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Nalunaq A/S

Nalunaq Gold Project

Scoping and Terms of Reference for the Environmental Impact Assessment for the Nalunaq Project 2020

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Scoping and Terms of Reference for the Environmental Impact Assessment for the Nalunaq Project 2020

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List of Abbreviations

CPR	Competent Person Report
DCE	Danish Centre for Environment and Energy
DTS	Dry Tailings Storage
DTSF	Dry Tailings Stacking Facility
EAMRA	Environmental Agency for Mineral Resources Activities
EIA	Environmental Impact Assessment
LOM	Life-Of-Mine
MLSA	Mutual Logistic Support Agreement
MRA	Mineral Resources Authority
ROM	Run-of-Mine
SIA	Social Impact Assessment
SRK	SRK Exploration Services Ltd.
TEU	Twenty-foot-equivalent units
ToR	Terms of Reference
tpa	Tonnes per annum

1. Introduction

Nalunaq A/S is currently developing its Nalunaq Gold Project in South Greenland. The historical Nalunaq gold mine operated under Crew Gold Corporation from 2004 to 2009 when Run-of-Mine ("ROM") material was mined and shipped offshore for processing to extract gold. Subsequently, Angel Mining PLC operated a small underground gold processing facility at Nalunaq from 2009 to 2013 and produced gold doré on site.

After the closure of the former mining activities, it was concluded by the Danish Centre for Environment and Energy (DCE) that the environmental impact has been insignificant and that the Nalunaq gold mine can serve as an example of how a mine can be operated in Greenland with minimum environmental impact (Bach & Olsen 2020).

The Nalunaq Gold Project is an advanced exploration project whose future depends on the identification of new resources that extend beyond the project's current mineral resources. At this stage, various studies are underway to confirm the ultimate mining and on-site mineral processing methodologies to extract Nalunaq's resources.

As part of developing the Nalunaq Gold Project, the Greenland Authorities require an Environmental Impact Assessment (''EIA'') to be prepared in accordance with guidelines published by the Greenland Mineral Resources Authority (''MRA'').

The current EIA guidelines (from 2015) state that potential environmental impacts of a mining project should be identified and evaluated in a scoping report during the exploration phase. The scoping report will then form the basis for the detailed plan for the EIA process, including the Terms of Reference (''ToR'') for the EIA.

The purpose of this scoping report is to identify relevant environmental aspects that require special attention in the EIA for the Nalunaq Project and to determine the need for additional impact assessment studies to provide the data needed for the EIA to support the resumption of mining operations at Nalunaq.

In situations where data baseline does not exist, the mining company should also carry out environmental baseline studies with the aim to describe the state of the environment prior to construction and mining activities.

This document provides the ToR for an EIA for the Nalunaq Gold Project, based on the findings and conclusions of the scoping report.

The project management team will derive a Project Master Schedule (Level 1) that will be presented in the final EIA report, identifying the key milestones of the project.

Based on the current Inferred Resources, the Company plans to operate the mine for approximately 5 years from the date it reaches commercial production. Through underground development, drilling and the sequencing of mining operations, the Company estimates that based on historical development at Nalunaq the Life-of-Mine ("LOM") could be extended furthermore by converting the Exploration Target into a Mineral Resource. Nevertheless, for the purpose of the EIA, the LOM is considered to cover a period of 5 years, after which the closure plan for the mine will be undertaken according to a plan to be agreed under Section 43 of the Mineral Resources Act as required by Greenlandic regulations.

2. The EIA Process for Mine Projects in Greenland

According to the most recent Greenlandic guidelines, the initial stages of the EIA process should consist of the following main activities:

1. Scoping phase. After preliminary consultations between the company (and its consultant), the Greenland authorities and their scientific advisors and relevant stakeholders, a scoping report and ToR are prepared which includes a proposed Table of Contents (ToR) for the EIA.

2. The company evaluates the comments received during the dialogue with the Greenland authorities and considers revision of the ToR/project.

