workshop Report into the FEIS.
13	2	Project Description & Alternatives	EC-2	~	~	Sabina commits to providing incinerator vendor specifications in the FEIS.
14	2	Project Description & Alternatives	~	~	EC-15	Sabina commits to providing details on landfill design and seepage management in the FEIS.
15	2	Project Description & Alternatives	~	~	EC-17	Sabina commits to discussing the requirements for the management of landfarms and wastewater treatment in the FEIS.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
16	2	Project Description & Alternatives	~	EC-18	~	Sabina commits to revise the Volume 2 section titled "Design of Impoundment / Retention Structures for Seepage and Runoff Control" to further include design details for water management structures used for seepage and runoff control from the open pits.
17	2	Project Description & Alternatives	EC-19	~	~	As engineering design progresses and ongoing characterization information is available, the balance of suitable quarry material and required volumes will be assessed. Sabina commits to providing these estimates in the FEIS.
18	2	Project Description & Alternatives	~	~	EC-20	Sabina commits to providing details on stockpile design, foundation requirements and runoff management with the FEIS.
19	2	Project Description & Alternatives	EC-21	~	~	The method for assessing alternatives within the Project has included consideration of technical feasibility, cost implications, potential environmental impacts, and amenability to reclamation. Community acceptability or preference and socio-economic effects were not provided. Sabina commits to including additional information on these aspects in the FEIS alternatives assessment.
20	2	Project Description & Alternatives	~	~	EC-22	Sabina commits to providing clarification on the transition of the TIA from operations to closure in the FEIS.
21	2	Project Description & Alternatives	~	~	EC-23	Sabina commits to providing the rationale and design criteria for the TIA including ice entrainment. This information will be provided in the FEIS.
22	2	Project Description & Alternatives	EC-26	~	~	Sabina commits to investigate and provide adequate details on potential seepage rates from the TIA. Further Sabina will provide design information on any required seepage collection system in the FEIS.
23	2	Project Description & Alternatives	~	~	EC-34	In the FEIS, Sabina commits to including anticipated locations and volumes for the: TIA, WMF, treated sewage, collection ponds, on-land discharges, and any other potential discharges. Plans will be made to minimize the number of discharge locations on site.
24	2	Project Description & Alternatives	GN-12	~	~	Sabina commits to removing reference to a hard-surface airstrip in the FEIS.
25	2	Project Description & Alternatives	~	GN-20	~	For the FEIS, Sabina commits to detailing whether bulk fuel storage will include overwintering of fuel vessels in sea ice.
26	2	Project Description & Alternatives	~	~	KIA-CR-7	Sabina commits to optimizing the location and design of the TIA based on an alternatives assessment founded on environmental, technical, and economic reasons. In addition Sabina commits to providing a detailed summary of the overburden and permafrost conditions for the TIA foundation with sufficient detail to justify and support the design. This information will be provided in the FEIS.
27	2	Project Description & Alternatives	KIA-62	~	~	As engineering design progresses and ongoing characterization information is available, the balance of suitable quarry material and required volumes will be assessed. Sabina commits to providing this updated information in the FEIS.
28	2	Project Description & Alternatives	KIA-63	~	~	Winter road design, construction, and operation will be informed by extensive expertise from other winter roads in the area, specifically the Tibbitt-Contwoyto Winter Road. Sabina commits to provide details in the FEIS.
29	2	Project Description & Alternatives	~	KIA-77	~	Sabina commits to assessing options for subaqueous storage of PAG/ML waste rock for the FS. Results will be captured in the FEIS.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
30	2	Project Description & Alternatives	~	KIA-92	~	Sabina commits to including design criteria for all water management facilities in the FEIS.
31	2	Project Description & Alternatives	KIA-103	~	~	Sabina commits to update Volume 2, Table 6.4-3 (Proposed Bulk Fuel Storage Pooling Water Discharge Criteria) to provide the correct value for lead discharge (0.2 mg/L).
32	2	Project Description & Alternatives	KIA-106	~	~	Sabina commits to update Volume 2, Table 6.6-7 (Proposed Landfarm Pooling Water Quality Discharge Criteria) and Table 6.7-6 (Proposed Landfarm Pooling Water Quality Discharge Criteria) to reflect the incorrectly transcribed values for lead and ethylbenzene. This will be addressed in the FEIS.
33	2	Project Description & Alternatives	NRCan-3	~	~	In the FEIS, Sabina commits to revising the statement found in Volume 2, Section 7 to read as follows: “Overburden includes a number of glacial deposits consisting predominantly of till. Occasional esker deposits of sand and gravel form long ridges of stratified sand and gravel that can reach hundreds of kilometres in length.”
34	2	Project Description & Alternatives	~	TC-10	~	Sabina commits to amend the text in Volume 2, Section 6.3.3.2 "Shipping" to include the Transportation of Dangerous Goods Act, 1992.
35	3	Public Consultation, Government Engagement & TK	~	~	AANDC-14	Sabina commits to including the findings of the TK workshop report in the FEIS, including any information available on drinking water sources. Sabina also commits to including this additional information in our assessment for the project.
36	3	Public Consultation, Government Engagement & TK	~	AANDC-25	~	For the FEIS, Sabina commits to provide updated information on drinking water sources in the Project area derived from the 2014 TK report prepared by the KIA.
37	3	Public Consultation, Government Engagement & TK	~	~	AANDC-28	Sabina commits to providing access to all primary documents used during public consultation in the FEIS.
38	3	Public Consultation, Government Engagement & TK	~	~	AANDC-30	The results of the TK workshop report will also be integrated into Sabina’s FEIS submission.
39	3	Public Consultation, Government Engagement & TK	~	AANDC-62	~	Sabina commits to providing minutes from post-DEIS submission meetings and information from a final TK workshop report into the FEIS.
40	3	Public Consultation, Government Engagement & TK	~	~	KIA-CR-13	Sabina commits to revising the TK section of Volume 6, Chapter 4 in the FEIS to more accurately reflect the application of TK.
41	3	Public Consultation, Government Engagement & TK	~	KIA-110	~	On the topic of traditional drinking water sources, Sabina commits that the statement about direct incorporation of TK into the existing environment and baseline information (Volume 6, Chapter 4, Sect. 4.2.4) will be removed from the FEIS unless direct information becomes available from the KIA's Phase 2 TK Report.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
42	3	Public Consultation, Government Engagement & TK	~	KIA-139	~	In the FEIS, Sabina commits to providing an additional report on the site specific aspects of the Naonaiyaotit Traditional Knowledge Project database in Volume 3, App V3-3A.
43	3	Public Consultation, Government Engagement & TK	YKDFN- 4-4	~	~	Sabina commits to integrate the findings of the document 'Existing and Publically Available Traditional Knowledge from Selected Aboriginal Groups in the Northwest Territories' into the FEIS (Appendix V3-3B).
44	4	Atmospheric Environment	~	EC-3	~	Sabina commits to completing an assessment of MLA air emissions that includes emissions from on land sources and ship emissions during "hoteling" and during transport. This will be provided in the FEIS.
45	4	Atmospheric Environment	EC-5	~	~	For the FEIS, Sabina commits to adding a footnote (Table 2.5-3 in Volume 4) that includes descriptions from the modelling report for: night-time noise level for assessing wildlife habitat loss, threshold 45 dBA; and sound exposure level for assessing wildlife sensitivity to helicopter noise (ringed seal and marine birds), threshold 70 dBA; sound exposure level for assessing wildlife sensitivity to helicopter noise (all other wildlife), threshold 80 dBA; peak sound pressure level for assessing wildlife sensitivity to impulsive blasting noise (disturbed habitat), threshold 108 dB; peak sound pressure level for assessing wildlife sensitivity to impulsive blasting noise (functional habitat loss), threshold 120 dB.
46	4	Atmospheric Environment	~	~	EC-13	Sabina will commit, as part of the water licensing process, to providing vendor specifications stating that the incinerator is designed to incinerate sewage sludge.
47	4	Atmospheric Environment	~	~	EC-13	Stack testing for all incinerators will be completed as part of the commissioning process to ensure achievement of the Canada-wide Standards for emissions.
48	4	Atmospheric Environment	GN-18	~	~	At this time the Goose Property Airstrip will not be designed to accommodate aircrafts as large as a Boeing 767. If larger aircraft are selected as a viable option, Sabina commits to updating the air quality and noise models and conduct an effects assessment to address the potential effects of this larger class of aircraft. This would be included in the FEIS.
49	4	Atmospheric Environment	~	~	GN-35	Dustfall sampling locations will be chosen to ensure that all large sources of emissions are monitored. Sabina will consult with the GN on the number and location of sampling sites prior to finalizing the Air Quality Monitoring Plan for the FEIS.
50	4	Atmospheric Environment	~	KIA-49	~	Sabina commits to monitoring of various particulate fractions (TSP, PM10 and PM2.5) at multiple locations onsite during the construction and operation phases of the Project. Sabina commits to working with the appropriate regulators to finalize monitoring plans prior to submission of the FEIS.
51	4	Atmospheric Environment	~	KIA-54	~	For the FEIS, Sabina commits to further investigating mitigation measures required to reduce dust emissions and the likelihood of any potential health effect.
52	4	Atmospheric Environment	KIA-56	~	~	Sabina commits to comply with Environment Canada Sulphur in Diesel Fuel Regulations (updated in 2012).
53	4	Atmospheric Environment	~	KIA-60	~	Sabina commits to providing a design memorandum in the FEIS indicating how climate change considerations have been integrated into design and incorporate the most current and relevant peer-reviewed climate data.
54	4	Atmospheric Environment	KIA-72	~	~	Sabina commits to include community acceptability and socio-economic effects in the full alternatives assessment for the FEIS. Community acceptability or preference and socio-economic effects were not been formally considered as there was very little concern expressed during our consultation efforts.
55	4	Atmospheric Environment	~	KIA-122	~	Sabina commits to establishing annual targets and BMPs for GHG emissions and potential reductions throughout operations. This will be stated in the FEIS.
56	4	Atmospheric Environment	~	~	NRCAN-2	Sabina commits to substantiating the TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.

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57	4	Atmospheric Environment	~	~	NRCAN-3	Sabina commits to providing justification for selection of the design freezing point in the thermal analysis for the TIA. This information will be presented in the FEIS.
58	4	Atmospheric Environment	~	~	NRCAN-4	Sabina commits to completing and presenting all appropriate geotechnical analysis of the TIA structure including its foundation in the FEIS.
59	4	Atmospheric Environment	~	~	NRCAN-33	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
60	4	Atmospheric Environment	~	~	NRCAN-34	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
61	4	Atmospheric Environment	~	~	NRCAN-35	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
62	5	Terrestrial Environment	~	~	AANDC-2	Sabina commits to incorporating all up to date information relating to geomechanical and topographical field and laboratory data in an updated assessment of mine stability and provide further detail on the underground mining method, layout, and design in the FEIS.
63	5	Terrestrial Environment	~	~	AANDC-3	Sabina commits to providing an updated presentation, analysis, and interpretation of geological faults and structures in the FEIS.
64	5	Terrestrial Environment	~	~	AANDC-4	Sabina commits to providing an updated analysis of permafrost distribution at depth through thermal modelling, updated data analysis, and any other means required to depict any groundwater connections with the mine openings. This analysis will provide an updated account of the potential formation/decline of taliks, including any potential through-taliks. Requested information will be presented in the FEIS.
65	5	Terrestrial Environment	~	~	AANDC-5-1	Sabina commits to providing additional details related to how the hydrogeological system and permafrost thermodynamics may be affected by the proposed open-pit and underground mining operations. Requested information will be presented in the FEIS.
66	5	Terrestrial Environment	~	~	AANDC-5-2	Sabina commits to providing a detailed summary in the FEIS of overburden and permafrost conditions for the property with sufficient detail to demonstrate how planned surface infrastructure will interact with this system.
67	5	Terrestrial Environment	~	~	AANDC-6	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change. This information will be presented in the FEIS.
68	5	Terrestrial Environment	~	~	AANDC-17	Sabina commits to further work to understand the variability in ARD and arsenic levels, and will present this information in the FEIS.
69	5	Terrestrial Environment	~	~	AANDC-18	Sabina commits to providing additional clarity in the FEIS on the mitigation and monitoring that will be required to address the predicted concentrations of arsenic, copper, and cyanide concentrations exceeding MMER discharge limits.
70	5	Terrestrial Environment	~	~	AANDC-19	Sabina commits to including additional details on the TIA constructability and assessing the associated risks. This information will be presented in the FEIS.
71	5	Terrestrial Environment	AANDC-20	~	~	Sabina commits to thermal modelling as part of the FS to validate the practicability, constructability and prevention of adverse environmental impacts of the proposed TIA closure measure of a 2m non-PAG rock cap.
72	5	Terrestrial Environment	AANDC-21	~	~	Sabina commits to providing thermal modelling to support the adequacy of waste rock cover depth to protect permafrost in the FS.
73	5	Terrestrial Environment	~	AANDC-23	~	Sabina commits that thermal modelling to support the design criteria will be conducted as part of the FS and the predictions provided in the FEIS. The assumptions used for thermal modelling will be informed by observations obtained from similar northern mining operations.
74	5	Terrestrial Environment	~	AANDC-31	~	Sabina commits to providing dyke designs and seepage calculations into the pits. This will be presented in the FEIS water balance.

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75	5	Terrestrial Environment	~	AANDC-39	~	Sabina commits that geothermal modelling calibrated to temperature measurements and incorporating project components, will be conducted in the FS and provided in the FEIS.
76	5	Terrestrial Environment	~	AANDC-40	~	Sabina commits that geothermal analyses incorporating a more detailed evaluation of the influence of climate change on permafrost degradation will be provided in the FEIS.
77	5	Terrestrial Environment	~	AANDC-47	~	Sabina commits to providing the required background information pertaining to the design and effectiveness of landfills and otherwise managing waste in relation to the context of the project into the FEIS and final NWB water licencing process.
78	5	Terrestrial Environment	AANDC-57	~	~	As part of the FEIS, Sabina commits to providing additional information regarding closure and reclamation resulting from the mine design being optimized in the FS.
79	5	Terrestrial Environment	AANDC-58	~	~	Sabina commits to providing more information on the potential interactions between sub-permafrost groundwater and closure scenarios for the Umwelt underground within the FEIS.
80	5	Terrestrial Environment	~	~	EC-9	Sabina commits to using habitat data to predict the likelihood of birds nesting in various habitats. This information will appear in the FEIS.
81	5	Terrestrial Environment	~	~	EC-9	Sabina commits to using methods that are as non-intrusive as possible for pre-clearing surveys. This information will appear in the FEIS.
82	5	Terrestrial Environment	~	~	EC-9	Sabina commits to updating Table 6.2-1 (Wildlife Sensitive Periods Applicable to the Project) to include Mid-May to Mid-August from June 1 to July 31. This information will appear in the FEIS.
83	5	Terrestrial Environment	~	EC-22	~	Sabina commits that the results of feasibility study analyses for potential seepage from the TIA will be provided in the FEIS.
84	5	Terrestrial Environment	EC-24	~	~	Confirmation of the thickness of cover material based on thermal modelling and the confirmation of grain size will be studied in more detail as part of the FS and presented in the FEIS.
85	5	Terrestrial Environment	~	~	EC-26	Sabina commits to conducting additional site characterization of the TIA foundation to support detailed design after receipt of the water licence.
86	5	Terrestrial Environment	~	EC-27	~	For the FEIS, Sabina commits that assessment of the applicable screening criteria for both waste rock and tailings will be revisited as part of ongoing geochemical characterization work. During the FS, kinetic test results will be reinterpreted to determine a site specific NP:AP ratio for both tailings and waste rock.
87	5	Terrestrial Environment	EC-29	~	~	For the FEIS, Sabina commits to revising Figures 3.2-4, 3.2-5, 3.2-6 (Appendix V11-4A). The legend should be revised so the dark dot is labelled “sampled” (not “deposit”).
88	5	Terrestrial Environment	EC-31	~	~	Sabina commits to incorporating updated results from the ongoing kinetic tests into the FEIS.
89	5	Terrestrial Environment	~	~	EC-41	For the FEIS, Sabina commits to correcting the reference to Price 2009, which is a MEND guideline, not (as stated previously) a federal guideline.
90	5	Terrestrial Environment	~	~	EC-42	Sabina commits to a further review of correlations between solid phase concentrations and leachate concentrations for parameters of interest, and will further assess whether appropriate samples were used. Data interpretation will include a review of all of the potential factors controlling trace element release.
91	5	Terrestrial Environment	~	~	EC-43	For the FEIS, Sabina commits to providing further information on the mine plan to clarify the length of time that ore and low grade ore will be stockpiled prior to processing. Additionally, further interpretation of the kinetic test data will be completed to assess the potential lag times to the onset of ARD in these material and in waste rock.
92	5	Terrestrial Environment	~	~	EC-44	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations to demonstrate the viability of the plan. This information will be presented in the FEIS.
93	5	Terrestrial Environment	~	~	EC-45	For the FEIS, Sabina commits to reassessing the proposed frequency of monitoring summarized in Table 7-1 (Summary of ML/ARD Monitoring Program), and will determine the frequency as a number of samples per volume of rock as suggested by EC.

