Interested Party:	NRCan	**No.:**	**1**
Subject:	Explosives Storage		

Reference to Application: N/A

Comment:

Sabina has indicated that pre-packaged explosives will be stored in accordance with legislative requirements and best management practices. It is anticipated that the handling and storage of explosives would be licensed by the territorial Occupational Health and Safety Commission and not NRCan. Sabina should clarify the information on the storage of explosives and confirm how explosives storage will be licensed, given that this regulatory authorization has not been identified in the exception application.

Sabina Response:

Explosives will be brought to site on dedicated flights using dedicated personnel. Transportation and storage will be conducted in accordance with the Nunavut WSCC's *Mines Health and Safety Act* and federal *Transportation of Dangerous Goods Act* requirements. Associated permits will be issued either directly to Sabina or to qualified contractors. Magazines will also be licensed by Nunavut WSCC. Two magazines will be licensed, one for an explosive magazine and one for a detonator magazine. Sabina has applied for and received similar annual permits in previous years.

Interested Party:	NRCan	**No.:** 2
Subject:	Explosives Storage	

Reference to Application: Project Description, Table 8.1-1

Comment:

Based on NRCan's experience, the construction or placement and operation of explosive and ammonium nitrate storage facilities may interact with the surficial geology, vegetation, freshwater quality and human health and safety. However, all of these impacts would be minimal with the implementation of mitigation measures, best management practices, and by following the quantity safe distance principles set out in NRCan's Quantity Distance Principles User's Manual (1995).

While it is unlikely that this would change the overall conclusions of the application for exception, the valued ecosystem component – project component interaction matrix (Table 8.1-1, Project Description) requires clarification. Specifically, it is not clear whether the matrix and subsequent effects analysis is referring to the use of explosives or the storage of explosives. If the matrix addresses the storage of explosives only, Sabina should clarify its position that the storage of explosives at the Goose Exploration Camp will have a positive impact on paleontological and nontraditional land and resource use.

Sabina Response:

Sabina acknowledges the error in the impact matrix with respect to a positive impact on archaeological and paleontological resources. The SPW is expected to have a neutral or negligible effect on these resources.

Use of explosives is covered separate from storage in the matrix, and is included under activities for each quarry (i.e., stripping, drilling, blasting and excavation).

Interested Party:	NRCan	**No.:**	**3**
Subject:	Explosives Storage		

Reference to Application: Page 54 of Appendix B- Project Description Pt. 2

Comment:

While it is likely Sabina has included broader mitigation measures that would apply to the mine development proposal, Page 54 of Appendix B- Project Description Pt. 2, refers to manufacturing of explosives and manufacturing facilities for explosives.

Sabina should confirm that the proposed exception activities do not include explosives manufacturing facilities.

Sabina Response:

The proposed activities do not include explosives manufacturing facilities. Detonators and explosives will be flown in as required and kept in appropriate magazine storage.

Interested Party:	NRCan	**No.:** 4
Subject:	Quarry Rock Characterization and ARD/ML Potential	

Reference to Application: Table 6.1 of the Quarry Management Plan

Comment:

In Appendix B of the 12.10.2(b) exception application, the proponent has concluded, based on data on geochemical characterization of rock from the proposed Goose and Umwelt quarries, that material from the chosen locations is suitable for use in construction because of its limited potential for acid rock drainage (Appendix B, section 8.5.2.2 pg 53). However, Appendix J indicates that 32% of the samples tested at the Umwelt Site are classified as having an uncertain potential or as potentially acid generating (Note: Figure 3 of Appendix J shows that up to 50% of the samples may be classified as having an uncertain ARD potential).

Table 6.1 of the Quarry Management Plan indicates that the site design and development of the quarry would include the identification of suitable rock with low acid rock drainage and metal leaching (ARD/ML) potential however NRCan was unable to locate the specific criteria (e.g. only material with an NPR > 3) and on-site procedure that that would be followed to determine whether material would be geochemically suitable for construction purposes.

a) Consider operational testing of the quarry rock (during excavation) to confirm the ARD/ML potential in order to ensure that acid generating rock is not used in the construction of the all-weather air strip, road or related site preparation infrastructure construction;

Sabina Response:

Sabina acknowledges that there may be some benefit in completing additional confirmatory testing during quarrying activities to ensure that potentially acid generating rock is not used in construction. Given that there will be limited laboratory capabilities and equipment on site during site preparation activities, Sabina is considering two options for additional confirmatory testing prior to construction. The first is to collect additional samples for off-site testing a minimum of two months ahead of quarrying activities to further delineate areas that might have ARD potential. The second is to collect blast hole cuttings during quarrying and to complete net acid generation "NAG" tests - either at the site or at an off-site laboratory in Yellowknife in sufficient time to identify and delineate any areas with ARD potential before they are excavated for use in construction.