3. The company prepares the final Terms of Reference for approval by MRA.

4. The company prepares an Environmental and Social Study Program including a program for environmental and social baseline studies, project related studies and other studies in consultation with the MRA and the MRA's scientific advisors.

Scoping phase - Terms of Reference for the EIA
Scoping is the initial phase of the EIA process. In the scoping phase, key issues to be investigated and assessed during the subsequent phases of the process are identified, and the range and extent of the studies to be conducted is determined. Following the scoping phase, the ToR for the EIA are formulated.

The development of the ToR for the EIA starts with the drafting of a scoping report. The purpose of the scoping report is – at an early stage of the mining-project - to identify relevant environmental aspects that require attention in the EIA.

The scoping report must contain a brief description of the environment in the proposed mine area and surroundings and briefly outline the planned mining project. It will further identify potential environmental impacts the project might have and which require attention in the EIA. This includes any disturbance the mining project might have as well as potential sources of pollution that could impact terrestrial, freshwater or marine animals, plants and habitats.

Content of the scoping report
The scoping report contains the following main sections:

- Brief description of the various scenarios for the Nalunaq Gold Project (based on data provided by Nalunaq A/S);
- Brief description of the project area including the shipping corridor (landscape, geology, climate, local use etc.);
- Description of the natural environment (flora, fauna, habitats) of the area potentially impacted by the project. This description is based on a literature study and a site visit carried out in August 2019;
- Identification of potential project related disturbance and pollution issues that might impact the environment and that should be addressed in the EIA.
- An assessment of the need for additional studies to provide data necessary for the EIA.

It should be noted that the redevelopment of the Nalunaq Gold Project is leveraged on the brownfield nature of the project given the extensive past history of mining operations at the project site from 2004 to 2013. Unlike a greenfield project, a substantial amount of project data exists and there is a substantial history of environmental monitoring surveys that have taken place from the early 2000s to 2019, the last year of environmental post monitoring after mine closure in 2014. All of the reports support that past operations at Nalunaq did not impact the baseline. Nalunaq A/S is incorporating the results of these surveys in its project development plans.

In the latest and last post monitoring report from DCE it was concluded that the environmental impact from the former mining activities to the environment at Nalunaq has been insignificant and that the Nalunaq gold mine can serve as an example of how a mine can be operated in Greenland with minimum environmental impact (Bach & Olsen 2020).

Before progressing towards the more detailed stage of the EIA, the draft ToR will be published for public consultation, where local communities and stakeholders can comment on the document and ask questions. The Environmental Agency for Mineral Resources Activities (EAMRA) therefore publishes the company's project description and scoping documents for public pre-consultation for 35 days in accordance with the provisions of The Mineral Resources Act.

The company must evaluate the comments received during the public pre-consultation and consider revision of the project as a result of the public consultation.

The revised ToR document will then be submitted for approval to the Greenland authorities.

3. Project Description

This chapter presents facts about the Nalunaq Gold Project area, such as the current gold resources of the project, and outlines an updated project description in order to identify the most important environmental focus points to be included in the EIA.

Project Ownership
The Nalunaq license is held by Nalunaq A/S, a 100% owned Greenlandic subsidiary of AEX Gold Inc., a public company listed on the Toronto Venture Stock Exchange and on the AIM Stock Exchange in London.

Background
The Nalunaq Gold Project is a past-producing underground gold mine located in South Greenland. The mine was first operated under Crew Gold Corporation from 2004 to 2009, and then by Angel Mining PLC from 2009 to 2013, until the mine closed as a result of financial difficulties and a lack of exploration. This led to the site being decommissioned in 2014. Nalunaq A/S saw an opportunity to acquire a past producing high-grade gold asset with significant exploration potential and benefitting from extensive infrastructures that remain in place, including an underground processing plant, underground mine workings, a mine access road and a jetty.