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94	5	Terrestrial Environment	GN-14	~	~	Sabina commits to updating Table 5.6-2 (Cumulative Habitat Loss in the Bathurst Caribou CEA Boundary) in the FEIS. For closed or past developments it was assumed that dust no longer contributes as habitat alteration and wildlife are anticipated to reinhabit these areas, thus blank cells should read NA.
95	5	Terrestrial Environment	~	GN-15	~	For the FEIS, Sabina commits that updates will be provided to include the most recent 2012 data in Volume 5, Table 5.1-2 (Bathurst Caribou Herd Population Numbers and Breeding Females from 1986 to 2009).
96	5	Terrestrial Environment	GN-19	~	~	Sabina commits to include the Nunavut Wildlife Act in the List of Permits, Licenses, and Authorizations Required for the Project in the FEIS.
97	5	Terrestrial Environment	~	~	GN-20	Sabina commits to including text in the FEIS referencing Project-related effects in the context of Nunavut wildlife management units.
98	5	Terrestrial Environment	~	~	GN-24	Sabina will include more detail on the definition of “population and subpopulation health” and “acceptable risk thresholds” in definition of Significance Ratings in the FEIS.
99	5	Terrestrial Environment	~	~	GN-25	Sabina will provide publically available information in the FEIS detailing areas frequented by polar bears along the shipping route.
100	5	Terrestrial Environment	~	~	GN-26	Sabina commits to working within the existing regulatory framework defined by Transport Canada. An approved SOPEP will be in place by the shipping provider prior to the commencement of any shipment.
101	5	Terrestrial Environment	~	~	GN-26	Sabina will provide publically available information in the FEIS detailing areas frequented by polar bears along the shipping route.
102	5	Terrestrial Environment	~	~	GN-31	A discussion surrounding wolf and wolverine predation of ungulates will be added to the ungulate sections of the FEIS.
103	5	Terrestrial Environment	~	~	GN-32	Additional detail can be added to the raptor chapter of the FEIS (Volume 5, Chapter 10) to provide citations to support these mitigation activities.
104	5	Terrestrial Environment	~	~	GN-36	Sabina acknowledges the requirements of the Scientists Act and commits to ensuring that legislated reporting requirement under the Scientists Act are reflected in the FEIS.
105	5	Terrestrial Environment	~	~	GN-37	Sabina commits to update the table on Permits and Approvals for Mine Development in the FEIS to include all relevant authorizations required for the life of the Project.
106	5	Terrestrial Environment	~	~	GNWT-1	In the FEIS, Sabina commits to updating Sections 5.1.1 and 5.1.2.3 of the caribou assessment (Volume 5, Chapter 5), using information from 2014 discussing status of the Bathurst herd.
107	5	Terrestrial Environment	~	~	GNWT-1	Sabina commits to further clarifying how the determination of significance might change in the context of recovery. This will include a clarification on "the predicted effects on post-calving and summer areas.” This information will appear in the FEIS.
108	5	Terrestrial Environment	~	~	GNWT-1	In the FEIS, Sabina commits to discussing Significance Ratings for Residual Effects on caribou (Table 5.5-3, Volume 5, Chapter 5) in the context of time horizons that are relevant to communities that depend on caribou.
109	5	Terrestrial Environment	~	~	GNWT-1	In the FEIS, Sabina commits to incorporating a discussion of how predicted impacts would be expected to change depending upon whether the herd is at a high or low population level and/or in an increasing or decreasing phase.
110	5	Terrestrial Environment	~	~	GNWT-3	For the FEIS, references to the caribou cumulative effects assessment (Section 5.6.2.2) will be added to the effects assessment section.
111	5	Terrestrial Environment	~	~	GNWT-4	Sabina commits to review the location of the NICO and Nechalacho Projects and include them in the cumulative effects analysis of the FEIS should they fall within the defined 95% kernel home range of the herd.
112	5	Terrestrial Environment	~	GNWT-5	~	Sabina commits to providing more information in the FEIS on caribou monitoring programs. This will include details on Sabina participation in a collaborative regional (i.e., herd level) research and monitoring program for caribou, where involvement is capped at an agreed financial value; and a local-scale monitoring program to document caribou activity in areas surrounding the mine.
113	5	Terrestrial Environment	~	~	GNWT-5	Sabina commits to including additional information and analysis on annual variation in herd movement and historic calving ranges in the FEIS.

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114	5	Terrestrial Environment	GNWT-7	~	~	Sabina readily commits to participating in GNWT led meetings that formally include the GN and relevant aboriginal groups when the content of these meetings include issues that are related to potential project interactions. Sabina is also willing to discuss options related to grizzly bear and wolverine monitoring initiatives as they relate directly to monitoring requirements for the Back River Project and where they tie in to a formalized agreement with the GN and relevant aboriginal groups for the management of these animals.
115	5	Terrestrial Environment	~	~	GNWT-7	The FEIS will be updated with reported harvest data provided by Malik (2012), that suggests a total removal of a maximum of 15 bears per year should be sustainable for the region.
116	5	Terrestrial Environment	~	~	GNWT-7	Additional text will be added to the FEIS to discuss potential Project and cumulative effects on bears within the context of regional harvest opportunities.
117	5	Terrestrial Environment	GNWT-8	~	~	Sabina commits to compling with the Shipping Zone Date System which defines when certain vessel classes can enter certain waters to ensure safe operation in Arctic waters.
118	5	Terrestrial Environment	GNWT-9	~	~	If the TCWR connector becomes a feasible option for the Project, Sabina commits to explore timing and methodologies available for conducting fall/winter pre-clearing surveys to be conducted prior to yearly construction of the road.
119	5	Terrestrial Environment	GNWT-10	~	~	If the combined decrease to grizzly bear or wolverine reproductive productivity was anticipated to be greater than natural variability in reproductive productivity in the population alone, then the magnitude was increased from 'negligible' or 'low' to 'moderate'. Sabina commits to provide this text in the FEIS.
120	5	Terrestrial Environment	~	~	KIA-CR-1	Sabina commits to adding a totals column to Table 5.6-4 in the FEIS that sums direct habitat loss in the mine footprint and indirect habitat loss in a zone of influence surrounding the mine footprint.
121	5	Terrestrial Environment	KIA-4	~	~	Sabina commits to providing the data from the 2013 Wildlife Baseline Report into the FEIS.
122	5	Terrestrial Environment	~	~	KIA-IR-5	Sabina commits to including a brief discussion on why the dietary modelling found that mercury will not threaten the health of grizzly bears in the FEIS.
123	5	Terrestrial Environment	~	~	KIA-CR-8	Sabina commits to completing and presenting all appropriate geotechnical and hydrotechnical analysis of the TIA structure, including its foundation in the FEIS.
124	5	Terrestrial Environment	~	~	KIA-IR-8	Sabina will continue to optimize the extraction of the resources located at the George Property including accounting for engineering costs and environmental liability. Additional information on this topic will be presented in the publically available Feasibility Study Report.
125	5	Terrestrial Environment	KIA-8	~	~	In consultation (as appropriate) with the GN and KIA, Sabina commits to formalizing the details of the Wildlife Effects Monitoring Program prior to construction of the Project.
126	5	Terrestrial Environment	~	~	KIA-CR-9	Sabina commits to further substantiating the waste rock closure design criteria and completing a thermal analysis, inclusive of climate change considerations to demonstrate the viability of the plan. This information will be presented in the FEIS.
127	5	Terrestrial Environment	~	~	KIA-IR-9	In the FEIS, Sabina commits to providing a detailed summary of overburden and permafrost conditions with sufficient detail to demonstrate how planned surface infrastructure such as the WRSA's will interact with this system.
128	5	Terrestrial Environment	~	~	KIA-CR-10	Results and interpretation of additional sampling and testing work for potentially acid generating samples will be included in the FEIS.
129	5	Terrestrial Environment	~	~	KIA-IR-10	Sabina commits to further substantiating the waste rock closure design criteria and completing a thermal analysis, inclusive of climate change considerations to demonstrate the viability of the plan. This information will be presented in the FEIS. Sabina does not believe a contingency plan is warranted at this stage.
130	5	Terrestrial Environment	~	~	KIA-IR-11	Sabina commits to optimizing the location and design of the TIA based on an alternatives assessment founded on environmental, technical, and economic reasons. In addition Sabina commits to providing a detailed summary of the overburden and permafrost conditions for the TIA foundation with sufficient detail to justify and support the design. This information will be provided in the FEIS.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
131	5	Terrestrial Environment	~	~	KIA-CR-12	In the FEIS, Sabina commits to identifying and quantifying geochemically suitable material that will be available for construction. Details for specific locations, extraction and sorting methods will be provided as part of water licensing process.
132	5	Terrestrial Environment	~	~	KIA-IR-12	Sabina commits to further substantiating the waste rock closure design criteria and completing a thermal analysis, inclusive of climate change considerations to demonstrate the viability of the plan. This information will be presented in the FEIS.
133	5	Terrestrial Environment	~	~	KIA-IR-13	For the FEIS, Sabina commits to providing a detailed summary of overburden and permafrost conditions for the property with sufficient detail to demonstrate how planned surface infrastructure such as the fuel storage areas will interact with this system.
134	5	Terrestrial Environment	~	~	KIA-CR-14	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations to demonstrate the viability of the plan. This information will be presented in the FEIS.
135	5	Terrestrial Environment	~	~	KIA-IR-14	Sabina commits to providing additional discussion of the carbonate mineralogy in the FEIS.
136	5	Terrestrial Environment	~	~	KIA-IR-15	For the FEIS, Sabina commits to describing all of the assumptions made in the scaling calculations and the level of uncertainty and conservatism that is built into those calculations.
137	5	Terrestrial Environment	~	~	KIA-IR-16	Sabina commits to providing the appropriate justification for design criteria adopted for any water management structures at Lytle and Occurrence Lakes in the FEIS.
138	5	Terrestrial Environment	KIA-18	~	~	For the FEIS, Sabina commits to reviewing Vol. 5, Section 5.6.3 and editing text where appropriate. This includes replacing the word 'grizzly bear' with 'caribou'.
139	5	Terrestrial Environment	~	KIA-28	~	In the FEIS, Sabina commits to avoid, where possible, the usage of contrasting colours so shading can be visually discerned.
140	5	Terrestrial Environment	KIA-30	~	~	Sabina commits to delineating lake locations with high caribou abundance into Volume 5, Figures 5.1-2, 5.1-3, 5.1-5 and 5.1-6.
141	5	Terrestrial Environment	~	KIA-32	~	In the FEIS, Sabina commits to correcting the typo on page 5-17 (Vol. 5, Section 5.1.2.3): "Boulanger et al. (2011) proposed that the population has likely declined due to decreasing calf survival, and concomitant reductions in female fecundity, and hunting."
142	5	Terrestrial Environment	~	KIA-59	~	Sabina commits to collecting any additional geotechnical information characterizing shallow permafrost conditions, as required, for the FEIS.
143	5	Terrestrial Environment	~	KIA-70	~	Sabina commits to reviewing and advancing the design of the TIA during the FS. Updated information on the TIA design will be included in the FEIS.
144	5	Terrestrial Environment	KIA-73	~	~	Designs for tailings and waste rock disposal are being re-assessed in their entirety during the FS. Impacts on and from permafrost will be given due consideration through thermal modeling, baseline and predictive inputs. Sabina commits to providing this additional information in the FEIS.
145	5	Terrestrial Environment	~	KIA-74	~	Sabina commits to reviewing and advancing the design of the TIA during the FS. Updated information on the TIA design will be included in the FEIS.
146	5	Terrestrial Environment	~	KIA-75	~	Sabina commits to providing details on shallow geotechnical conditions at the various fuel storage facilities for the FEIS and again for the water licence application process.
147	5	Terrestrial Environment	KIA-76	~	~	Geotechnical assessments were conducted as part of the PFS but the results of these assessments were not available at the time of preparation of the DEIS. Sabina commits to providing these data, their interpretation, and implications in the FEIS.
148	5	Terrestrial Environment	~	KIA-78	~	Sabina commits to using available kinetic data to develop site specific criteria as well as assessing the screening criteria used at other similar operations in Nunavut to help characterize our definition of PAG material. This will be presented within the FEIS.

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149	5	Terrestrial Environment	KIA-79	~	~	Sabina commits that further interpretation of the forms and reactivity of NP will be made as part of detailed interpretation of the humidity cell test results. This will be completed as part of the FEIS. Consideration will be given to different lithologies and/or zones within the deposit area that may have different proportions of unreactive NP.
150	5	Terrestrial Environment	KIA-85	~	~	For Volume 11 (App1A to App4A), Sabina commits to rectify the classification of Barrel 6 as the material in the barrel has a sulphide net potential ratio of 2.95 and is therefore classified as uPAG, this will be rectified in the FEIS.
151	5	Terrestrial Environment	~	KIA-89	~	As part of the FEIS, Sabina commits to detailing thermal analyses to determine the extent and timing of open taliks developing for all of the open and underground pits. The existing groundwater understanding will subsequently be expanded to include these new open taliks.
152	5	Terrestrial Environment	KIA-100	~	~	Sabina is committed to using only geochemically suitable material for construction and closure and will continue characterization studies to further assess the ML/ARD potential and to develop an appropriate strategy in the FEIS for identifying and classifying this material at the time of the works to ensure appropriate use for construction.
153	5	Terrestrial Environment	KIA-116	~	~	Sabina commits that WRSA and TIA design criteria will be assessed during the FS as thermal modelling analyses are conducted and the designs optimized. Updates will be provided in the FEIS.
154	5	Terrestrial Environment	NRCan-1	~	~	Prescreening of material will be completed prior to its removal and if substantial metal leaching and acid rock drainage potential is identified, the material will be managed accordingly. Sabina commits to reporting further details on these mitigation plans in the FEIS following development in the FS.
155	5	Terrestrial Environment	~	~	NRCAN-1	Sabina commits prior to commencement of works, but not necessarily prior to FEIS submission, to assess the geomechnical properties of the borrow material, its geochemistry and ARD/ML potential, the available volume of material, proximity to infrastructure, and to consider avoidance of environmentally sensitive (e.g. fish and fish habitat) and culturally sensitive (e.g. archaeological) areas.
156	5	Terrestrial Environment	NRCan-3	~	~	Sabina commits to updating the terrain maps for Figure 4.2-1 (Appendix V5-3A) to illustrate the predominant direction of esker makers being northward.
157	5	Terrestrial Environment	NRCan-3	~	~	Sabina commits to updating the legend for terrain maps in (Appendix V5-3B) the FEIS to indicate which map sources were used.
158	5	Terrestrial Environment	~	~	NRCAN-5	Sabina commits to substantiating the TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
159	5	Terrestrial Environment	~	~	NRCAN-7	Sabina commits to conducting additional site characterization of foundation materials for proposed alignments of dykes and embankments for water retention structures associated with the TIA and dewatering of lakes to support detailed design after receipt of the water licence. This information will appear in the FEIS.
160	5	Terrestrial Environment	~	~	NRCAN-8	For the FEIS, Sabina commits to completing and presenting all appropriate geotechnical analysis of the TIA structure, including its foundation.
161	5	Terrestrial Environment	NRCan-9	~	~	Sabina commits to providing further information on closure of the underground workings in the FEIS.
162	5	Terrestrial Environment	~	~	NRCAN-9	Sabina commits to considering the potential for through-taliks beneath flooded open pits in assessing the long-term effects on water quality and quantity. Information will be presented in the FEIS.
163	5	Terrestrial Environment	~	~	NRCAN-10	Sabina commits to providing an updated analysis of permafrost distribution at depth through thermal modelling, updated data analysis, and any other means required to depict any groundwater connections with the mine openings. This analysis will provide an updated account of the potential formation/decline of taliks, including any potential through-taliks. Requested information will be presented in the FEIS.
164	5	Terrestrial Environment	NRCan-13	~	~	Sabina commits to undertake thermal modelling of both WRSA's and the TIA to validate cover design criteria. This will be provided in the FEIS.
165	5	Terrestrial Environment	~	~	NRCAN-13	Sabina commits to providing the appropriate design criteria and justification for any mitigation measures adopted for the project. This information will be presented in the FEIS.

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166	5	Terrestrial Environment	NRCan-14	~	~	Sabina commits to further geotechnical studies, basic design, stability analysis, and any thermal analyses that are required to advance the design of tailings managment for the purpose of water licencing. This work will be presented in the FEIS. Potential settlement from freeboard calculations will be further clarified in the FEIS.
167	5	Terrestrial Environment	~	~	NRCAN-14	Sabina commits to presenting the scope and details of the thermal modelling completed. Requested information will be presented in the FEIS.
168	5	Terrestrial Environment	NRCan-15	~	~	For the FEIS, Sabina commits to estimate seepage quality and quantity to further advance the water management plans.
169	5	Terrestrial Environment	~	~	NRCAN-15	Sabina commits to clarifying the extent of the Llama Lake talik to be used for assessment of project effects. This will be presented in the FEIS.
170	5	Terrestrial Environment	NRCan-16	~	~	For the FEIS, Sabina commits to provide more specific climate change predictions. These may be calculated from thermal models to help refine the final engineering design.
171	5	Terrestrial Environment	~	~	NRCAN-16	Sabina commits to substantiating the closure design criteria for the open pits and completing a thermal and/or hydrogeological analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
172	5	Terrestrial Environment	NRCan-17	~	~	Sabina commits that additional analysis on the long-term effectiveness of permafrost encapsulation will be completed as part of the FS, and will be reported in the FEIS. The analysis will consider the sensitivity to climate change and the rate of freezing for the WRSA and TIA.
173	5	Terrestrial Environment	NRCan-19	~	~	Sabina commits to continue geochemical characterization of pit wall materials, including a kinetic testing program. Water quality predictions for the pit lakes will be developed based on this characterization work and will be provided in the FEIS. A conceptual plan for treatment of the water from the filled pits will be developed once water quality predictions are available.
174	5	Terrestrial Environment	NRCan-22	~	~	Sabina commits to providing additional geochemical characterization work, including results from the ongoing kinetic testing program. The updated water quality predictions will be provided in the FEIS.
175	5	Terrestrial Environment	~	~	NRCAN-30	Sabina commits to further substantiating the TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
176	5	Terrestrial Environment	~	~	NRCAN-32	Sabina commits to further substantiating the waste rock and TIA closure design criteria and completing a thermal analysis, inclusive of climate change considerations, to demonstrate the viability of the plan. This information will be presented in the FEIS.
177	6	Freshwater Environment	~	~	AANDC-9	Sabina commits to including underground mine inflow in the site water and load balance model and account for the effect of the PAG backfill on the quality of that water and ultimately in the TIA. Further, Sabina will provide quality estimates of the underground mine water at closure, including the effect of the PAG backfill, if such mine water is expected to be released to the natural environment. Requested information will be presented in the FEIS.
178	6	Freshwater Environment	~	~	AANDC-10	Sabina commits to including a rationale for excluding the 2006 phosphorus data
179	6	Freshwater Environment	~	~	AANDC-10	Sabina commits to presenting phosphorus data from 1994 onwards in the FEIS.
180	6	Freshwater Environment	~	~	AANDC-10	Sabina commits to presenting tabulated pH data that distinguishes between field and laboratory data. Clarification of the specific methodologies used to measure pH in the baseline program will be included in the FEIS.
181	6	Freshwater Environment	~	~	AANDC-10	Sabina commits to including the requested information in the FEIS as described in the detailed response part of the technical response package (AANDC-10).
182	6	Freshwater Environment	AANDC-15	~	~	The water balance for the Project is under review and will be updated for the FEIS. Sabina commits to further describing the viability of "zero discharge" and the implications on TIA design.
183	6	Freshwater Environment	AANDC-29	~	~	For the FEIS, Sabina commits to providing an estimate of water volume change, water volume remaining, and water level for each lake and surface mine (by year) throughout the Project.