Also, Sabina would like to clarify that the statement in Appendix J indicating that 27% of samples are classified as having an uncertain potential for ARD and 5% are classified as PAG pertains to all of the upper greywacke samples. The Umwelt quarry area was selected specifically to avoid the mineralization trend shown in plan and section Figure 2. The 16 samples located outside of the mineralization trend are shown in pink circles on Figure 3. Only 3 of those samples were classified as having an uncertain ARD potential and none were PAG. We have completed an initial assessment of the kinetic test data, NAG test results and mineralogy for this project and have confirmed that low S samples with NP/AP ratios between 3 and 1 are not-PAG. This information will be presented in the FEIS. However, if required, a memo presenting these results could be provided prior to submission.

Interested Party:	NRCan	**No.: 5**
Subject:	Quarry Rock Characterization and ARD/ML Potential	

Reference to Application: Quarry Management Plan, Table 6.1

Comment:

In Appendix B of the 12.10.2(b) exception application, the proponent has concluded, based on data on geochemical characterization of rock from the proposed Goose and Umwelt quarries, that material from the chosen locations is suitable for use in construction because of its limited potential for acid rock drainage (Appendix B, section 8.5.2.2 pg 53). However, Appendix J indicates that 32% of the samples tested at the Umwelt Site are classified as having an uncertain potential or as potentially acid generating (Note: Figure 3 of Appendix J shows that up to 50% of the samples may be classified as having an uncertain ARD potential).

Table 6.1 of the Quarry Management Plan indicates that the site design and development of the quarry would include the identification of suitable rock with low acid rock drainage and metal leaching (ARD/ML) potential however NRCan was unable to locate the specific criteria (e.g. only material with an NPR > 3) and on-site procedure that that would be followed to determine whether material would be geochemically suitable for construction purposes.

b) Establish the specific criteria that will be used to determine geochemically suitable material;

Sabina Response:

The criteria for defining NPAG material will depend on the testing methods that are available at the time of quarry development. If offsite ABA testing is completed, the criteria will be as described in the Geochemistry Characterization Results memo for the Umwelt Quarry (Appendix J). Namely, samples with NP/AP ratios greater than 3, and/or samples with AP less than 5 will be defined as NPAG. If NAG tests are used, the criteria for NPAG samples will be samples with NAG pH's greater than 5.5.

Interested Party:	NRCan	**No.:** 6
Subject:	Quarry Rock Characterization and ARD/ML Potential	

Reference to Application: Quarry Management Plan, Table 6.1

Comment:

In Appendix B of the 12.10.2(b) exception application, the proponent has concluded, based on data on geochemical characterization of rock from the proposed Goose and Umwelt quarries, that material from the chosen locations is suitable for use in construction because of its limited potential for acid rock drainage (Appendix B, section 8.5.2.2 pg 53). However, Appendix J indicates that 32% of the samples tested at the Umwelt Site are classified as having an uncertain potential or as potentially acid generating (Note: Figure 3 of Appendix J shows that up to 50% of the samples may be classified as having an uncertain ARD potential).

Table 6.1 of the Quarry Management Plan indicates that the site design and development of the quarry would include the identification of suitable rock with low acid rock drainage and metal leaching (ARD/ML) potential however NRCan was unable to locate the specific criteria (e.g. only material with an NPR > 3) and on-site procedure that that would be followed to determine whether material would be geochemically suitable for construction purposes.

c) Describe how geochemically (and physically) unsuitable material will be managed and monitored in order to minimize impacts to the environment.

Sabina Response:

It is anticipated that any PAG quarry rock would be stored in a temporary location within the confines of the quarry. Once mining commences, this material would be relocated to the nearest waste rock storage area where it would be encapsulated and covered with NPAG cover material. In the unlikely event that quarry development occurs and mining does not progress, the material would be covered in place.

Interested Party:	NRCan	**No.: 7**
Subject:	Permafrost and Terrain Stability	

Reference to Application: N/A

Comment:

NRCan identified, during its technical review of the DEIS, that site-specific geotechnical and geophysical investigations would be useful to support final borrow site selection to ensure that ice-rich terrain is avoided. If not already conducted, these would also be useful to support the design and final siting or routing of infrastructure such as: borrow sites, the marine lay down area, the all-weather airstrip extension and the all-weather road, which are included as proposed exception activities.

Sabina Response:

Most or all of the aggregate for SPW will come from the existing quarry and/or Umwelt rock quarry. If sand and gravel is required, it will be in small quantities and will be sourced from existing permitted borrow areas. Activities at the MLA are not expected to meaningfully disrupt the ground surface. Geotechnical investigations have been undertaken at the airstrip and along the all-weather road as deemed appropriate during pre-feasibility and feasibility studies, as these project components are part of the main project.