The mine is located within Exploitation license 2003/05 which is 100% owned by Nalunaq A/S and is valid until April 2033.

Nalunaq hosts an Inferred Mineral Resource of 251 koz in 422,770 tons at a grade of 18.5 g/t Au as described by the latest Competent Person Report (''CPR'') from SRK, dated June 2020.

Zone	Classification	Tonnes (t)	Grade (g/t Au)	Contained Gold (oz)
Remaining Stopes	Inferred	26,690	20.8	17,890
Mine Area	Inferred	396,080	18.3	233,080
Total Inferred		422,770	18.5	250,970

Notes:

1. Remaining Stopes reported at a cut off of 6.0g/t Au
2. Mine Area reported at a cut-off grade of 6.0g/t Au
3. Diluted to 1.2m true thickness at 0.0g/t Au
4. Gold price of US$1,500
5. Total refining, transportation and royalties costs of US$57
6. Total operating costs of US$254/t.
7. All figures are rounded to reflect the relative accuracy of the estimate
8. Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability
9. 100% of the Mineral Resource is attributable to Nalunaq A/S

Additionally, the above Inferred Mineral Resource is supplemented by a Tailings Resource, also covered in the CPR, representing 48,220 tons of slurry at a grade of 4 g/t, for a total of 6,200 ounces of gold.

Location

The Nalunaq Gold Project is located in South Greenland at latitude 60°21' N and longitude 44°50' W about 32 km northeast of Nanortalik, Greenland's 10th largest town with a population of approximately 1,350.

The mine lies to the west of the permanent icecap in the municipality of Kujalleq, in Kirkespirdalen, a broad glacial valley situated about 8 km from the tidal, ice-free Saqqaa Fjord.

The Saqqaa Fjord joins the Søndre Sermilik Fjord which together with Tasermiut Fjord form two deep 60-80 km NE trending fjords, that extend from the ocean of the Davis Strait (in the southwest) to the Greenland ice cap (in the northeast).

The site benefits from access to ice-free deep-water fjords and is served by the Narsarsuaq international airport 100 km to the north, with regular connections to Copenhagen and Reykjavik.

The license area includes a land area as well as a marine area, as indicated in Figure 1.