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184	6	Freshwater Environment	~	AANDC-30	~	Sabina commits to provide an operational plan and water balance to document how the minimum water levels within Goose and Propeller Lakes will be maintained. The FEIS will provide additional detail by incorporating the latest engineering inputs derived from the FS.
185	6	Freshwater Environment	AANDC-33	~	~	For the FEIS, Sabina commits to including Appendix A and Appendix B with the geotechnical and hydrogeological drilling program report written by SRK (Nov, 2012).
186	6	Freshwater Environment	AANDC-34	~	~	The appendices for the Knight Piesold report in Vol 5, App.2D will be included in the FEIS.
187	6	Freshwater Environment	~	~	DFO-3	Sabina commits to including additional details on the Umwelt Lake outflow in the FEIS.
188	6	Freshwater Environment	~	~	DFO-4	Sabina commits to providing additional rationale for selection of design criteria for sizing of culverts in the FEIS.
189	6	Freshwater Environment	~	~	DFO-5	Sabina commits to conducting a fish passage flow assessment as part of the culvert design process. This information will appear in the FEIS.
190	6	Freshwater Environment	~	~	DFO-15	Sabina commits to updating relevant references to current DFO policies and guidance documents found on the agency website. These updates will be completed within the FEIS.
191	6	Freshwater Environment	EC-14	~	~	For the FEIS, Sabina commits to providing details on the total volume of water requiring treatment at the George Property. These values will support the final sizing and design of the collection ponds.
192	6	Freshwater Environment	~	~	EC-19	Wherever reasonable Sabina prefers the use of passive culverts instead of active pumping. Sabina commits to properly installing culverts where they are necessary. This information will appear in the FEIS.
193	6	Freshwater Environment	~	EC-25	~	Sabina commits to satisfy all regulations, including MMER, and water quality targets will be progressed further during the water licencing process.
194	6	Freshwater Environment	~	~	EC-26	Sabina commits to providing a detailed site-wide water and load balance. This information will be presented in the FEIS.
195	6	Freshwater Environment	~	~	EC-30	Sabina commits to adding xylene in the FEIS as a measured parameter for these discharge criteria.
196	6	Freshwater Environment	~	~	EC-33	Sabina commits to addressing seepage capture and pump-back requirements for dyke structures at the George site. Requested information will be presented in the FEIS.
197	6	Freshwater Environment	GN-8	~	~	The effects of evapotranspiration were discussed in the Volume 6, Chapter 1 (Sections 1.1.1.3, 1.1.3.2, and 1.1.3.4) but were not addressed in Volume 9, Chapter 2, "The Effects of the Environment on the Project". Sabina commits to providing this interaction in the FEIS risk matrix.
198	6	Freshwater Environment	GN-9	~	~	Sabina plans to develop Standard Operating Procedures that include the use of chlorination to ensure potability of water. Regular testwork of water quality will be conducted to ensure potable water meets Canadian drinking water standards. Sabina commits to meet all regulatory requirements around the management of potable water and additional details will be provided in the FEIS.
199	6	Freshwater Environment	~	~	KIA-CR-11	Sabina commits to providing additional justification for design criteria adopted for any water management structures. Furthermore, Sabina commits to completing and presenting all appropriate geotechnical and hydrotechnical analysis of water management structure in the FEIS.
200	6	Freshwater Environment	~	~	KIA-CR-16	Sabina commits to monitoring TIA water quality until the WQO's are met.
201	6	Freshwater Environment	~	~	KIA-CR-17	The updated water balance will be used to provide additional details on the Umwelt Lake and outflow system in the FEIS. If an updated effects assessment indicates residual effects, then mitigation measures such as offsetting will be considered in collaboration with DFO and the KIA.
202	6	Freshwater Environment	~	~	KIA-IR-17	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. Further, Sabina commits to provide specific tundra discharge locations for treated sewage, along with supporting rationale, in the FEIS.

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203	6	Freshwater Environment	~	~	KIA-CR-18	Sabina commits to conducting a second year of baseline fish sampling in Giraffe Lake if this lake remains a potential receiving environment. Sabina will make this information available in the FEIS or prior to the final technical review.
204	6	Freshwater Environment	~	~	KIA-IR-19	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. Further, Sabina commits to provide specific tundra discharge locations for treated sewage, along with supporting rationale, in the FEIS.
205	6	Freshwater Environment	~	~	KIA-IR-20	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. Further, Sabina commits to provide specific tundra discharge locations for treated sewage, along with supporting rationale, in the FEIS.
206	6	Freshwater Environment	~	~	KIA-IR-21	Sabina commits to provide specific tundra discharge locations for treated sewage, along with supporting rationale, in the FEIS.
207	6	Freshwater Environment	~	~	KIA-IR-22	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. This information will appear in the FEIS.
208	6	Freshwater Environment	~	~	KIA-IR-23	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. This information will appear in the FEIS.
209	6	Freshwater Environment	~	~	KIA-IR-25	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. This information will appear in the FEIS.
210	6	Freshwater Environment	~	~	KIA-IR-26	Sabina commits to provide further rationale and methodology for criteria selection during the water licensing process. This information will appear in the FEIS.
211	6	Freshwater Environment	~	~	KIA-IR-27	Sabina commits to developing a water and load balance that will be used to develop water management plans for all stages of the project including construction, operation, closure and post-closure. This will be used to demonstrate that any discharge that runoff will comply with appropriate WQOs once it reaches the closest waterbody or watercourse. Locations for discharges to the tundra along with rationale for their selection will be provided. This information will be provided as part of the FEIS.
212	6	Freshwater Environment	~	~	KIA-IR-28	In the FEIS, Sabina commits to clarifying the TSS thresholds and mitigation measures to meet those limits as well as describing the fate of water removed from Llama Lake, Lytle Lake and Occurrence Lake as part of the site-wide water and load balance.
213	6	Freshwater Environment	~	~	KIA-IR-29	Sabina commits to including seepage from the TIA as a pathway for the freshwater water quality assessment chapter for the FEIS.
214	6	Freshwater Environment	~	~	KIA-IR-33	Sabina commits to use figures illustrating creek cross sections under baseline and projected scenarios for a range of wet and dry years in the FEIS.
215	6	Freshwater Environment	KIA-88	~	~	The preliminary designs for the impermeable dykes will be an output from the FS. Further geotechnical investigation will address the dyke design, the foundation conditions and the potential for the development of a talik. The potential for seepage from Lytle and Occurrence Lake to the Locale 1 and Locale 2 pits will be considered. Estimated seepage rates and management of the potential seepage will also be completed. Sabina commits that this information will be included in the FEIS.
216	6	Freshwater Environment	~	KIA-128	~	Sabina commits to providing design criteria in the FEIS and NWB applications to quantify the wetted habitat loss in all impacted water.
217	6	Freshwater Environment	NRCan-4	~	~	Further geothermal analysis is being conducted as part of ongoing preparation for the FS and Sabina commits that this information will be included in the FEIS.
218	6	Freshwater Environment	NRCan-5	~	~	Saline water management has been considered through the operational stipulation to transport the saline water to the TIA. Sabina commits to include saline groundwater contributions to the TIA and confirm the final quality of the tailings supernatant at closure in the FEIS water balance .
219	6	Freshwater Environment	NRCan-8	~	~	For the FEIS, Sabina commits to developing a thermal model to confirm permafrost predictions beneath the TIA.

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220	6	Freshwater Environment	~	~	NRCAN-11	Sabina commits to depicting any groundwater connections with mine openings. Where discharges to the environment are predicted based on the site wide water and load balance, appropriate mitigation measures will be presented in the FEIS.
221	6	Freshwater Environment	~	~	NRCAN-17	Sabina commits to presenting the scope and details of the hydrogeological modelling completed. Requested information will be presented in the FEIS.
222	6	Freshwater Environment	~	~	NRCAN-18	Sabina commits to providing details on the Llama Lake talik zone through all phases of mining and closure. Details will be presented in the FEIS.
223	6	Freshwater Environment	~	~	NRCAN-19	Sabina commits to providing an updated analysis of permafrost distribution at depth through thermal modelling, updated data analysis, and any other means required to depict any groundwater connections with the mine openings. This analysis will provide an updated account of the potential formation/decline of taliks, including any potential through-taliks. Requested information will be presented in the FEIS.
224	6	Freshwater Environment	~	~	NRCAN-22	Sabina commits to providing justification for not obtaining more information on the fault zones as it relates to groundwater flows in talik regions. This information will be provided in the FEIS.
225	6	Freshwater Environment	~	~	NRCAN-24	Sabina will develop and operate a safe mine including appropriate underground water management. These elements will be addressed as part of the standard mine operational procedures to be approved by the Mines Inspector.
226	6	Freshwater Environment	~	~	NRCAN-27	Sabina commits to providing results of any groundwater modelling completed for Llama pit. These details will be presented in the FEIS.
227	6	Freshwater Environment	~	~	NRCAN-29	Sabina commits to providing an updated analysis of permafrost distribution at depth through thermal modelling, updated data analysis, and any other means required to depict any groundwater connections with the mine openings. This analysis will provide an updated account of the potential formation/decline of taliks, including any potential through-taliks. Requested information will be presented in the FEIS.
228	7	Marine Environment	DFO-6	~	~	Sabina commits to develop marine mammal observation procedures in-line with federal and government of Nunavut shipping management protocols. Further details will be provided in the FEIS.
229	7	Marine Environment	~	~	DFO-6	For the FEIS, Sabina will include potential impacts along the shipping route, including ship noise and ship strikes. This will be conducted utilizing publically available information.
230	7	Marine Environment	~	~	EC-2	Sabina will provide additional detail in the FEIS and further consider realistic 'no disturbance' setbacks.
231	7	Marine Environment	~	~	EC-2	Sabina will provide an annual log and map of ship tracks in annual monitoring reports.
232	7	Marine Environment	~	~	EC-3	To the extent that the information is made available from the Canadian Coast Guard, Sabina commits to providing data on the percentage increase in shipping traffic in the FEIS.
233	7	Marine Environment	~	~	EC-5	Sabina commits to working within the existing regulatory framework defined by Transport Canada. An approved SOPEP will be in place by the shipping provider prior to the commencement of any shipment.
234	7	Marine Environment	EC-6	~	~	Sabina commits to develop seabird observation procedures in-line with federal and government of Nunavut shipping management protocols. These details will be provided in the FEIS.
235	7	Marine Environment	~	~	EC-8	Sabina commits to working within the existing regulatory framework defined by Transport Canada. Sabina will consider additional clarity on the reporting of bird strikes in the Incidental Observation Procedure included in the FEIS. If the frequency of strikes is significant, Sabina will implement adaptive management procedures to address this concern.
236	7	Marine Environment	~	EC-9	~	Sabina commits to complying with standard shipping guidance, and implementing a series of management plans, which will be in effect within the marine Local Study Area and/or the marine Regional Study Area in Bathurst Inlet. Implemented together, these plans will limit effects on marine birds in the common shipping route.
237	7	Marine Environment	~	~	EC-25	Sabina commits to a further review in the FEIS of monitoring requirements of discharged brine for compliance with subsection 36(3) of the Fisheries Act prior to release to the marine environment.

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238	7	Marine Environment	~	~	TC-2	For the FEIS, Sabina will provide details on any accommodation barge or overwintering fuel vessel proposed for use. This will address compliance with regulatory requirements and include information on the type of vessels involved, operations plan, and risk assessment.
239	7	Marine Environment	~	TC-3	~	Sabina commits to reference the AWPPA in the Shipping Management Plan section related to pollution prevention as the vessels transiting to/from and employed within the MLA are required to comply with the Act in addition to the Canada Shipping Act (2001).
240	7	Marine Environment	~	~	TC-3	Sabina commits to reviewing, for the FEIS, the stated regulatory requirements specific to choice of route and vessels.
241	7	Marine Environment	~	TC-4	~	Sabina commits to request a meeting with Canadian Hydrographic Services officials to ensure their engagement on a potential bathymetric survey of the MLA area.
242	8	Human Environment	~	~	AANDC-31	Sabina commits to further consider the potential of the Project to result in out-migration of skilled workers, as well as out-migration of former employees upon various closure phases of the mine. This information will be included in the FEIS.
243	8	Human Environment	~	~	AANDC-32	For the FEIS, Sabina will provide training plans derived from the completed job descriptions for the Back River site positions.
244	8	Human Environment	~	~	AANDC-34	Sabina will govern gender equality through the CHRC - Human Rights Maturity Model where current and future polices and practices follow: 1) Leadership and accountability; 2) Capacity building and resources; 3) Alignment of policies and processes; 4) Communication and consultation; and 5) Evaluation for continuous improvement. This commitment will appear in the FEIS.
245	8	Human Environment	~	~	AANDC-34	Sabina will work with relevant Community groups to promote and encourage the candidacy of women for employment vacancies. This commitment will appear in the FEIS.
246	8	Human Environment	AANDC-60	~	~	Sabina commits to providing an FEIS update to the Mince Closure Reclamation Plan that summarizes the post-reclamation risks to humans and the environment. This will bebsed on more detailed evaluations provided in Volume 8, Chapter 6 and applicable Volume 8 appendices. Sabina will also present a closure cost estimate.
247	8	Human Environment	AANDC-67	~	~	Sabina commits to provide additional details on workforce requirements as part of the FEIS submission.
248	8	Human Environment	~	AANDC-69	~	Sabina commits to update the FEIS to include more recent socio-economic baseline data than the information referenced in the Volume 8, Chapter 3.
249	8	Human Environment	AANDC-70	~	~	Sabina commits to providing appropriate training to ensure Inuit and Nunavummiut have employment opportunities.
250	8	Human Environment	AANDC-73	~	~	Sabina commits to providing appropriate notice periods for lay-offs from Back River operations as mandated by the statutes of the Labour Standards Act of Nunavut.
251	8	Human Environment	~	~	GN-1	The Kitikmeot Region SEMC is actively engaged in the monitoring of conditions in communities, including aspects of Population Demographics and Community Infrastructure and Public Services. Sabina will continue to participate in this ongoing initiative.
252	8	Human Environment	~	~	GN-3	Sabina commits to ongoing community engagement so that members of the communities, including youth and education service providers, are aware of the career opportunities with the Project and can make informed decisions regarding education and skills development. This information will appear in the FEIS.
253	8	Human Environment	~	~	GN-3	Sabina commits to actions to promote youth being able to make informed choices regarding their career direction, including encouraging youth to stay in school to take advantage of the employment opportunities made available by the Project. This information will appear in the FEIS.
254	8	Human Environment	~	~	GN-3	Updated information will be included in the FEIS. This will include more specific information on the number of jobs that will be available with the Project and the general education/training requirements for these jobs.

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255	8	Human Environment	~	~	GN-4	Further details regarding the workforce schedule, including number of positions and general skill and experience requirements, will be provided in the FEIS based on what is known at the time with the advancement of engineering design.
256	8	Human Environment	~	~	GN-4	Sabina will work closely with GN Family Services and the Apprenticeship program in Nunavut to align mine site program planning. This information will appear in the FEIS.
257	8	Human Environment	~	~	GN-5	Sabina commits to updating the baseline information provided in Volume 8, Chapter 3 (Socio-economics), Section 3.1.2.2 (Employment) and Section 3.1.2.3 (Education and Training) with the most current and applicable National Household Survey and Labour Force Survey data. Additional analysis and more detail will be provided in the FEIS for potential in-migration due to Project-related indirect (supplier) and induced employment in Kitikmeot communities and the consequences/needs of immigrant workers,
258	8	Human Environment	~	~	GN-6	Sabina commits to including additional information in the FEIS concerning: 1. Training approaches and methods specific to Nunavummiut and Inuit 2. Incorporation of Inuit Qaujimajatuqangit into Community Based Monitoring initiatives.
259	8	Human Environment	~	~	GN-7	Sabina will continue to support childcare in the communities through our donations policy and informal visits to assess potential areas of need. Also, Sabina employees will be encouraged to support childcare through volunteering and participation on the associated non-profit boards responsible in each community for the delivery of childcare programming. This information will appear in the FEIS.
260	8	Human Environment	~	~	GN-8	Sabina will continue to support childcare in the communities through our donations policy and informal visits to assess potential areas of need. Also, Sabina employees will be encouraged to support childcare through volunteering and participation on the associated non-profit boards responsible in each community for the delivery of childcare programming. This information will appear in the FEIS.
261	8	Human Environment	~	~	GN-9	Sabina commits to providing in the FEIS further analysis and more detail regarding the potential for migration into Cambridge Bay and Kugluktuk due to Project-related indirect and induced employment. As recommended by the Nunavut Housing Corporation (NHC), a sensitivity analysis that incorporates a number of scenarios will be included as part of the analysis given the uncertainties involved.
262	8	Human Environment	~	~	GN-10	Sabina commits to reviewing relevant statements concerning annual housing construction in Nunavut and, in the FEIS, will provide a regional breakdown of where new public and private housing units have been constructed where the information is available.
263	8	Human Environment	~	~	GN-11	For the FEIS, Sabina will provide information regarding sexual health as part of our general Wellness information program to be delivered at site. The company commits to providing on-site access to condoms in an effort to mitigate the spread of STI's. The program information will be delivered by qualified health practitioners.
264	8	Human Environment	~	~	GN-12	Sabina will review the subject of "up-to-date" immunization for employees and provide additional details in the FEIS. Sabina will be offering annual influenza vaccinations to all employees and providing education on proper personal hygiene to limit the spread of influenza. All medical incidents or occurrences, including those tied to a rabid animal, will be addressed through the company HS&E policy, where a qualified on-site Nurse/Medic will assess the situation and where necessary consult with our Medical Doctor. All regulatory reporting will be adhered to for compliance.
265	8	Human Environment	~	~	GN-13	In the event that pre-employment medicals are required, Sabina will commit to a service fee payable to the Community Health services based on a negotiated fee schedule. Sabina will develop any pre-employment medical screening program in discussion with Nunavut Health Services. This commitment will be added to the FEIS.
266	8	Human Environment	~	~	GN-14	Sabina commits to providing a descriptions of all employee support programs and training undertaken including: a qualitative description of the structure and goals of each program; the number of times it was provided to employees and; the percentage of employees (at every level) who have successfully completed the program. This will be provided annually via a relevant annual report mechanism.