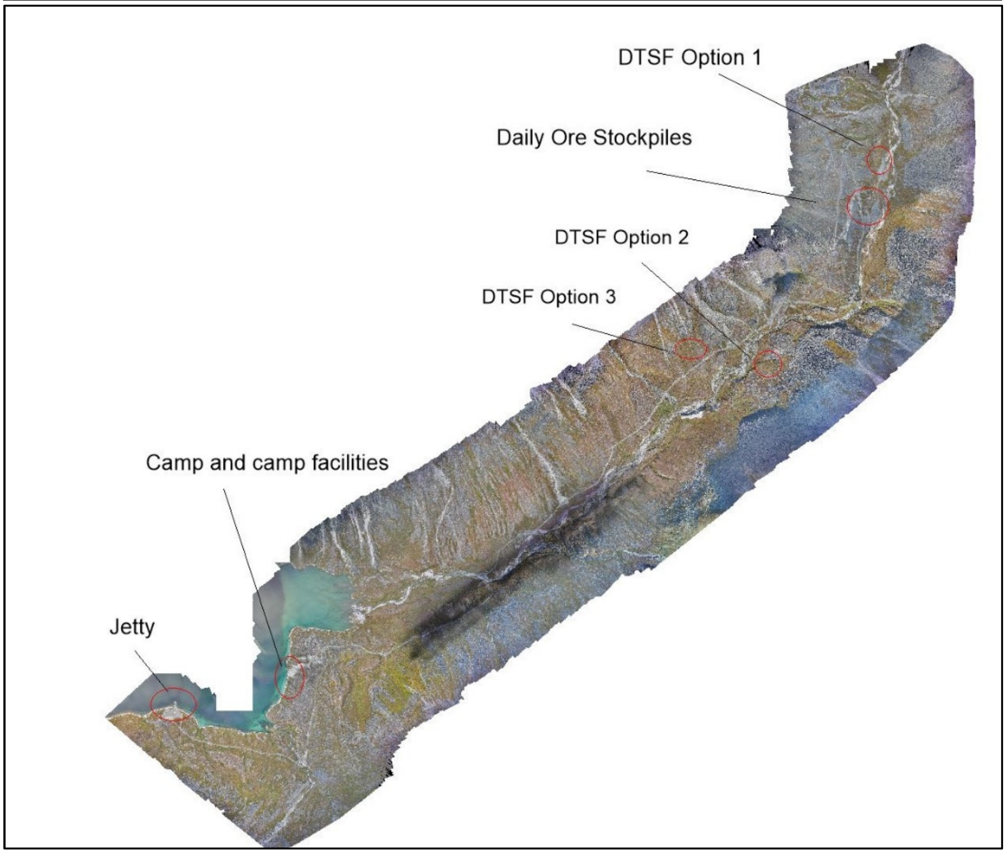


Figure 1: The Nalunaq Gold Project area with suggested locations of the most important project elements. More detailed maps can be found in the project description below.

Nalunaq Gold Project Plan Forward

Nalunaq A/S has developed a strategy to re-initiate operations at its Nalunaq Gold Project through an underground development program leading to full scale mining operations.

Run-Of-Mine (''ROM'') will be fed to a 300 tons per day (''tpd'') processing facility consisting of the following expected circuits: crushing, grinding and gravity recovery plant. It is to be noted that the Company may also decide to implement a flotation circuit to complement the gravity recovery circuit given the high amenability of gold at Nalunaq to concentrate in flotation circuits.

The process plant will be strategically located outside of the underground mine, allowing the Company to properly blend ore grades to maximise gold recovery and provide for future scalability of operations. From past metallurgical testworks and industrial scale processing, gold recovery from the gravity recovery circuit is expected to be 65 to 70 percent. Gravity concentrates would then be smelted on site to produce a Doré, and shipped offsite for further refining. The tailings will be dry stacked and disposed of in a surface Dry Tailings Storage Facility (“DTSF”).

Given the relatively small scale of the operations at 300 tons per day, implementing the capacity for expansion upfront can be done in a cost-effective manner and provide the company the flexibility to substantially increase throughput without a significant additional investment or interruption in operations. The main components of the project are:

<u>Camp Facilities</u>
The Camp Facilities, capable of hosting 100 persons through its Camp Complex, will be established near the fjord at coordinates 60°19'04.0"N 44°55'31.8"W. See Figure 2 below.

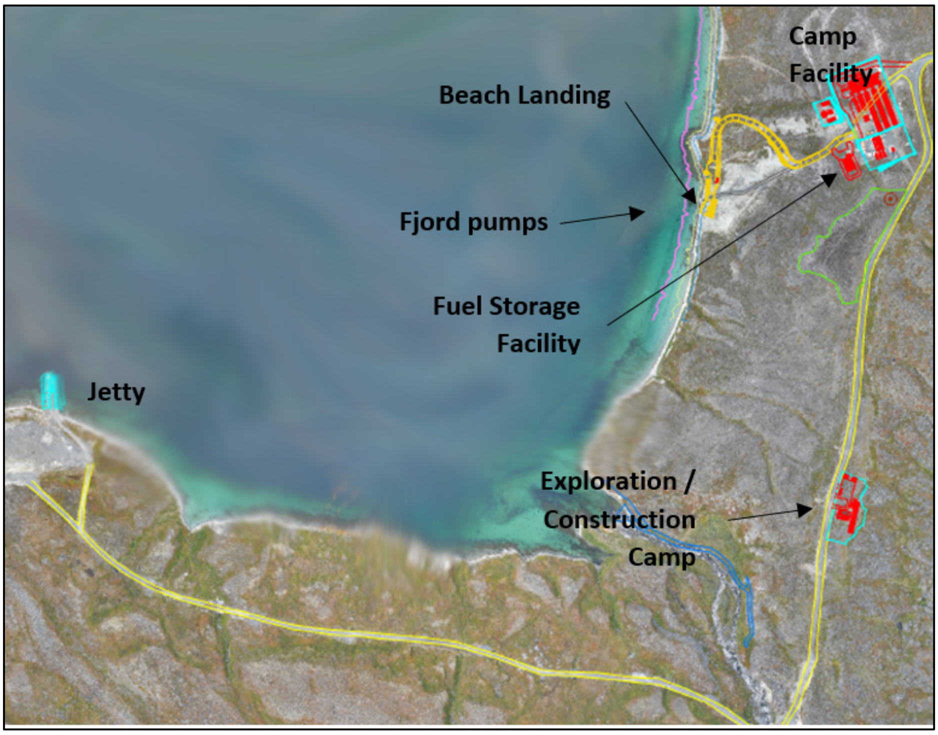
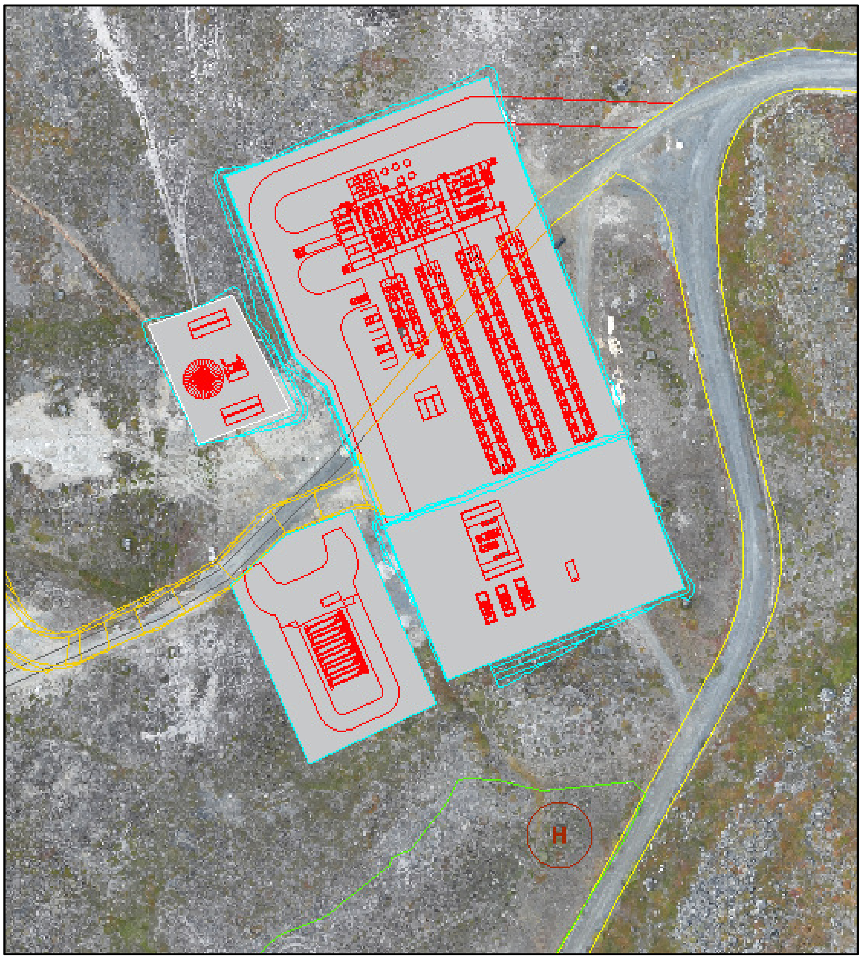


Figure 2: Approximate location of the camp and expected Camp Facilities.