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267	8	Human Environment	~	~	GN-14	Sabina commits to providing a description of the manager's, councilors, or HR representative's duties in relation to employee support, their on-site availability and a general assessment of whether the position is achieving the desired goals. This will be provided annually via a relevant annual report mechanism.
268	8	Human Environment	~	~	GN-15	Sabina commits to integrating Table GN-CH-37 (Regional Study Area Archaeology Site Types) into the appropriate sections of FEIS.
269	8	Human Environment	~	~	GN-16	Sabina commits to integrating Table GN-CH-41-1 (Archaeological Site Cultural Affiliations) and Table GN-CH-41-2 (Archaeological Artifacts by Site) into the appropriate sections of the FEIS.
270	8	Human Environment	~	~	GN-17	Sabina commits to providing a set of maps to the Department of Culture and Heritage on March 31st of each year illustrating changes in the Project footprint are occurring or an archaeological permit is obtained.
271	8	Human Environment	~	~	GN-18	Sabina commits to providing summaries of the current status of all known archeology sites within 80 meters of the Project Infrastructure by March 31 of each year.
272	8	Human Environment	~	GN-23	~	For the FEIS, Sabina commits to updating data for 'GDP contributions of the Back River Project for Operation' (Volume 8, Table 3.5-8)
273	8	Human Environment	~	GN-24	~	Sabina commits to providing more recently released information from the 2011 National Household Survey in the FEIS.
274	8	Human Environment	GN-28	~	~	Sabina commits to working in partnership with the KIA and other stakeholders such as MiHR, Northern Arctic College to identify skills gaps for work readiness training.
275	8	Human Environment	~	GN-29	~	Sabina commits to ensuring appropriate policies are included in the FEIS to protect the workforce from sexual harassment or abuse.
276	8	Human Environment	GN-31	~	~	Sabina commits to providing an EAP which is appropriate to our workforce. That may include access to counselors onsite or referrals to additional facilities should the need arise. Sabina remains committed to allowing for employment opportunities onsite for Inuinnaqtun and/or Inuktitut speaking staff.
277	8	Human Environment	GN-32	~	~	Currently there are no formalized plans for community contributions related to community health and wellbeing. Over the past five years, Sabina has committed funds and resources towards community initiatives including daycares, food banks, suicide prevention, traditional pursuits, cultural events, and education initiatives. As the Project advances Sabina remains committed to working with the Kitikmeot Inuit Association, Government of Nunavut, the Kitikmeot communities and associated community groups to ensure reasonable community benefits are established. This will be stated in the FEIS.
278	8	Human Environment	GN-33	~	~	Sabina has obtained information on the new Rent Scale System and will include this information, where relevant, in the FEIS. Going forward, Sabina commits to working with the NHC, as appropriate, to help ensure that accurate information is provided to workers.
279	8	Human Environment	~	GN-34	~	Sabina commits to making a formal request to the Nunavut Housing Corporation for detailed information on the number of new housing units by community. This will be provided in the FEIS.
280	8	Human Environment	~	GN-36	~	In the FEIS, Sabina commits to providing updated information on the Nunavut Housing Corporation's annual budget, as made available by the NHC.
281	8	Human Environment	~	GN-36	~	Sabina commits to correcting the numbers presented in the DEIS for archaeological sites such that values are consistent throughout the FEIS for each project management area.
282	8	Human Environment	~	GN-39	~	In the FEIS, Sabina commits to providing more detail on the criteria used to assign archaeological significance in the main body of the EIS (Volume 8, Section 1.5.2.4).
283	8	Human Environment	GNWT-13	~	~	Sabina commits to present a final determination of flight routes and schedules in the FEIS. It is anticipated that some Southern employees may travel through Yellowknife in order to access site during the Project life.
284	8	Human Environment	GNWT-14	~	~	Sabina commits to responsibility for financing any potential evacuations of all project personnel. This will be stated in the FEIS.
285	8	Human Environment	KIA-44	~	~	For the FEIS, Sabina commits to include a more robust consideration of the broader RSA effects that were considered and included in the assessment (Vol 8, Employment - Cumulative Residual Effects).

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286	9	Methodology & Effects of Environment on the Project	AANDC-3	~	~	Sabina commits to clarifying in the FEIS, the approach used to determine spatial effects including consideration for the extent of potential project effects.
287	9	Methodology & Effects of Environment on the Project	~	~	AANDC-16	Sabina commits to review and update, as appropriate, the chapter for accidents and malfunctions in the FEIS.
288	9	Methodology & Effects of Environment on the Project	~	AANDC-55	~	Sabina commits to providing additional information on oil spill response procedures, and expected conditions outside the MLA, for non-navigable rivers, creeks and other waterways. This will be provided for the FEIS.
289	9	Methodology & Effects of Environment on the Project	EC-Followup-1	~	~	Sabina commits to including the missing appendices from the Oil Pollution Emergency Plan in the FEIS.
290	9	Methodology & Effects of Environment on the Project	EC-Followup-3	~	~	For the FEIS, Sabina commits to providing response details in an updated version of the Spill Contingency Plan for a potential ammonium nitrate spill to water.
291	9	Methodology & Effects of Environment on the Project	EC-Followup-4	~	~	Sabina commits to replacing the references from (Section 7.2.2 Regional Environmental Emergencies Team of the Oil Pollution Emergency Plan; and Section 2.1.6, Spill Response Procedures, of the Shipping Management Plan) with the Environmental Emergencies Science Table information provided by Environment Canada.
292	9	Methodology & Effects of Environment on the Project	~	~	TC-1	Sabina commits to amending the legislative requirement section of the OPEP to comply with section 168 (1) (b) (iii) of the CSA, 2001. Sabina will include a list of all employees authorized to implement the OPEP and their contact information, on the Oil Handling Facility Declaration. It should be noted that any list of authorized employees would be initial in detail as Sabina will not have all relevant positions hired. All requested information will be included in the FEIS.
293	10	Management Plans	~	~	AANDC-7	Sabina commits to determining potential groundwater flow pathways (where possible) and including those in the site wide water and load balance. This water and load balance will be used to determine the appropriate water management plans for all the project phases including construction, operation, closure and post closure. This information will be presented in the FEIS.
294	10	Management Plans	~	~	AANDC-8	Sabina commits to determining the groundwater flow pathways and including those in the site wide water and load balance. This water and load balance will be used to determine the appropriate water management plans for all the project phases including construction, operation, closure and post closure. This information will be presented in the FEIS.
295	10	Management Plans	AANDC-13	~	~	Sabina commits to providing additional design details deemed necessary for any planned raw water intakes in a future update to the Site Water Monitoring and Management Plan in the FEIS.
296	10	Management Plans	AANDC-18	~	~	Sabina commits to providing details regarding the management of potential overflow prior to pit water quality meeting limits. This will include predictions for pit filling times in the FEIS.
297	10	Management Plans	~	~	AANDC-21	Sabina commits to providing additional rationalization of the temporal boundaries used to determine pit water quality with consideration for predicting the ultimate residual effects to water quality in the long term. A suitable water management plan will be presented in the FEIS.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
298	10	Management Plans	~	~	AANDC-22	Sabina commits to providing a detailed site wide water and load balance for the project. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
299	10	Management Plans	~	~	AANDC-23	Sabina commits to providing a detailed site wide water and load balance for the property. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
300	10	Management Plans	~	~	AANDC-24	Sabina commits to providing an updated Mine Closure Reclamation Plan and closure costs in the FEIS.
301	10	Management Plans	~	~	AANDC-25	Sabina commits to re-evaluating and providing additional justification on the duration of post-closure monitoring that will be required based on the new Mine Closure Reclamation Plan submitted as part of the FEIS.
302	10	Management Plans	~	~	AANDC-27	Sabina commits to including the potential for re-vegetation research in the Preliminary MCRP in the FEIS.
303	10	Management Plans	~	~	AANDC-33	Sabina commits to providing additional details on how Sabina will support development of a workforce that is career oriented, particularly in relation to the Continuous Development and Training Program. This information will be presented in the FEIS.
304	10	Management Plans	AANDC-35	~	~	For the FEIS, Sabina commits to providing an updated water balance into the management plans and water licence application material. This will specific include inputs from any saline groundwater inflow.
305	10	Management Plans	~	AANDC-44	~	Sabina commits that the AEMP analyses will explicitly consider statistical power and will be refined and developed throughout the program. For example, time-series regression analyses may be introduced to the analysis later in the AEMP to provide independent validation and verification of results.
306	10	Management Plans	AANDC-52	~	~	As part of the FEIS and water licencing process, Sabina commits to update and build on the Adaptive Management framework described in the EMP (Volume 10, Chapter 1).
307	10	Management Plans	DFO-5	~	~	Potential impacts due to physical works associated with the desalination plant at the MLA will be addressed as part of the overall Fisheries Offsetting Plan provided in the FEIS.
308	10	Management Plans	~	~	DFO-7	For the FEIS, Sabina will produce appropriate protocols, based on the DFO protocols, but adapted for incidental marine mammal observations by ship's personnel.
309	10	Management Plans	~	~	DFO-8	Sabina commits to designing the desalinization plant intake and outfall structures in accordance with DFO Operational Standards and any other guidelines. Details will be presented in the FEIS.
310	10	Management Plans	~	~	DFO-9	Sabina commits to continuing to explore offsetting options and consultation with the affected communities through the permitting process. Offset engagement has and will continue to be primarily those communities in close proximity to the Project.
311	10	Management Plans	~	~	DFO-10	Sabina commits to continue working with the DFO in the development of the offsetting plan and the quantification of Serious Harm.
312	10	Management Plans	~	~	DFO-11	If any other lakes are proposed as water source lakes for closure, then Sabina commits to providing details specific to those lakes in the FEIS.
313	10	Management Plans	~	~	DFO-13	Sabina commits to producing monitoring and adaptive management SOPs for seal lairs during the construction of the winter road to the MLA and aircraft strip.
314	10	Management Plans	~	~	DFO-14	For the FEIS, Sabina commits to updating the general triage number and email address from the DEIS to the current DFO information provided.
315	10	Management Plans	~	~	EC-1	Sabina commits to recording data on incidental seabird observations along the shipping route. Proposed methods for observations and data handling to ensure compatibility with existing databases will be included in the FEIS Wildlife Mitigation and Monitoring Plan.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
316	10	Management Plans	~	~	EC-4	In order to monitor potential effects on waterfowl in on-site ponds, Sabina commits to: 1) monitoring water quality in Project ponds, 2) monitoring whether migratory waterfowl use these ponds for staging and breeding, 3) if the water quality in a pond is poor and waterfowl are using the waterbody for a sufficient period to cause the potential for harm (a combination of evaluating the water quality and the time spent using the on-site ponds), then Sabina will conduct adaptive management activities to exclude waterfowl from ponds. This information will appear in the FEIS.
317	10	Management Plans	EC-Followup-5	~	~	For the FEIS, Sabina commits to updating the Key Government Contacts sections (Table 2-4 of the Risk Management and Emergency Response Plan and Table 5.10-4 of the Spill Contingency Plan) to remove "Wade Romanko, Env. Emerg. Officer". All Environment Canada spill information is now facilitated via the NWT/NU 24hour Spill Report Line.
318	10	Management Plans	~	~	EC-7	For all pertinent management plans in the FEIS, Sabina commits to the monitoring of spills in marine environments and reporting to the NT-NU Spill Line the presence of oily sheens on the water near vessels at the port site.
319	10	Management Plans	~	~	EC-9	The buffers listed in Table 1 of the EC comment Section 6.1.9 will be used as guidance, taking into account site-specific and project-related restrictions for operability. Mitigation actions and their success will be reported in the WMMP report. This information will appear in the FEIS.
320	10	Management Plans	~	~	EC-11	Sabina commits to consulting the document titled “Preventing Wildlife Attraction to Northern Industrial Sites” (Canadian Wildlife Service 2007) while preparing procedures for waste and wildlife attractant management. This information will appear in the FEIS.
321	10	Management Plans	~	~	EC-12	The fish-out program for Llama Lake will follow the DFO protocols for such programs in Nunavut and the NWT. Suggested avoidance measures will be considered and can be included in the fish out plan in the FEIS.
322	10	Management Plans	~	EC-13	~	For the FEIS, Sabina commits that the potential impacts of climate change will be further considered in the Project design as a result of FS optimization. This will apply to the TIA design basis.
323	10	Management Plans	~	~	EC-14	In the FEIS, Sabina will add a commitment to the Site Water Monitoring and Management Plan that terrestrial discharge sites will be assessed for stability and thaw-susceptibility during detailed design and/or on-site during construction, as appropriate.
324	10	Management Plans	~	~	EC-16	Sabina commits to providing details of landfill design including locations, waste quantifications, and management of contact water. Consideration will be given to the Guidelines for Developing a Waste Management Plan (MVLWB, 2011). This information will appear in the FEIS.
325	10	Management Plans	~	~	EC-18b	The 2013 Bathurst Inlet Marine Diesel Fuel Spill Modelling Report presented in Appendix V9-3A will be updated to show sensitive marine mammal areas and fishing areas important to Inuit, and evaluate potential effects of a spill on these figures in addition to coastal birds.
326	10	Management Plans	~	~	EC-18c	For the FEIS, Sabina will prepare a tactical response plan showing fuel spill dispersion modelling results relative to local sensitivities (i.e., marine birds, fishing areas, marine mammal areas), that also identifies the location of strategic booming, if any is recommended.
327	10	Management Plans	~	~	EC-18d	The FEIS Hazardous Waste Management Plan will be updated to include applicable cyanide mitigation and management measures, principles and standards.
328	10	Management Plans	~	~	EC-24	Sabina commits to including a reference on already established Marine VECs into the FEIS Site Water Management Plan.
329	10	Management Plans	~	~	EC-27	Sabina commits to including detailed mitigation measures to minimize loss/spillage; and BMPs during use, storage, transport and handling of explosives in the FEIS Explosives Management Plan.
330	10	Management Plans	~	~	EC-28	Sabina commits to providing a detailed site wide water and load balance for the property. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
331	10	Management Plans	~	~	EC-32	Sabina commits to monitoring for erosion at the western outlet of Rascal Lake with additional details to be included in the FEIS Site Water Monitoring and Management Plan.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
332	10	Management Plans	~	~	EC-35	Sabina commits to keeping information on harmonization of EEM in the FEIS AEMP and working with EC and other agencies to finalize the AEMP during the water licence process.
333	10	Management Plans	~	~	EC-36	Sabina commits to working with EC and other agencies to finalize sampling sites for the AEMP and Site Surveillance Monitoring as part of the water licence process.
334	10	Management Plans	~	~	EC-37	In the FEIS AEMP, Sabina commits to providing the proposed locations of sampling and the number of samples within each waterbody. This will be developed as part of the water licence process.
335	10	Management Plans	~	~	EC-39	As part of the AEMP for water licencing, Sabina commits to working with EC and other agencies to define “significant change” as used for the water quality and sediment quality indicators.
336	10	Management Plans	~	~	EC-40	Sabina commits to working with EC and other agencies to summarize and clearly present baseline data for the AEMP as well as outline all sampling procedures for previous sample collection.
337	10	Management Plans	~	~	GN-2	Through the Back River Project Socio-Economic Monitoring Program (SEMP) and annual reporting to NIRB, Sabina commits to socio-economic monitoring throughout all phases of the Project as long as there is a reasonable expectation of Project-related impacts to the socio-economic environment. This will include temporary closure and care and maintenance phases of the Project. This commitment will be included in the FEIS and finalized in the Terms of Reference.
338	10	Management Plans	~	GN-5	~	For the FEIS, Sabina commits to further refining management plans, including the overall Environmental Management Plan to include all required monitoring programs, and detail how the overall approach to resource allocation, adaptive management, and integration of TK throughout the life of the Project will be implemented. The EMP will also identify the approach to Inuit engagement and monitoring.
339	10	Management Plans	~	~	GN-19	Sabina commits to inserting a reference, in the FEIS, to Appendix B of the Cultural and Heritage Resources Protection Plan for the definition of Chance Find Procedure as well as include relevant educational material in a training program that would be provided to on-site workers.
340	10	Management Plans	~	GN-21	~	Sabina commits to providing additional clarity on proposed measures to mitigate impacts on grizzly bears as well as provide additional information related to Bear-Human Deterrent and Bear Safety within the FEIS.
341	10	Management Plans	~	~	GN-21	More information will be added to the monitoring section of the WMMP for the FEIS that includes detail on proposed methods, threshold values, and their rational for monitoring activities.
342	10	Management Plans	~	~	GN-22	Per the detailed response to GN-22, Sabina commits to including more information in the management sections of the WMMP for the FEIS.
343	10	Management Plans	~	~	GN-24	Sabina commits to provide more detail on the likely framework for contributions to government-led initiatives for monitoring caribou, and a backup plan should these government-led programs not come to fruition in time for the construction of the Project. This information will appear in the FEIS.
344	10	Management Plans	~	~	GN-24	The Wildlife Mitigation and Monitoring Plan for the FEIS will include more information on the proposed analysis of the remote camera data used for monitoring certain wildlife VECs.
345	10	Management Plans	~	~	GN-27	Sabina will include more information in the grizzly bear monitoring and management component of the WMMP. This information will appear in the FEIS.
346	10	Management Plans	~	~	GN-28	Sabina will include more information in the grizzly bear monitoring and management component of the WMMP. This information will appear in the FEIS.
347	10	Management Plans	~	~	GN-29	Sabina commits to adding more information to the extensive list of sections provided in our response to GN-29. This will produce a unified response plan, including information on coordinating with government agencies and HTOs. This information will appear in the FEIS.
348	10	Management Plans	~	~	GN-30	Sabina commits to expanding the description of the analysis used to evaluate the camera techniques listed in Section 7.3.3 of the WMMP (Volume 10, Chapter 20).
349	10	Management Plans	~	~	GN-31	Sabina will update and expand the management and monitoring sections of the WMMP that deal with attraction of predators (including wolverine) to camps and managing problem wildlife (including wolverine). This information will appear in the FEIS.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
350	10	Management Plans	~	~	GN-32	Additional information on the proposed raptor monitoring protocols will be added to the wildlife mitigation and management plan (WMMP) for the FEIS following guidance on measuring and analyzing a zone of influence (ZOI) on nest success by the Canadian Wildlife Service. This information will appear in the FEIS.
351	10	Management Plans	GNWT-1	~	~	As requested by the GN DOE and a stated objective of the GNWT-ENR, Sabina commits to contributing to regional caribou monitoring efforts focused on herd-level effects. This effort will be conducted in collaboration with the GN.
352	10	Management Plans	~	~	GNWT-6	Sabina commits to adding a section to the WMMP which describes the framework by which these various mitigation and monitoring activities for caribou are integrated together. This plan will describe the various stages of work alteration based on the number and distance of caribou to the Project site.
353	10	Management Plans	~	~	GNWT-8	Sabina will conduct grizzly bear den surveys along the winter road. Details of these surveys will be provided in the updated WMMP Plan that will be included in the FEIS.
354	10	Management Plans	~	~	KIA-IR-1	Sabina commits to including more information in the WMMP plan of the FEIS on the proposed monitoring for wildlife, with emphasis on a framework for working with government to monitor caribou in the area.
355	10	Management Plans	~	~	KIA-CR-2	Sabina commits to adding more detail to each section of the WMMP that deal with limiting the attractiveness of the camp to carnivores and managing problem wildlife on site. This FEIS update to the WMMP will include more detail on monitoring measures and triggers for mitigation actions.
356	10	Management Plans	~	~	KIA-IR-2	Sabina commits to including more information in the WMMP plan of the FEIS on the proposed monitoring for wildlife, with emphasis on a framework for an alternate monitoring plan for caribou, should the government-led plan not be in place by the point where construction is conducted.
357	10	Management Plans	~	~	KIA-IR-4	Sabina commits to including more information in the WMMP plan of the FEIS on the proposed monitoring for wildlife, with emphasis on focal species monitoring for other wildlife VECs which include a discussion surrounding power and experimental design.
358	10	Management Plans	~	~	KIA-IR-4	Sabina commits to including more information in the WMMP plan of the FEIS on the proposed monitoring for wildlife, with emphasis for on-site monitoring for grizzly bear interactions with camp and monitoring of the waste management processes and facilities as attractants.
359	10	Management Plans	~	~	KIA-CR-5	Sabina commits to adding additional references to monitoring programs from other, similar, operating projects in similar habitats to the discussion of effects in the FEIS, where additional information is available.
360	10	Management Plans	~	~	KIA-CR-6	Sabina commits to providing a conceptual design for the closure of the project that can be used in the environmental assessment. The potential impacts of Closure effects will be identified and assessed within the FEIS.
361	10	Management Plans	~	~	KIA-IR-30	In the FEIS, Sabina commits to updating Table 13.1 in the EMP to better reconcile management plan applicability to each project phase.
362	10	Management Plans	KIA-68	~	~	Monitoring of temperatures in stockpiles will be carried out as identified in the monitoring section of the Waste Rock and Tailings Management Plan (Volume 10, Chapter 9). Sabina commits to progress the design criteria during the feasibility study. It will be provided in the FEIS.
363	10	Management Plans	KIA-93	~	~	Sabina commits to present more information on the design of the Umwelt underground plug as part of the FEIS Mine Reclamation and Closure Plan.
364	10	Management Plans	KIA-113	~	~	Sabina commits to review Table 13.1 in Volume 10 Chapter 1 "Applications of Current EMP's to Phases of the Project" and make necessary changes. These changes will be reflected in the FEIS.
365	10	Management Plans	KIA-114	~	~	Sabina commits that the Site Water Monitoring and Management and the Mine Closure and Reclamation plans will continue to be refined for the FEIS. This will include discharge locations for mine contact water and expected potential volumes.
366	10	Management Plans	KIA-115	~	~	Sabina commits to updating the Explosives Management Plan to incorporate environment design criteria from the FS for the transport, storage and handling of explosives. These requirements will include secondary containment and procedures for spill prevention and response.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
367	10	Management Plans	~	KIA-127	~	Sabina commits to providing an updated Fish Offsetting Plan in the FEIS with detail to be included in an application for a DFO authorization as follows: the number of structures being placed in aquatic habitats; structure locations and size of footprints; the type of habitat, including the importance of the habitat to fish; the magnitude of impact; and an evaluation of the ability for fish to pass at water crossings at all flow levels.
368	10	Management Plans	NRCan-2	~	~	In the FEIS, Sabina commits to incorporating additional results, updated screening criteria, and updated geochemical interpretation into the Borrow Pits and Quarry Management Plan.
369	10	Management Plans	~	~	NRCAN-6	Sabina commits to addressing these considerations in the Mine Waste Rock and Tailings Management Plan. Requested information will be presented in the FEIS.
370	10	Management Plans	NRCan-7	~	~	Underground mine inflows will be sampled during operations to verify water quality predictions and inform storage and treatment requirements, as described in the Site Water Monitoring and Management Plan. Sabina commits to provide further results in the FEIS.
371	10	Management Plans	~	~	NRCAN-12	Sabina commits to justifying the duration of any post-closure monitoring that will be required based on the new Mine Closure Reclamation Plan that will be submitted as part of the FEIS.
372	10	Management Plans	NRCan-20	~	~	Sabina commits to address disposal of effluent treatment sludge in the FEIS Mine Closure and Reclamation Plan. The most likely disposal location would be within the TIA, prior to installation of the closure cover.
373	10	Management Plans	~	~	NRCAN-20	Sabina commits to determining the groundwater flow pathways and including those in the site wide water and load balance. This water and load balance will be used to determine the appropriate water management plans for all the project phases including construction, operation, closure and post closure. This information will be presented in the FEIS.
374	10	Management Plans	~	~	NRCAN-21	Sabina commits to determining the groundwater flow pathways and including those in the site wide water and load balance. This water and load balance will be used to determine the appropriate water management plans for all the project phases including construction, operation, closure and post closure. This information will be presented in the FEIS.
375	10	Management Plans	~	~	NRCAN-25	Sabina commits to providing a detailed site wide water and load balance for the property. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
376	10	Management Plans	~	~	NRCAN-26	Sabina commits to providing a detailed site wide water and load balance for the Project which includes sensitivity analysis as appropriate. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
377	10	Management Plans	~	~	NRCAN-28	Sabina commits to providing a detailed site wide water and load balance for the property. This will be used to develop detailed water management plans for the different phases of the project including construction, operation, closure and post-closure. This information will be presented in the FEIS.
378	10	Management Plans	~	~	NRCAN-31	Sabina commits to providing monitoring plans of TIA water quality and quantity in the Site Water Monitoring and Management Plan. Information will be presented in the FEIS.
379	10	Management Plans	TC-2	~	~	In the FEIS Shipping Management Plan, Sabina will confirm whether all equipment, supplies, fuel etc. will be transported to site directly from domestic locations in Canada. Shipment manifests and routing may be provided for each shipment.
380	10	Management Plans	~	TC-5	~	For the FEIS, Sabina commits to providing the missing appendices from the Volume 10 Oil Pollution Emergency Plan.
381	10	Management Plans	~	TC-9	~	For the FEIS, Sabina commits to renaming "Aviation Audits" (Volume 10, Chapter 3, Section 5.4) to "Surveillance Procedures" as Transport Canada does not conduct aviation audits.
382	10	Management Plans	~	TC-11	~	For the FEIS, Sabina commits to amend Volume 10, Fuel Management Plan Table 4-1, to include the Transportation of Dangerous Goods Regulations.
383	10	Management Plans	~	TC-12	~	For the FEIS, Sabina commits to amend Volume 10, Fuel Management Plan Table 7.3-1, to include the Transportation of Dangerous Goods Regulations.

Commitment #	Volume	EIS Reference	IR REF	CR REF	TC REF	Commitment
384	10	Management Plans	~	TC-13	~	For the FEIS, Sabina commits to amend the Shipping Management Plan, 4.2.3 Explosives and Hazardous Materials, to add the Transportation of Dangerous Goods Act, 1992.
385	10	Management Plans	TC-14	~	~	For the FEIS, Sabina will commit to amending the Explosives Management Plan (Training and Certification Requirements) to include the Transportation of Dangerous Goods Regulations.
386	10	Management Plans	TC-15	~	~	For the FEIS, Sabina commits to detailing steps in the application process for an "Emergency Response Assistance Plan" approval. The Explosives Management Plan will detail how the transportation of explosives will be conducted at all project storage sites.
387	10	Management Plans	TC-16	~	~	For the FEIS, Sabina commits to amending the Spill Contingency Plan (Section 6.1.8) to include (the Transportation of Dangerous Goods Regulations Part 8) 30 day spill reporting requirement.
388	10	Management Plans	TC-17	~	~	For the FEIS, Sabina will commit to indicating whether an Emergency Response Assistance Plan approval is required for the transportation of any of the reagents required by the project.
389	10	Management Plans	YKDFN- 1-2	~	~	Sabina commits to consult with Environment Canada on how monitoring criteria will be further defined in subsequent revisions of the Incineration Management Plan. This will be provided in the FEIS and the ensuing application for a Type A Water License with the NWB.
390	11	Type A Water Licence Application	AANDC-46	~	~	For the FEIS, Sabina will remove the reference to Appendix G (from Vol 11, Appendix 4C, Section 5.9).
391	11	Type A Water Licence Application	EC-12	~	~	For the FEIS and draft water licence application, Sabina commits to providing design information for water management structures. Design criteria will be presented along with an account of how climate change predictions have been considered in the selection of design criteria. Contingency measures will be identified as an intergral part of design.
392	11	Type A Water Licence Application	~	KIA-61	~	In the FEIS, Sabina commits to including additional information on identified quarry sites, with drawings to support regulatory applications presented in Volumes 11 and 12. Estimates on the vertical alignments, the fill requirements for access roads, site roads, and airstrips will be provided along with drawings to support regulatory applications.

Appendix 3: Nunavut Water Board Technical Review Submission regarding Sabina's Draft Environmental Impact Statement

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

NIRB File No.: 12MN036
NWB File No.: 2AM-BRP----

December 18, 2014

Ryan Barry, Executive Director
Nunavut Impact Review Board
P.O. Box 1360 Cambridge Bay
Nunavut, X0B 0C0

RE: ***NIRB File No. 12MN036 – Nunavut Water Board's Technical Review Submission to the Nunavut Impact Review Board regarding Sabina Gold & Silver Corp.'s Back River Project Draft Environmental Impact Statement***

Dear Mr. Barry:

Please find attached, the Nunavut Water Board's (NWB or Board) technical review comments and recommendations relevant to Sabina Gold & Silver Corp.'s (Sabina) Back River Project's Draft Environmental Impact Statement (DEIS). The submission is in response to the Nunavut Impact Review Board's (NIRB) correspondences dated July 31 and August 14, 2014, in which interveners were invited to review and provide submissions regarding the DEIS by September 29, 2014. The NIRB subsequently extended the deadline for submissions to October 10, 2014, in response to a request from Natural Resources Canada (NRCan).

In its review, the NWB placed particular emphasis on aspects of the DEIS aimed at fulfilling the Type-A water licensing requirements including the draft water licence applications, environmental management plans and sections pertaining to water use and waste disposal activities. Comments and/or recommendations have been provided for sections of the DEIS that have relevance to the NWB's mandate.

The NWB is appreciative of this opportunity to comment on the contents of the DEIS at this stage in the coordinated review process. The Board trusts that recommendations provided will assist in preparing the information required for the Type-A water licence application(s) that will accompany the Final Environmental Impact Statement (FEIS).

If you have any comments and or questions regarding the NWB's submission, please contact the undersigned at (867) 360-6338 or at karen.kharatyan@nwb-oen.ca or David Hohnstein, Director Technical Services at (780) 443-4406 or at dts@nwb-oen.ca.

Regards,

Karén Kharatyan
Technical Advisor

Attachment: NWB Technical Review Submission

Nunavut Water Board

Nunavut Water Board's Technical Review Submission

to the

Nunavut Impact Review Board

Pertaining to

Sabina Gold & Silver Corp.'s
Draft Environmental Impact Statement for the proposed
Back River Project

December 18, 2014

Summary English

On January 20, 2014, Sabina Gold & Silver Corporation (Sabina or Proponent) submitted to the Nunavut Impact Review Board (NIRB) a Draft Environmental Impact Statement (DEIS) containing a detailed project description and supporting information for various components and activities associated with the proposed Back River Project, located at approximately 300 km southwest of Cambridge Bay within the Kitikmeot Region of Nunavut. The DEIS is aimed at satisfying the information required under the Project's Guidelines[1] issued by the NIRB. Section 1.4.1 of the Guidelines, identifies the condition under which the NIRB and the Nunavut Water Board (NWB) can coordinate the NIRB review process and the NWB water licensing process in accordance with the *NIRB and NWB Detailed Coordinated Process Framework* (DCPF)[2].

The DCPF allows for the Proponent to include in the DEIS specific information required for either the NIRB process and/or the NWB process. It also provides an opportunity for the proponent to satisfy, where possible, information requirements of both the NIRB and NWB's processes, simultaneously, by submitting the information to the NIRB at the initial stage(s) of the process. In addition, it provides directions to the NIRB and NWB concerning the approach that can be taken when conducting a joint review of a DEIS.

The NIRB distributed the DEIS to interested parties including the NWB for completeness check then for a full technical review and comments on July 31, 2014. The NWB has reviewed the sections of the DEIS and relevant addendums and has provided comments specifically on items in volumes 10, 11 and 12. Particular emphasis was placed on the concordance table associated with the draft Type-"A" Water Licence Applications, environmental management plans, and studies, reports, and research related to water use and waste deposit activities. Comments and recommendations are organized sequentially by volume number, except where they apply to more than one volumes/sections of the DEIS. In such cases, the comments and/or recommendations are listed under the general comments section. The following is a summary of general items identified during the review:

- Lack of and/or insufficient information included in some sections of the water licence applications and/or over- reliance on information contained in other sections of the DEIS to satisfy information requirements that could be easily included on the application.
- Inconsistency in the scope of activities covered under some of the Environmental Management Plans and concerns surrounding functionality of some Plans.
- Duplication of information contained in some EMPs.

[1] Guidelines for the Preparation of an Environmental Impact Statement for Sabina Gold & Silver Corp's Back River Project (NIRB File No. 12MN036), April 2013.
[2] Nunavut Impact Review Board (NIRB) and Nunavut Water Board (NWB) Detailed Coordinated Process Framework for NIRB Part 5 Review and NWB Licensing, September 2009.

- EMPs are mostly preliminary and conceptual in form and need to be updated to satisfy the NWB licence application requirements.
- Monitoring plans and sampling procedures are very conceptual and limited.
- Design drawings are preliminary and not generally stamped by an Engineer and would not necessarily satisfy NWB licence application requirements.

For the sections of the DEIS identified as lacking or containing insufficient information, recommendations have been provided concerning the information that should be included in the revision of the appropriate sections of the FEIS. Recommendations have also been made with respect to the extent to which the scope of some plans should be expanded, as well as ways to consolidate and streamline management plans so as to increase functionality and reduce redundancies. It is believed that the comments and recommendations provided will assist in many ways in preparing the Type "A" Water Licence Application(s) that will accompany the Final Environmental Impact Statement (FEIS).

Summary Inuktitut

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Table of Contents

Summary English i

Summary Inuktitut iii

Introduction 2

1.0 General Comments 4

2.0 Draft Type "A" Water Licence Applications – Mine Sites and Access 5

3.0 Back River Project Description 7

4.0 Baseline Information 8

Environmental Setting 8

5.0 Appendices V11-1A and V12-1A: SIG Concordance 8

5.1 Water Licence Application Form Information Requirement 9

5.2 Baseline Information Requirements 9

5.3 Water Use Information Requirements 9

5.4 Waste Disposal Information Requirements 10

5.5 Monitoring Information Requirements 11

6.0 Appendix V11-4A: Geochemical Characterization and ML/ARD Potential Report 11

7.0 Appendix V11-4C: Waste and Water Management Report for Draft Environmental Impact Statement 11

8.0 Appendix V11-4D: Goose Property Water Quality Prediction Report 12

9.0 Volume 10: Management Plans 13

9.1 Water Management 13

9.2 Waste Management 16

9.2.1 Solid Waste 16

9.2.2 Hazardous Waste 16

9.2.3 Ore, Mine Waste Rock and Tailings 17

9.2.4 Waste Rock and Tailings 17

9.2.5 Metal Leaching & Acid Rock Drainage 19

9.2.6 Road, Borrow Pits and Quarries 19

9.2.7 Emergency Response and Spill Contingency 20

10.0 Monitoring 24

11.0 Closure and Reclamation 25

12.0 Project Designs and Drawings 26

13.0 Additional Environmental Management Plans to Consider 26

14.0 Type "B" Application for the Back River Project Pre-development Activities 27

15.0 List of Acronyms 28

Introduction

On February 11, 2014 the Nunavut Impact Review Board (NIRB or Board) initiated the public technical review period for the Draft Environmental Impact Statement (DEIS) submitted by Sabina Gold & Silver Corporation (Sabina or the Proponent) for the Back River Project proposal received on January 20, 2014. Following the receipt of Sabina's response to initial Information Requests (IR) received from parties, on July 31, 2014 the NIRB invited interested parties to provide the Board with their technical review comments regarding the DEIS for the Back River Project by September 29, 2014. This deadline was later extended to October 10, 2014 at the request of Natural Resources Canada (NRCan).

The Back River Project (the Project) is a proposed gold mine project to be undertaken within the West Kitikmeot Region of Nunavut. The Project, which is owned by Sabina Gold & Silver Corp. (Sabina), is composed of three main areas with interconnecting winter roads: the Goose Property, the George Property, and the Marine Laydown Area (MLA) situated along the eastern shore of southern Bathurst Inlet.

The Project involves the construction, operation, closure and reclamation, and post-closure monitoring of open pits and underground gold mine, with a total ore production of 15-20 million tonnes to be processed at the single mill at the Goose property. The Project shall include several mineral targets to be mined through Umwelt, Llama and Main open pits and Umwelt underground mine at Goose Property and Lone Cow Pond North (LCP North), Locale 1, and Locale 2 open pits at George Property. Annual resupply will be completed using the MLA, located in Bathurst Inlet, and winter ice roads will be utilized to interconnect these sites.
The entire lifespan of the proposed project, from construction to reclamation and post-closure monitoring of the mine, is estimated at twenty-nine (29) years.

In its request for submissions, the NIRB indicated that Sabina had requested a joint review for the project proposal in accordance with the *NIRB and NWB Detailed Coordinated Process Framework* (DCPF), and the NIRB and NWB have agreed to coordinate their review processes to the extent possible. The DCPF allows the Proponent to include in the DEIS specific information required for either the NIRB process or the NWB process. It also provides an opportunity for the proponent to satisfy, where possible, information requirements of both the NIRB and NWB review processes, simultaneously, by submitting the information to the NIRB at the initial stage(s) of the process. In addition, it provides directions to the NIRB and NWB concerning the approach that can be taken when conducting a joint review of any DEIS.

The information provided in the DEIS associated with the water licensing process can be found within several volumes of the DEIS; however, the draft Type "A" Water Licence Applications

within Supplemental Information Guidelines (SIG) requirement tables and associated information are contained within Volumes 11 and 12 of the DEIS. The Environmental Management Plans (EMPs) are included within the Volume 10 of the DEIS.