The Camp Complex will be supported by other technical structures such as a sewage treatment plant, a reverse osmosis potable water treatment plan, a fire protection system, freshwater pumps located in the fjord, an incinerator and diesel generators. The Camp Facilities are expected to be constructed where the 2020 exploration camp was located. The temporary Exploration/Construction Camp is being moved into position during the latter part of the 2020 field season.

The Camp Complex is illustrated in Figure 3 below:



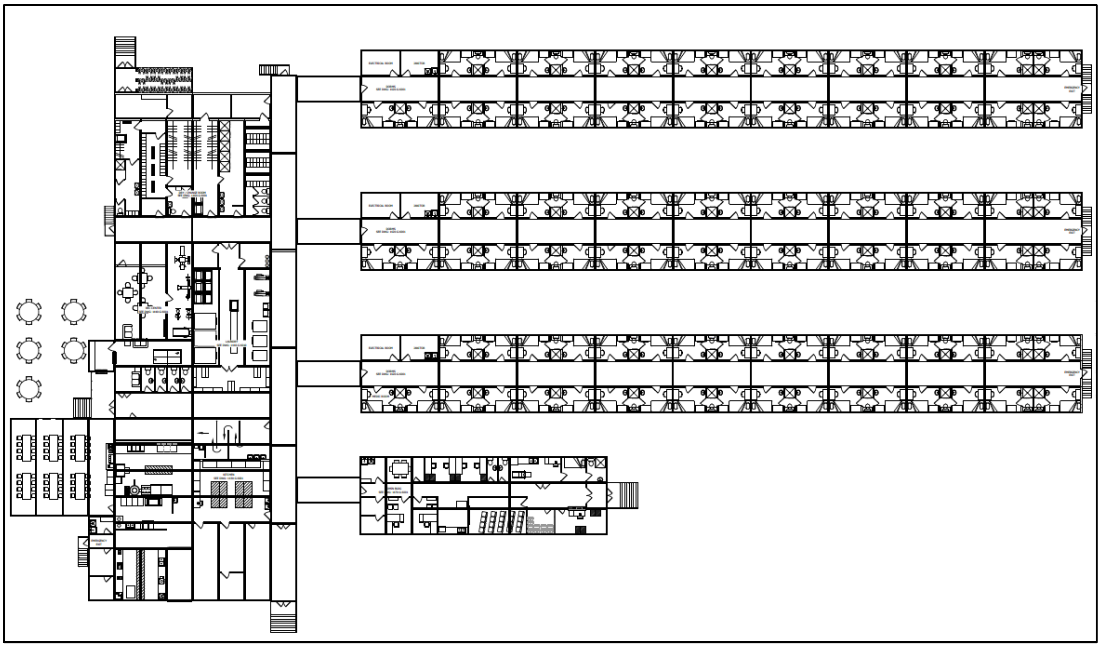


Figure 3: Proposed View of Camp Facilities and of Camp Complex

The Camp Complex is expected to consist of dormitories, a kitchen and lunchroom, a laundry unit, a mud room and a change room, as well as a recreation building and an administration office. The kitchen is protected by a dry type fire protection sprinkler system. The other facilities of the complex are protected with localized fire hose cabinets and localized fire extinguishers. The Camp Complex shown was designed with health and safety professionals to operate under pandemic conditions such as for the Covid19.

<u>Logistics support</u>

The Nalunaq project currently benefits from the jetty built during past operations. The jetty is overall in good condition and will be used going forward. The historical barge beach landing area will be upgraded to support the higher construction traffic in terms of equipment and materials freight.