Although the NWB has reviewed all 12 Volumes of the DEIS to varying extent, the NWB recognizes that additional information submitted by Sabina since the submission of the DEIS and the commitments made during the NIRB technical meeting capture generally the NWB questions and comments related to the Project areas' general environmental and socio/economic description and methodologies used for project study and description contained in the Volumes 1-9 of the DEIS.

Given the fact that the NWB's general mandate is the management of fresh-water through the regulation of water use and waste deposit activities, the NWB has reviewed thoroughly the relevant sections of the DEIS and more specifically the Volumes 10-12, and compiled below a list of comments and/or recommendations arranged sequentially by volume and sectors, in order to assist Sabina in the preparation of a complete final Type "A" Water Licence Application package(s) within the Final Environmental Impact Statement.

Comments and/or recommendations that apply to more than one Volume are listed under the general comments section.

1.0 General Comments

a. Minimum set-back distance above the ordinary high water mark of freshwater bodies for situating proposed project infrastructure is being listed as thirty (30) metres instead of thirty-one (31) metres in some of the plans and sections of the DEIS. It is recommended that the set-back distance in all plans and relevant sections of the DEIS be revised to thirty-one (31) metres, except in cases where authorized to allow for consistency with that of Indian and Northern Affairs Canada's (INAC or AANDC) Land Use guidelines and the NWB general licensing conditions.

b. Where applicable, some of the Environmental Management Plans (EMPs or Plans) should be streamlined so as to reduce redundancies and increase the fluidity and ability for reviewers to easily locate appropriate information when required.

c. Some Plans rely solely or excessively on information contained in related Plans that should have been included in the particular Plans. To ensure that the reviewers and users of those plans are able to access the information as readily as possible, it is recommended that attempts be made to decrease referencing or excessive reliance on related Plans for information that should and could be easily included in a particular plan. ‘

d. General Monitoring requirements are discussed in a limited way in the DEIS. It is recommended that a comprehensive, stand-alone monitoring plan be submitted with the FEIS to address monitoring requirements specific to water use and waste disposal activities. Further, it is recommended that the Quality Assurance and Quality Control Plans (QA/QC) also be provided for addressing both field sampling and laboratory analyses procedures.

e. EMPs contain management and monitoring strategies provided for different phases of the project (construction, operation, closure and post-closure). However, it is often difficult to clearly differentiate which phase(s) of the project that the information in the management plans are addressing. Management and monitoring strategies during the mine care and maintenance are minimally discussed in EMPs. It is recommended that the strategies and management plan clearly identify the phase(s) that they are addressing.

f. It is indicated that 5 years for Post-Closure Monitoring will be needed. Based on outcomes related to northern mines currently undergoing reclamation and post-closure monitoring (Nanisivik, Polaris) phases, the lifespan for Post-Closure Monitoring could be longer than 5 years; as such, it is recommended that contingencies be included to allow for an extended period of post-closure monitoring, if necessary, to achieve complete stability of project sites.

g. No studies have been provided detailing the water quality of lakes that will be used to support the construction and maintenance of the winter road corridor (i.e. Lakes A –

Lakes O; Bathurst Inlet to Goose and George Properties. It is recommended that this information be included in the FEIS.

h. It is stated that *a third 220-km-long winter road, connecting the Project to the Tibbitt to Contwoyto Winter Road is under consideration.* Based on the information provided by Sabina during DEIS Technical Meeting (TM), this winter road is no longer under consideration and should therefore not be included in the FEIS.

2.0 Draft Type "A" Water Licence Applications – Mine Sites and Access

The Cover Letter accompanying the draft Water Licence Applications stated that the *NIRB review process is considering all components and activities of the Back River Project under file NIRB No. 12MN036; however, for permitting, Sabina is applying for two Type "A" water licences:*

- ***Back River Project - Mine Sites Type "A" Water Licence Application**, which includes mine site development and operation at the Goose and George Properties; and*
- ***Back River Project - Access Type "A" Water Licence Application**, which includes the Marine Laydown Area and the winter road corridors.*

Volumes 11 and 12 and respective Appendices V11-1A to V11-9 and V12-1A to V12-2J, and associated documents of the DEIS were reviewed for completeness and consistency with the NWB Guide 4[5]. The review determined that the following items should be addressed:

Water Licence Application Form - Mine Site

a. **Block #4 (Location of Undertaking)**

Based on information provided in this section of the application, Project components such as the George Camp and the George Connecting Road Junction are outside the provided 'Project Extents'.

The coordinates provided in the water licence application places the George Camp in the Back Watershed, Upper Back Sub-watershed (WMA 31), which is trans-boundary with the North West Territories. The maps in the DEIS place the George Camp in the Queen Maud Gulf Watershed, Bathurst Inlet–Burnside Sub-watershed (WMA-30).

The project coordinates provided on the water application (Mine Sites) do not match the spatial distribution provided on maps in the DEIS, specifically:

It is recommended that confirmation of the above-mentioned project extents as well as that of the George Property and Camp coordinates be provided in the FEIS.

b. **Block #5 (Maps)**

To address the requirement in this section, NTS Map Sheets No: 76G (Beechey Lake) and 76J (Tinney Hills), referenced respectively, were provided to a scale other than that

[5] Guide 4, Completing and Submitting a Water Licence Application for a New Licence, April 2010

specified by NWB in Guide 4, 1:50,000. The NWB has noticed that some of the maps are of appropriate scales in the Project. It is recommended that appropriately scaled maps be provided within Water Licence Application(s) / referenced to satisfy the requirement of Guide 4.

c. **Block #13 (Quantity and Quality of Water Involved)**
Information contained in this section of the form states that 70 m^3 of water per day will be used for Industrial (miscellaneous) purposes at both of Goose and George Properties. The water use required should be re-assessed and confirmed, taking into consideration of all potential miscellaneous uses including dust suppression and machinery washing at sites as water use for Industrial (miscellaneous) purposes of Meadowbank Gold Mine is much higher.

d. **Block #13 (Quantity and Quality of Water Involved)**
The information provided in this section of the form indicates that Goose and Propeller Lakes will serve as sources for Industrial (miscellaneous) and Industrial (mill) use, respectively, at Goose Property; and George and Fold Lakes as sources for Domestic and Industrial (miscellaneous) use at George Property. However, the anticipated quantities of water to be used from each source are not provided. It is recommended that the table should include details on quantities of water required from each source.

Water Licence Application Form - Access

e. **Block #13 (Quantity and Quality of Water Involved)**
Details contained in the application indicates that 20 m^3 of water per day will be used for Industrial purposes at MLA. The water use amount should be re-assessed and confirmed taking into consideration all potential miscellaneous uses including dust suppression and machinery washing at MLA.

f. **Block #13 (Quantity and Quality of Water Involved)**
Information contained in the application indicates that 21 Potential Fresh Water Sources will be used to supply up to 121,500 m^3 of water annually for the construction and maintenance of winter roads. However, anticipated quantities of water to be used from each water source are not provided. It is recommended that water quantity information for each water source be provided.

Water Licence Application Form – Mine Site and Access

g. **Block #21 (Security Information)**
This block requires that an estimate of the total financial cost for final reclamation be provided. The conceptual Closure and Reclamation Plan DEIS Volume 10 Chapter 29 is referenced as containing the required information. However, the conceptual Closure and Reclamation Plan does not provide the reclamation cost estimate. It is recommended that this information be included in the FEIS. Further, the most recent version of the RECLAIM model should be used to assess the reclamation cost.

h. **Block #23 (Studies Undertaken to Date)**

In response to this item, it is stated that comprehensive baseline studies have been initiated at the Project and that results from this ongoing work will be presented in baseline reports and used in ongoing feasibility studies. It is recommended that a list of studies relevant to the application be included on the application form in addition to appropriate referencing to the FEIS.

i. **Miscellaneous Items**

As required by the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Nunavut Waters Regulations* (Regulations), a complete application shall include subsection 12(7) (b) of the Regulations.

To calculate fees for the project, Aboriginal Affairs and Northern Development Canada (AANDC), Land and Water Management, NCR, Water Use Fee Calculator, (Ver. 1.4) shall be used.

3.0 Back River Project Description

The information in this section appears to be mostly complete. In certain sections of the DEIS, there were few or no details with respect to the locations of receiving water bodies and drainage pathways (i.e. for landfills, details in the DEIS are limited to the following "*Drainage pathways from the landfills will be sampled and monitored in conformance with Water Licence requirements*). Mitigation measures are noted throughout the document that concern drainage pathways (e.g. "*prevent oil from reaching natural drainage paths leading to the ocean*"), but their locations are not specified.

a. Section 4.2.a, Pg. 4-10, Raw Water Intake, should provide water intake design information. V.10-7, Site Water Monitoring and Management Plan (SWMMP), should be updated to include water intake, and generally all water infrastructures design details.
b. Section 4.2.b, Pg.4-11, Water Storage and Treatment, should indicate the Propeller and Lower Long Lake supplemental water sources to be used.
c. Section 4.2.d, Pg. 4-11, Location of Proposed Receiving Waterways, states *it has been assumed that Goose Property would operate as "zero-discharge."* Mitigation measures should be provided should discharge be required during mine operation. V.10-7 SWMMP should include these contingency measures.
   Further: *It has been assumed that George Property also would operate as "zero-discharge." However, a*ccording to Volume 10-7 SWMMP" *treated sewage effluent will be land discharged at a location south of the Locale 2 Waste Rock Storage Area (WRSA) as shown on Figure 3.2-2. The effluent will ultimately report to the stream downstream of Sleigh Lake and upstream of Esker Pond"*. This should be clarified.
d. Section 4.2.h, Pg. 4-13, Sewage Treatment Facilities and Discharge, states that "*for the Operation phase, the sewage treatment plant will be decommissioned and raw sewage will be pumped to the Tailings Impoundment Area (TIA) (zero discharge facility)*". As per AANDC request, Sabina clarified that sewage will be treated before being pumped to TIA. This should be made clear in future submission.

e. Section 4.2.i.2, Pg. 4-14, Oily Water Treatment Methods, states that *"during construction the excess water will be released to the receiving environment. During operation, these discharges will be routed to the Tailing Impoundment Area"*.
It should be indicated the mean and frequency of excess water being routed to TIA from George Site.
The NWB acknowledges that Sabina committed to providing more details in the FEIS on the waste water management strategy including sewage effluent discharges. This will include discharge locations and the characteristics of those locations as well as impacts on the receiving environment, attenuation capacity, end of pipe locations, seasonal considerations, alternatives, and design or engineering contingencies.

f. Section 4.2.1, Pg. 4-15, Landfills and Landfarms, states that *"non-combustible non-hazardous materials will be at the Goose Property landfill"*. According to Figure 4.1-2, Project Development Area and Infrastructure Areas – George Property *"a landfill will be operating at George Site as well"*. According to Volume 10-7, Site Water Monitoring and Management Plan, Section 3.4.5, *"Landfills will be constructed and operated at each of the Project properties"*.
Inconsistencies with respect to future landfills and their potential locations should be addressed in the FEIS.

4.0 Baseline Information

Environmental Setting

The information in this section appears to be mostly complete, although it was not entirely provided in the locations referenced in the SIG. Two potential incomplete areas include the following:

a. The history of the property development, including current status maps of the project properties would be helpful; and
b. The data source for local watersheds is not provided in the DEIS (e.g. Big Watershed, Swan Watershed, Moby Watershed). Details should be provided on whether these boundaries were delineated by Consultants or are the official boundaries determined by an appropriate agency (e.g. Water Survey of Canada).

5.0 Appendices V11-1A and V12-1A: SIG Concordance

The review of the information contained in the SIG Concordance Table accompanying the water licence applications has determined that the referencing to the DEIS provided are mostly valid. There appears to be sufficient information in most areas; however, the references provided were for entire volumes (i.e. Volume 1 to Volume 12 and Volume 10-1.0 to 10-29). It is recommended that more specific references and examples be provided in the FEIS.

There are some instances, however, where no referencing is provided because the information was apparently not available for inclusion during the draft of the DEIS. In order to ensure that the information related to the water licence application is consistent and readily accessible for

consideration during the next stage of the review process, it is recommended that the Concordance Table be updated accordingly in the FEIS.

The SIG Concordance Table indicates that the following information will be provided in the FEIS:

5.1 Water Licence Application Form Information Requirement

a. Section 3.16: Timetable for filing the appropriate plans and procedures required by other authorities. Description of how those authorizations may affect the NWB's water licensing process.
b. Section 3.19: Inuit water Rights: Compensation agreements or status.
c. Section 3.20: Results of Consultations: A Consultation List is provided in Appendix V3-2A that details various meetings with government agencies that may be of concern to the NWB (e.g. DFO consultations); however, the outcomes/results of those consultation sessions is not provided (e.g. no action items, track-record of issues raised, etc.).
d. Section 3.21, Security: Financial security assessment that is prepared in a manner consistent with principles respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002.
e. Section 3.26, Annual Reporting: Detailed information regarding the content of annual reports and a proposed outline or template of the annual report.

5.2 Baseline Information Requirements

a. Section 5.1, Environmental Setting: Description of streambed material, stream-bank material, and stream-bank vegetation for any streams affected by the application;
The slope of the banks of any water course and the description of the meander pattern for any channel affected by the application;

5.3 Water Use Information Requirements

a. Section 6.2a, Water Use: Quality and Quantity, Water Intake: Description of the water intake method(s) including the intake facility, the operating capacity of the pump used, the details of any screening to exclude fish, and the distance the pump will be placed from the ordinary high water mark.
   - Description of the general condition of any existing water intake facility; water withdrawal regime; amount of water returned to the source.
   - Description of any hydrostatic testing programs, including water sources of the watercourse.

b. Section 6.2b Water Storage: Plan showing representative cross-sections of the reservoir.
Most of Water Storage information regarding the Access Type "A" Licence Application.
c. Section 6.2d Water Crossings: Plan of any watercourse crossing showing cross section and elevations.

d. Section 6.2h Alterations in flow: If alteration involves a dam, a plan showing the length, height, cross section and elevations of the dam and the location and preliminary designs of spillways, canals, sluice pipes, and any other outlet work.
e. Section 6.2k Modifications: Whether any changes are planned for the water intake.
f. Section 6.2l Proposed Water Works.
g. Section 6.3, Predicted Environmental Effects and Proposed Mitigation Measures: If the cross-section of any watercourse is changed, a description of the change and its effect on the flow capacity of the channel.
If the course of any channel is changed a description of measures to maintain stream bed and bank stability.
h. Section 6.4 Studies: Construction plan and construction schedule for water works;
Implementation schedule for construction of works.
Construction quality assurance and quality control plans regarding the Access Type "A" Licence Application.

5.4 Waste Disposal Information Requirements

a. Section 7.2b Modifications: Whether any changes are planned for the wastewater, solid waste, or any other waste facilities
b. Section 7.2c, Proposed Waste Facilities.
c. Section 7.3, Predicted Environmental Effects and Proposed Mitigation Measures: Detailed treatment plans for discharges from any tailings containment area, attenuation pond, reclaim pond, sewage disposal area, sumps or dewatered area; description of the sub-surface soil compositions and provide information on groundwater elevations for the project area. The proximity between the proposed waste disposal system and the groundwater elevation;
Discussion of the consequences of long-term stratification in any pit lakes and associated contingency plans;
d. Section 7.3a, Operations and Maintenance: Stand-alone Operations and Maintenance Manual for sewage and/or solid waste disposal facilities in accordance with the "Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996" as well as the "Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories, 2003".
e. Section 7.3c, Emergency Response and Spill Contingency: Designs for the fuel tank farm facilities including a description of the nearest water bodies. An evaluation of impacts and mitigation measures in case of a fuel spill.
Explanation of how the applicant will ensure project contractors meet the applicant's due diligence standards with respect to oil and hazardous material spill prevention, preparedness, response, and restoration.
f. Section 7.4 Studies: Inspection plan;
Geotechnical and structural monitoring;
Human health and ecological risk assessment for establishment of remediation objectives for closure;
Construction plan and construction schedule for waste management infrastructure;
Implementation schedule for construction works, submission of studies and mitigation plans for operations regarding the Access Type "A" Licence Application;

5.5 Monitoring Information Requirements

a. Section 8.1 Monitoring Plan.
b. Section 8.1a Inspection Plan: Inspection Plan including a description of the methods, procedures, standards, and schedules proposed. Inspections may be required for engineered facilities related to the management of water and waste as well as spills. The Inspection Plan must consider the life of the project, temporary closure and permanent closure.
c. Section 8.1b QA/QC Plan: Quality Assurance/ Quality Control (QA/QC) Plan that addresses both field sampling and laboratory analyses.

6.0 Appendix V11-4A: Geochemical Characterization and ML/ARD Potential Report

a. Sections 3.2.1.2 and 3.2.1.3, Pg. 3-7, it is stated that no overburden samples have been collected from the George Property and MLA, respectively, for the geochemical characterization. Samplings are to occur.
b. Sections 3.2.2.2 and 3.2.2.3, Pg. 3-8, it is stated that no proposed quarries have been sampled at the George Property and MLA, respectively, for the geochemical characterization. Samplings will occur as the characterization program progresses and quarries are identified.
c. Mine Workings and Waste Rock Section 4.3.2.1, Pg. 4-36, Mineralogy states that R-XRD (X-ray diffraction) analyses were completed on George Property in the fall 2013. No results available yet.
d. Mine Workings and Waste Rock Section 4.3.2.2, Pg. 4-44, Leachate states that leachate tests were completed on George Property in the fall of 2013. No results available.
e. Ore and Low Grade Ore Section 4.4.2.2, Pg. 4-49, states that to date no SFEs (Shake flask extraction leachate test) have been performed on George Property samples.

7.0 Appendix V11-4C: Waste and Water Management Report for Draft Environmental Impact Statement

a. Tailings Impoundment Area, Table 3-1 Design Basis Summary indicates 49% solids of tailings from mill process as TIA design criteria. Contingency measures should be provided in the case if tailing slurry density is to be changed as in the beginning of another northern project, Meadowbank Gold Mine operation with close design criteria (51% solids) pipe sanding issue occurred in winter. With less percentage of solids content additional water use may be required.
b. Knight Piésold (KP) Appendix D VA13-01716 – Groundwater Mine Inflows Memorandum, Pg. 6, it is stated that *groundwater inflows up to about 10 L/s are expected to be encountered as a result of structures such as faults.* It is also suggested that *based on professional experience and information in the literature (Freeze and Cherry 1979), higher inflows as a result of the mine working intersecting a permeable fault would likely decrease relatively quickly with time.* The "decrease relatively

quickly" should be quantitatively assessed to plan for the management of "short-term" higher inflows.

8.0 Appendix V11-4D: Goose Property Water Quality Prediction Report

a. Goose Property Water Quality Model Section 3.11, Pg. 3-20, Process Plant Discharge indicates that *the tailings production rate will be 5,000 tpd, piped out to the TIA as slurry comprising 65% solids*. However, throughout the DEIS documents the tailing slurry density is stated as 49% solids.
b. As stated also in Appendix 3A KP Consulting Water Balance Memo the base water balance model *does not include downstream compliance points, which may be necessary for the EIS*.
c. Appendix 3C KP Consulting 2013 Groundwater Mine Inflow Estimates indicates that analysis for Feasibility level design purposes would be improved *by incorporation of advancements to the structural model being developed by Sabina for the Goose and George Properties, specifically with respect to the mine development, to improve the identification and characteristics of potential structures which may contribute to higher inflows during mine development*. The NWB concurs with this conclusion.

9.0 Volume 10: Management Plans

9.1 Water Management

Volume 10-7 Site Water Monitoring and Management Plan (SWMMP or Plan) outlines Sabina's strategies for managing water at the Back River Project. The Plan will likely be revised for the FEIS. The Plan shall at a minimum include the followings additional information:

a. Section 3.2.2, Pg. 4, Estimated Water Consumption, Table 3.2-1 provide Water Supply Locations and Volumes by Project Phases. However, does not provide a breakdown for Goose Lake and Propeller and other lakes, and for George Lake and Lower Long Lake and other lakes. The updated Plan shall provide these estimations.

b. Section 3.2.3, Pg. 4, Winter Road should provide water supply locations for the winter roads preparation with respective anticipated consumption from each water source.

c. Section 3.3.2, Pg. 9, Goose Property Sewage Treatment and Disposal should provide the treated sewage discharge on land location details before the TIA's construction and after its decommissioning in the Goose Property.

d. Section 3.4.3, Pg. 13, states that there is the requirement for a thirty (30) metre set-back from water-bodies for treated oily water discharge on land. It is recommended that the set-back distance be changed to thirty-one (31) metres so as to be consistent with NWB general licensing conditions.

e. Section 3.4, Pg. 12-14, Water Management – General Site Runoff, Tables 3.4-1, 3.4-3, 3.4-4, 3.4-5 and 3.4-6 proposes Water Discharge and Quality Criteria.
The updated Plan should indicate what respective Guidelines are being used for the proposed Criteria. Discharged water quantities and qualities should be estimated at all Project sites (i.e. waste rock contact water, treated sewage, collection ponds, fuel containments, on-land discharges etc.), and anticipated discharge locations should be provided.

f. Section 3.4.2, Pg. 12, Soil Landfarms should provide details on landfarm designs and management or reference the document providing this information.
The NWB recommends including a Landfarm Management Plan within the FEIS.

g. Section 3.4.4, Pg. 13, Quarries and Borrow Areas states that *"runoff will be collected within the work area and will only be discharged to land if meeting the water quality criteria in Table 3.4-5"*.
Details on runoff containment should be provided.

h. Section 3.4.5, Pg. 14, Landfills states *"Landfills will be constructed and operated at each of the Project properties"* and provides landfill seepage criteria for MLA, Goose and George Sites landfills without providing details on landfills designs and management or reference the document providing this information.
The NWB acknowledges that the Landfill and Waste Management Plan is also conceptual and does not provide at this stage landfills design details. Besides that, according to the Volume 11, Section 4.2.1, Pg. 4-15, Landfills and Landfarms, "*non-combustible non-hazardous materials will be at the Goose Property landfill*". This should be clarified.

i. Section 3.5.2, Pg. 15, Water Intakes should provide location, depth and design details on all water intakes for every water sources (Goose Lake, George Lake) including the one on Bathurst Bay for the Marine Laydown Area (MLA) water supply.

j. Section 3.5.5, Pg. 16, Water Supplementation Pipeline from Propeller to Goose Lake states that "the Project includes the construction of a pump house and pipeline to potentially supplement the water demand of the milling operation from Propeller Lake, and to support active pit filling during closure"
Designs details on pump-house and pipeline should be included within the updated Plan.

k. Section 3.6.2, Pg. 17, Site Water Balances states that "the contact water will be stored in collection ponds prior to treatment at the water treatment plants to regulate inflows".
The future updated Plan should provide contact water treatment details, design and management of collection ponds at George Property.

l. Section 3.6.3, Pg. 23, Open Pits should also provide the extent of Llama Lake talik zone and assess project impacts on the Llama Lake talik zone through all phases of mining activities and closure.

m. Section 3.6.4, Pg. 24, Umwelt Underground Mine states that "the Umwelt underground development is planned to a depth of approximately 660 m below ground surface (mbgs). At this depth, the planned workings will be approximately 260 m below the permafrost". Although it is stated that "average groundwater inflows have been estimated at between 1 and 2 L/s (Knight Piésold, 2013b)."
Groundwater and potential saline water inflow estimation should be re-assessed as well as details on management and monitoring of saline inflows throughout the Project development should be detailed in the updated Plan.

n. Section 3.7.3, Pg. 26, Waste Rock Stockpiles states that "at the Goose Property, runoff from the WRSAs will be collected in the operation phase".
The management of runoff from the Waste Rock Storage Areas (WRSA's) at George Site during operations should also be clarified.

It is also stated that "at closure, Potentially Acid Generating (PAG) waste rock stockpiles will be covered with a 4m cap of not PAG (nPAG) waste rock to promote the aggregation of permafrost in the piles so that the PAG rock remains permanently frozen". Figure 3.7-1 indicates 2m nPAG Cover for TIA. The rational should be provided on why 4m nPAG covering cap is planned for WRSA and 2m nPAG cap for TIA.

o. It is not clear whether the underground mine inflow is included within the site water balance model (it seems no). A Water Balance shall also include annual estimates for each lake, water volume change, volume remaining and water level throughout the Project multi-phased development.

p. Monitoring details for each of Project sites should be included with an explanation on how this level of monitoring will be effective.

q. Water treatment options for each of Project sites should be included with treatment details for potential contaminants.

r. According to V. 2 Project Description, Section 6.4.12 "*as part of the Site Water Monitoring and Management Plan, a drainage plan has been developed for the Marine Laydown Area"*.
This drainage plan for MLA wasn't found within SWMMP. A drainage Plan for MLA should be included within the Plan.

s. The Plan provides just preliminary information regarding the Groundwater.
The NWB has acknowledged that Sabina committed to detail the management of groundwater for each phase of mine activities. The extent and potential formation/decline of taliks, including potential through-taliks, anticipated groundwater and saline water inflows and pathways estimations including through fault zones, effects on being re-flooded open pits water quality and quantity and other aspects of groundwater shall be detailed.
The NWB also acknowledged that Sabina committed to provide results of any groundwater modelling completed for Llama pit.

t. The Plan should detail water management (including groundwater) for different phases of the project including construction, operation, closure and post-closure. A water management strategy for care and maintenance phase should also be developed.

u. Lake Dewatering and Pit Re-flooding Plans shall be included within the SWMMP.

v. Design criteria and drawings for all water management infrastructures (pump-house, intake, retention dikes, diversion ditches, run-off management, water crossings and works, and seepage and groundwater inflow collection structures and ponds) should be provided within the final Application.

9.2 Waste Management

9.2.1 Solid Waste

Inconsistencies noted with respect to the potential construction of landfill in George Property and MLA. According to Volume 11 Section 2 Minimum Application Requirements and Section 4 Back River Project Description landfilling is planned at Goose Property only. However, throughout the DEIS documents and figures landfills construction/operation is likely planned in George Site and MLA as well. These inconsistencies should be addressed.

Although the ***Volume 10-10 Landfill and Waste Management Plan*** (LWMP or Plan) is conceptual at this stage, the NWB has reviewed it and identified the following additional items, which should be addressed at a minimum within the updated Plan that shall likely accompany the FEIS.

a. Waste management strategies and plans shall be elaborated with respect to each phase of mining: construction, operation, closure and post-closure.
b. Waste management recycling/reusing initiatives, operating procedures at the mine shall be developed in detail with respect to each phase of mining: construction, operation, closure and post-closure.
c. Estimated volume and types of waste generated during each phase of mine activities should be provided.
d. Landfill design and management details should be provided. Expected changes to landfills operations and maintenance during each phase of mine should be described.
e. Details on water potential run-off structures or measures and run-off management should be provided.
f. Details on environmental monitoring during each phases of mine activities should be provided.

9.2.2 Hazardous Waste

Volume 10-12 Hazardous Materials Management Plan (HMMP or Plan) is conceptual and shall be updated for the FEIS. The following additional information shall be provided at a minimum within the next version of the Plan:

a. Hazardous materials anticipated quantities and inventory list with types, anticipated quantities, and sources of generation and description for each phases of mine activities.
b. Details on environmental protection measures to be implemented to ensure Hazardous substances efficient and environmentally compliant collection, storage, transportation and disposal.
c. Details on collection and temporary storage sites within the George and Goose Properties and main storage facility at the Marine Laydown Area. Details on types and estimated numbers of containers that will be on-site throughout the project development.
d. Details on Hazardous materials transportation from temporary storage sites to the main storage facility at the Marine Laydown Area.

e. Spill response considerations, procedures and reporting for all Hazardous substances applicable to each mine phase. Spill kits/emergency response equipment quantities and types, and available on-site locations.
f. Temporary storage and main storage facilities design and management details. Expected changes to facilities operations and maintenance during each phases of mine.
g. Map of appropriate scale with Hazardous materials storage facilities, and spill kits location, at a minimum.
h. Details on potential run-off water structures or measures and run-off management.
i. Details on employees training requirements and programs.
j. Details on associated Monitoring programs.
k. Details on internal/external inspections and audits.
l. Design details (drawings) are to be included.

9.2.3 Ore, Mine Waste Rock and Tailings

The ***Volume 10-8 Ore Storage Management Plan*** (OSMP or Plan) is designed to cover operational procedures, the implementation of environmental protection measures, and monitoring the effectiveness of any mitigation strategies when managing stockpiles ore. The next update of the Plan should include, at a minimum the followings:

a. Section 3.3, Pg. 6, Production Overview indicates that "*the size of the stockpile at the George Site will vary between 80 and 430 kt*", and the Section 3.5, Pg. 7, George Site Ore Stockpile Methods and Procedures state that for George Pits "*storage design requirement for the pit is approximately 500 kt*".
The NWB believes that those inconsistencies would be eliminated with design details.
b. Section 6.1, Pg. 8, Runoff Management states that "*the collection ponds constructed for the ore stockpiles will apply the same design criteria as has been developed for the WSRAs, in terms of managing extreme flows*".
The next version of Plan should provide run-off management infrastructures' (ditches and ponds) details including design criteria.
c. Section 7, Pg. 9, Monitoring Program should be detailed to include also inspection/monitoring frequency and phased monitoring requirements (i.e. Operations, Temporary Closure or Care and Maintenance, Post-closure).
d. Design details (stockpile design, foundation requirements and runoff management etc.).

9.2.4 Waste Rock and Tailings

The ***Volume 10–9 Mine Waste Rock and Tailing Management Plan*** (MWRTMP or Plan) applies to the construction and operation phases of the Project during which time both waste rock and tailings will be produced, as well as the closure/post-closure phases of the Project while waste rock and tailings will be permanently stored at the site. The Plan is more or less conceptual and, as such, it includes in some cases more than one proposed or alternative options for addressing components like Waste Rock Disposal and Management Alternatives, or runoff water management. Once details become available, more definite options should be presented.

The SIG requirement to "*provide an assessment of alternatives for any proposed tailings containment facility*" was acknowledged as not applicable by the proponent. A very brief discussion of a management alternative is provided in *Mine Waste Rock and Tailing Management Plan* (Section 3.2.9), but there is a potential need for a more elaborate discussion of how the proposed Tailings Impoundment Area (TIA) site was selected.

a. Inconsistencies on numbers of total Waste Rock volumes that will be produced over the life-of mine in Waste Rock and Tailings Management, Pg. iv, and throughout the Plan.
b. Section 3.1.3, Pg. 3, Waste Rock Stockpile Areas states that "*waste rock generated by the Project will be contained in Waste Rock Stockpile Areas (WRSAs) located near to the open pits"*.
   Other that stating that "*each of the WRSAs has separate PAG and nPAG piles that will share a common water management system"* there is insufficient information pertaining to the associated drainage areas or water management systems.
c. Section 3.1.7, Pg. 9, Waste Rock Thermal Modeling states that "*strategy of incorporating the PAG waste into the permafrost was developed based on computed depths of freeze and thaw"*.
d. Provided estimates should be refined with available data. It should be clarified whether or not this thermal modeling would be applicable to TIA as well.
e. Sections 3.1.8, Pg. 9, Waste Rock Management Alternatives shall detail all management alternatives with rationale on selected option.
f. Section 3.2.1, Pg. 9, Tailings Physical Characteristics suggests 49% for Slurry Percent Solids.
g. How those properties were determined? Whether or not other northern mining experiences (i.e. Meadowbank Mine) were taken into account for the determination of Tailings Slurry density?
h. Section 3.2.3, Pg. 10, TIA Design Basis will take into account 16,3Mt of Total Ore milled as a Design Criteria. It is also stated that "*should additional mineral resources be identified for mining and processing, additional raises to the TIA embankment will be necessary and should be possible"*.
i. The TIA Design Criteria should assess additional possible raises to the TIA embankment for potential additional Ore. The TIA Design Criteria should also take into account that more freshwater than projected may be used (i.e. as a result of slurry density change etc.) that will increase the amount of waste water to be discharged into TIA.
j. Section 3.2.9, Pg. 16, Tailings Management Alternatives states that *"a potential alternative for tailings disposal is to deposit the tailings into one (1) or more of the open pits when mining at a pit has ceased, and that this alternative for tailings disposal will be considered in the feasibility study"*.
k. The potential alternative shall be detailed and rational on selected option provided within the updated Plan.
l. Limited information pertaining to the monitoring is provided in the *Plan*.
m. The Monitoring Plan must consider the entire life span of the project and include also provisions for care and maintenance or temporary closure, and permanent closure. The Monitoring Plan should further include a description of the proposed methods,

procedures, standards, and schedules, while acknowledging that further conditions may be established in the Water Licence.

9.2.5 Metal Leaching & Acid Rock Drainage

The ***Volume 10-22 Metal Leaching and Acid Rock Drainage Management Plan*** (MLARDMP or Plan) is designed to ensure that the ML/ARD potential of geologic materials disturbed by Project activities is identified and the potential for generation of ARD and ML is minimized to ultimately protect aquatic environment, particularly minimizing effects to water quality.

a. Section 6.1.2, Pg. 5, Mine Workings and Waste Rock ML/ARD Prediction Program Table 6.1-1 provides ARD of Waste Rock and indicates that "*George Property proportions are not differentiated by deposit*".
No explanation is provided with respect to the reasons of not defining ARD of Waste Rock for George Property's deposits. And it is also unclear how (or based on which waste rocks?) the ARD was calculated for George Property?

9.2.6 Road, Borrow Pits and Quarries

The ***Volume 10-14 Road Management Plan*** (RMP or Plan) outlines construction, operation and management of access and transportation for the Back River Project including construction, operation and closure of an all-weather airstrip, connecting winter roads and associated rock quarries. In the reviewing of the Plan, the NWB has identified items that, at a minimum should be addressed within the next version of Plan:

a. Section 4.2, Pg. 11, All-Weather Road Infrastructures states that the *"Goose and George sites will require all-season roads in order to operate year-round. The roads will be constructed in a permafrost environment"*.
b. Measures to protect the permafrost regime, to minimize the potential erosion, ponding of water etc. are to be detailed.
c. Section 4.2.4 Pg. 13, Construction of All-weather Roads states that "*Efforts shall be made to minimize the duration of any in-stream works and minimize disturbance at stream crossings*".
d. The Plan should clearly indicate that all in-stream works for water-bodies frequented by fish shall be completed in accordance with DFO relevant Guidelines.
e. Section 7.3, Pg. 18, states that winter roads will be *inspected and maintained in accordance with the Field Guide for Ice Construction Safety (Depart. Of Transportation, NWT(1), refer to section 3 of the field guide, "Ice Capacity and Testing").*
f. It is recommended that inspection and maintenance details including the frequency and type of inspections be included within the Plan.
g. Design details (drawings) are to be included.

The ***Volume 10-16 Borrow Pits and Quarry Management Plan*** (BPQMP or Plan) outlines development, operation and closure of approved borrow and rock quarry areas within the Back River Project including the Goose and George Properties, and the MLA. The Plan is designed to

minimize adverse effects to downstream water quality and quantity due to quarry operations and the MLA. The next update to the Plan should at a minimum include the followings:

a. Section 3.5.1, Pg. 7, Development Plans – Rock Quarries states that "A detailed procedure will be prepared before the start of development for each rock quarry. Site development plans will augment this management plan with specific details".
   It is suggested that these site development plans be subsequently incorporated into the Plan.
b. Section 7.1, Pg. 13, Monitoring Water Quality indicates that "*During high runoff periods, water may drain from borrow and rock quarry areas. Should noticeable flows occur, the water will be tested to ensure it meets permitted criteria.*"
   If needed, run-off containment measures/structures (ponds) should be included within water management infrastructures. Structures' capacity should be enough to contain the high run-off during freshet.

Although the ***Volume 10-13 Explosives Management Plan*** (EMP or Plan) is generally conceptual at this stage, the NWB has reviewed it and identified the following items, which should be addressed:

a. It is stated that "*at the George site, there will be a laydown and storage area for up to 100 tonnes of inert AN"*. However, Volume 2, Project Description Section 6.7.7.1 and V.11, Type "A" Licence Application, Section 4.2.u.1 indicate that "*up to 500 tonnes of ammonium nitrate will be stored at the George Property"*. Inconsistencies are noted on Explosive storage capacities in Marine Laydown Area and Goose Property in Project Infrastructure, Pg. iii-iv, and throughout the Plan. Explosive storage capacities should be confirmed to eliminate discrepancies between different documents.
b. Details on management of potential run-off water associated with ammonium nitrate storage shall be provided. Information should be provided on where/how the run-off water will be disposed of / treated and what steps will be taken to ensure that it meets discharge criteria before being released.
c. According to Figure 6-3 Goose Property General Arrangement the Explosive Storage is located on the water body?
d. Although Figures 6-1 to 6-3 provide Explosive Management facilities anticipated locations in Marine Laydown Area, George and Goose Properties, however no design details (drawings) are included within the Plan at this stage.
e. A Site-specific Ammonia Monitoring and Management Strategies shall be developed to identify potential sources of ammonia; estimate ammonia loading and identify the need for additional controls if warranted; and include procedures to assist in mitigating ammonia contributions from blasting agent spillage or other losses.

9.2.7 Emergency Response and Spill Contingency

The SIG requirement to address phases of the project including construction, operation, closure and post-closure as well as procedures during care and maintenance is not generally reflected in the series of Environmental Protection Plans (EPPs) that have been prepared for the Project DEIS (i.e. phased approach not present). At this stage, certain aspects of Plans remain

conceptual, and the next updates will likely accompany the FEIS. This includes the following documents:

The ***Volume 10-3 Risk Management and Emergency Response Plan*** (RMERP or Plan) is to ensure that an adequate level of emergency preparedness is available for the construction and operation of the Project. The scope of this plan includes the Marine Laydown Area in southern Bathurst Inlet, and both the Goose and George Properties. The Plan will be further updated based on detailed engineering designs prior to the start of construction. The following aspects of Plan also need to be more detailed:

a. Section 4.2, Pg. 14 Natural Hazards states that *"an assessment of risk and identification of mitigation measures associated with effects of the environment on the Project can be found in Volume 9, Chapter 3 of the DEIS"*.
   Instead of referring to another Volume of DEIS the final RMERP should provide all risks related to potential natural hazards and identify mitigation measures during each phase of mine activities: construction, operation, closure and post-closure.
b. Section 4.3. Pg. 14 Accident and Malfunctions states that "*specific risk assessments, root cause, consequences, and mitigation processes are itemized in Volume 9 of the DEIS"*.
   The updated RMERP should assess all accident and malfunctions related risks and consequences and identify mitigation measures during each phase of mine activities.
c. Section 5.5, Pg. 16 discusses Emergency Response Procedures that may generally be related to the accident and malfunctions.
   The updated RMERP should also provide Emergency Response Procedures that could be related to the natural hazards (storms, extreme rainfall or snowfall, extreme low temperatures) and geo-hazards (seismicity, ground and slope instabilities).
d. Section 5.5.2 Fire/Explosion does not detail the procedures for such fires when fighting them with extinguishers is not or not anymore practically possible.
   No emergency procedures associated with explosives are provided.
e. Emergency Response Procedures should also detail as to how multiple emergency events will be handled.
f. Site map(s) that is (are) specifically designed to emphasize emergency response element should be provided.
   The map(s) should depict emergency response equipment, fuel caches, nearby water bodies, camp infrastructures, and other relevant information.

Volume 10-5 Spill Contingency Plan (SCP or Plan) is to respond to hydrocarbon or other contaminant spill incidents that may occur at the Project including MLA in southern Bathurst Inlet, and both the Goose and George Property, during construction and operation of the proposed mine.

The Plan is generally conceptual and qualitative as no quantitative information is provided with respect to the material and number/type of containments to be stored on sites during different

phases of mine. NWB review of the plan has identified the following items that should also be addressed:

a. Section 2, Pg. 6, Table 2-1. Contains External Reporting Volumes for the list Contaminants. It is noticed that unanticipated seepages from TIA, WRSA, landfills, containment ponds etc. have not been considered spills under the Plan.
   These seepages should be considered "spills" as they have unintentionally or accidently been allowed to breach their intended containment and may have an adverse impact on the environment.
b. Section 7, Pg. 15, Spill Response Equipment states "*that a vehicle outfitted with a self-contained collection of spill response materials for rapid deployment to spill sites will be utilized. Table 7-2 lists the typical content of mobile environmental emergency trailer that will be located on site at each of the Back River Project properties"*. However, besides the mobile environmental emergency trailer, spill kits shall permanently be located at various sites of each property as multiple spills events may occur simultaneously at different locations.
   It is recommended that an explanation be provided as to how multiple events will be handled simultaneously.
c. Section 8.3.2, Pg. 20, Domestic Sewage, Solid Waste and Contact Water states that "*any problems with the sewage treatment system, incinerator or other waste disposal systems will be promptly reported to the Site Superintendent"* without providing details regarding spill responses related to these types of materiel spilled.
   It is suggested that each camp be listed along with sewage storage facilities and/or treatment facilities and the amount of sewage generated. In addition, this section should include spill response procedures for addressing broken/dislodged sewer lines.
d. Section 8.4, Pg. 21, Response to Fire refers to relevant site firefighting procedures without providing at a minimum the water use related information.
e. Procedures for responding to spills involving fuel transport trucks should be included in the Plan.
f. Appendix A lists the Hazardous Materials Transported, Stored and Used On-site with their descriptions and potential management and pollution prevention strategies.
g. This table should also contain an estimated inventory and containment types of Hazardous Materials stored on-site at any given time. Responses to Ammonium Nitrate potential spill to water shall also be included within the list.
h. Site map(s) that is (are) specifically designed to emphasize spill response elements should be provided. The map(s) should depict spill response equipment, fuel caches, nearby water bodies, camp infrastructures, and other relevant information.
i. Actual copies of the MSDS for all hazardous substances stored on site should be included within the Plan.

Although the ***Volume 10-6 Marine Laydown Area, Oil Handling Facility*** (MLA-OHF), ***Oil Pollution Emergency Plan*** (OPEP) was developed to specifically assist in implementing measures to protect the marine environment and minimize impacts from potential spill events. Nevertheless, there are aspects of the Plan that are geared to addressing spills on land. The MLA-OHF OPEP has been designed specifically to compliment the Back River Project, SCP document. It is stated that the plan is not to be construed as to supersede existing emergency

response plans, rather it is conceived to address the specifics of the fuel storage facility, the bulk incoming transfer of fuel and spill scenarios directly relating to this operation.

The NWB reviewed the sections related to potential spills on land and identified the following items, which should be addressed:

a. Section 2.2.3, Pg. 3, Dedicated Facility Spill Response Equipment, states that "*a list of the equipment can be found in Appendix 4*". However, no Appendix 4 appears to be included within the Plan and generally no Appendixes are included within the Volume 10 EMP's.
b. Section 3.2, Pg. 4, Oil Handling Facility and Infrastructure states that "A preliminary site plan of the projected MLA-OHF configuration is provided in Appendix 2". No Appendix 2 is included in the Plan. No detailed information is provided related to all proposed fuel storage facilities (permanent and temporary facilities) associated with the site.
c. Section, 3.3.5, Pg. 6, Ice Conditions should describe emergency procedures if ice conditions happen suddenly and earlier than expected with a ship being on the Bay for fuel deliveries.
d. Section 4.1, Pg. 9, Bulk Oil Transfer, Ship to Shore states that "*the bulk fuel transfer procedures are fully detailed in the standard operating procedure in Appendix 5*". However, no Appendix 5 is included within the Plan.
e. Section 5.4, Pg. 11, Equipment and Personal Protection states that "*Spill kits are strategically placed primarily in areas of fuel handling to facilitate immediate first response in the event of a hydrocarbon release to land. A complete list of spill response equipment is found in Appendix 4 of this plan*". However, no Appendix 4 appears to be included within the Plan and generally no Appendixes are included within the Volume 10 EMP's.

   It is recommended that the MLA-OHF site layout map be included within the Plan to provide, at a minimum all oil handling and storage infrastructures and spill response equipment kits locations.
f. Section 7, Pg. 17, states that "*full details of the properties and hazards associated with potential spills of all products are found on the Material Safety Data Sheets (MSDS) in Appendix 8 of this plan*". However, no Appendix 8 appears to be included within the Plan.
g. Section 8.1, Pg. 26, Response Strategies – Larger Spills states that spills less than $3.5m^3$ will be handled by handled by MLA-OHF response operations. For spills larger than $3.5m^3$, it is stated that the Emergency Response Coordinator shall determine if it is necessary to increase the response capability by requesting third party without actually specifying procedures. It is recommended that any revision of the Plan should include actual procedures for dealing with large spills.
h. No procedures and/or information are provided related to the hydrostatic testing for the proposed fuel storage facilities.

General Comment with respect to the series of Environmental Protection Plans:

Some ambiguities seem to exist concerning where the Risk Management and Emergency Response, Spill Contingency and Oil Pollution Emergency Plans start and end. This ambiguity

and confusion could potentially decrease the functionality of these Plans. Establishing more precise separation related to the usage of plans may help to address overlapping issues. Or If the Guidelines for EIS allow, it is suggested, that for on-land activities Goose, George Sites and Marine Laydown Area the Risk Management and Emergency Response, Spill Contingency and Oil Pollution Emergencies Plans be consolidated in one Plan as one consolidated Plan may increase effectiveness and functionality of the Plan.

10.0 Monitoring

At this time, most of the overall monitoring plan details are scheduled to be provided in the FEIS. Only general details for the monitoring programs are provided.

The ***Volume 10-19 Conceptual Aquatic Effects Management Plan*** (AEMP or Plan) has been conceptually designed to minimize or eliminate potential adverse effects on the freshwater and marine environments that could result from their interaction with project components over the life of the Project. The Plan was reviewed, and the following items at a minimum are to be addressed within the updated Plan:

a. Section 6.1.1, Pg. 4, Site Water Management states "*that in the Goose Property Area, site contact water (including runoff from waste rock storage areas (WRSA) and mine water) and treated sewage effluent will be directed to the Tailings Impoundment Area (TIA) and discharged if necessary during the Reclamation and Closure Phase to an approved site and will meet applicable water licence criteria*. *The water management plan (Figure 6.1-2) for the George Property Area is very similar, with site contact water and treated sewage effluent being directed to the Water Management Facility (WMF)*". No details are provided with respect to potential discharge locations and volumes for the TIA, WMF, treated sewage, collection ponds, on-land discharges, and any other potential discharges. No information is provided regarding the prevention of water ponding or erosion at discharge locations.

b. Table 7.2-1, Pg. 16, provides AEMP Sampling Locations, Descriptions and Purposes. Table 7.2-2, Pg. 26, provides AEMP Monitoring Schedule. Table 7.2-3, Pg. 27, provides Physical, Chemical, and Biological Parameters in AEMP Sampling Program. It would be useful to create an additional Table with combining information from tables stated above. The exact locations of sampling points shall also be provided within given water-bodies.

c. Table 7.2-2, Pg. 26, AEMP Monitoring Schedule, Back River Project provides schedules for Temporary Closure and Care and Maintenance Phases. The NWB notices that Temporary Closure and/or Care and Maintenance Phases are not clearly stated and defined in any of EMP's including in the Mine Closure and Reclamation Plan.

d. Section 7.2.6, Pg. 30 AEMP Sampling Details Table 7.2-5 indicates that that CCME Guidelines for the Protection of Freshwater or Marine Aquatic Life and MMER Criteria (if/when triggered) used for water/sediment quality parameters.
EC noted that "*CCME guidelines are not available for a number of freshwater, marine, and sediment parameters, and recommended that site-specific guidelines be developed for parameters of concern for which there are no CCME guidelines, or for parameters*

(not identified) that are naturally greater than CCME". NWB concurs with this recommendation.

11.0 Closure and Reclamation

The ***Volume 10-29 Mine Closure and Reclamation Plan*** is still preliminary and conceptual. The FEIS shall include a detailed Interim Mine Closure and Reclamation Plan. The followings items should be clarified at a minimum:

a. Section 2 Care and Maintenance Plan for Temporary Mine Closure define the "Temporary Closure as the cessation of mining and processing operations for a finite period of time with the intention of resuming operations upon resolution of the cause of the cessation (AADNC, 2007). It is also stated that Temporary closure could last for several weeks or as long as several years depending on the nature of the contributing factor(s)".

As the Water Licence generally defines the Care and Maintenance Phase the updated MCRP should provide definitions of temporary closure and care and maintenance including outlining what activities and monitoring may continue at the project, subject to the phase within which care and maintenance is implemented. This recommendation is valid for all EMPs that should include management strategies and monitoring during Care and Maintenance Phase.

b. Section 4.4, Pg. 20, Umwelt Underground Mine Workings should be detailed and should take into account designs of all declines and raises, detailed hydrogeological conditions assessment and thermal modeling.
c. Section 4.6, Pg. 24, Tailings Impoundment Area states the TIA "will be closed out by draining off and treating tailings supernatant, constructing a closure spillway and capping the TIA with a 2 m cover of nPAG waste rock".

   It is noticed that WRSAs will be covered by 4m nPAG (S. 4.3 Open Pits).

Section 3.1.7 of Mine Waste Rock and Tailings Management Plan states that "average freeze/thaw depths were calculated using a number of simplified closed-form mathematical solutions including the Neumann and the Modified Berggren equations (Knight Piésold, 2013b). Based on these computations, the freezing depth over an average winter is estimated to be approximately 6 m and the thawing depth over an average summer is estimated to be approximately 3 m".

A rational should be provided on differences of cover thickness for WRSA and TIA. A thermal modelling should validate whether or not 2m cover depth is reasonable to facilitate aggradation and encapsulation in permafrost at TIA.

d. Section 5 Monitoring states that "Post-closure monitoring is expected to be required for five (5) years after completion of active closure activities in Closure Year 10. This is in line with mine reclamation at other northern sites and is believed to be a reasonable

monitoring period given the amount of post-closure verification monitoring that can be carried out during the closure phase".

Given the fact that the post-closure monitoring of other northern reclaimed mines (Nanisivik, Polaris Mines) is being generally longer (up to 25 years), the 5 years duration would not probably be enough to evaluate the mine structures stability. The Post-closure monitoring duration should be re-evaluated

Monitoring Program Stations locations shall also be included within the Project Development and Infrastructure Area maps during Care and Maintenance for Temporary Closure and Permanent Closure and Reclamation.

Section 6, Estimated Closure and Reclamation Costs does not provide the Closure Cost Estimate.

e. A Closure Cost Estimation shall be provided within the updated Plan to reflect the total financial Security for Mine final Closure and Reclamation.

12.0 Project Designs and Drawings

Few drawings or designs have been provided as part of the DEIS. General Arrangement Drawings and Site Layout Drawings have been provided for the Goose Property, George Property, and the Marine Laydown Area. Also, design drawings have been provided for the Tailings Impoundment Area (TIA) (i.e. not for construction).

The proponent noted that these designs will be progressed under the FEIS and that design criteria will be based on the approach successfully used at the Ekati Diamond Mine, NWT (i.e. permafrost was used to minimize water leaching into the subsoil; the Back River Project site is located in a region of continuous permafrost).

13.0 Additional Environmental Management Plans to Consider

In addition to the mostly conceptual management plans presented in DEIS Volume 10 that should be updated, the following management plans should also be developed and submitted within the FEIS:

a. Lake Dewatering Plan (could be included within SWMMP);
b. Pits Re-flooding Plan (could be included within SWMMP)
c. Wastewater Treatment Facilities Management Plan;
d. Landfarm Management Plan;
e. Ammonia Management Plan;
f. Site Surveillance Network Monitoring Program

14.0 Type "B" Application for the Back River Project Pre-development Activities

The NWB acknowledges that as the Project development is approached in a phased manner with site preparation activities occurring first, Sabina has reiterated the following pre-development activities from the Type "A" Water Licence Application – Access and submitted to the NWB on October 20, 2014, as a Type "B" Water Licence Application:

a. Construction and use of an all-weather road, and associated water crossings, from Goose Camp to the existing airstrip and quarry
b. Expansion of the existing all-weather airstrip and associated realignment of Rascal Stream
c. Expansion of the existing Goose quarry and development of the proposed Umwelt quarry
d. Development of an ice-road for access to the quarries during the winter season before the all-weather road is completed
e. Staging of a temporary laydown area at the Marine Laydown Area to store equipment, materials and fuel for 2016 construction activities (note: 2016 activities are not included in the scope of application).

The remaining major activities proposed under ***Back River Project - Access Type "A" Water Licence Application*** are the followings:

a. Construction and operation of the Marine Laydown Area
b. Construction and maintenance of winter roads
c. Construction of infrastructure such as all-weather site roads, laydowns areas, increasing existing camp capacity, and fuel storage at the George Property

Based on recent discussions with Sabina the NWB is of an opinion that the 2 proposed Type "A" Water Licence Applications':
Back River Project - Mine Sites Type "A" Water Licence Application Scope and
Back River Project - Access Type "A" Water Licence Application's remaining Scope, may potentially be merged and only one consolidated Type "A" Water Licence Application could be included within FEIS.

15.0 List of Acronyms

AANDC or INAC	Aboriginal Affairs and Northern Development Canada
AEMP	Conceptual Aquatic Effects Management Plan
BPQMP	Borrow Pits and Quarry Management Plan
CCME	Canadian Council of Ministers of the Environment
DCPF	NIRB and NWB Detailed Coordinated Process Framework
DEIS	Draft Environmental Impact Statement
DFO	Fisheries and Oceans Canada
EC	Environment Canada
EIS	Environmental Impact Statement
EMPs	Explosives Management Plan
EMPs	Environmental Management Plans
EPP	Environmental Protection Plan
FEIS	Final Environmental Impact Statement
GN	Government of Nunavut
HMMP	Hazardous Materials Management Plan
IRs	Information Requests
KP	Knight Piésold
LWMP	Landfill and Waste Management Plan
MCRP	Mine Closure and Reclamation Plan
MLA	Marine Laydown Area
MLA/OHF	Marine Laydown Area, Oil Handling Facility
ML/ARD	Metal Leaching / Acid Rock Drainage
MLARDMP	Metal Leaching and Acid Rock Drainage Management Plan
MMER	Metal Mining Effluent Regulations
MWRTMP	Mine Waste Rock and Tailing Management Plan
NIRB	Nunavut Impact Review Board
NLCA	Nunavut Land Claims Agreement
NWB	Nunavut Water Board
nPAG	Not Potentially Acid Generating
NRCan	Natural Recourses Canada
OPEP	Oil Pollution Emergency Plan
OSMP	Ore Storage Management Plan
PAG	Potentially Acid Generating
PHC	Pre Hearing Conference
QA/QC	Quality Assurance / Quality Control
RMERP	Risk Management and Emergency Response Plan
RMP	Road Management Plan
SCP	Spill Contingency Plan
SFE	Shake flask extraction leachate test

SIG	Supplemental Information Guidelines
SWMMP	Site Water Monitoring and Management Plan
TDS	Total Dissolved Solids
TIA	Tailings Impoundment Area
TM	Technical Meeting
WMA	Water Management Area
WRSA	Waste Rock Storage Area
WMF	Water Management Facility
XRD	X-ray diffraction