<u>Fuel Storage</u>

The main fuel storage is expected to consist of a 400m^3 of storage capacity, located at coordinates: 60°19'1.4"N 44°55'33.247"W. See Figure 4 below:

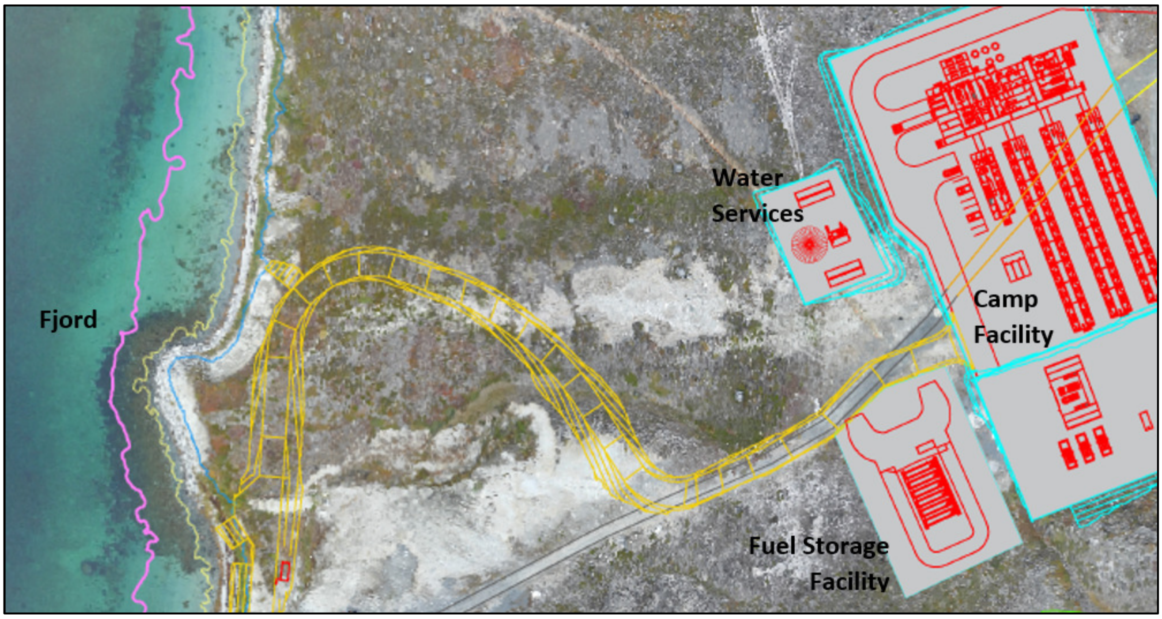


Figure 4: Preliminary location of the main fuel storage and beach landing.

The tanks are expected to be of the double wall type, whereby the primary containment of the tank is surrounded by a secondary containment consisting of an HDPE membrane and berms.

Fuel is expected to be dispatched from the main storage area to the mine area by a 20m^3 fuel truck. At the mine site, two 20 m^3 double wall tanks will be located near the process facility, servicing the process plant and the mine.

<u>Mine</u>

The mine will be redeveloped through an underground development program, which will then be succeeded by a ramp up of the mining activities. The aim of the underground development program is to upgrade the current mineral resource and to allow a sequential ramp-up of mining activities following the development program.

Initially, the inferred mineral resource in South Block and Target Block body will be accessed by ramping on vein and developing sublevels at every 20 meters.

The main advantage of the development on the vein is that it allows a faster exposure to a greater area, thus allowing resources to be converted to a greater certainty sooner. The Company will also implement an underground drilling program aimed at providing additional structural data of Main Vein in key areas, notably in Target Block and Mountain Block. Since these areas are more efficiently drilled from within the mine due to the topographical considerations, small footwall developments in waste will be undertaken to establish drilling stations.

Following the underground development program, mining activities will ramp-up using the same mining methodology as was used by the past operators, whereby sublevel development in ore using resue mining is followed by retreat long-hole stopping.For the LOM defined earlier (5 years), the following amount of waste and ore are expected to be generated.

Table 1: Production Plan

Production Plan

Year	Total	1	2	3	4	5
Total Waste Tonnes Mined	283,195	39,514	60,920	60,920	60,920	60,920
Total Ore Tonnes Mined	442,176	42,176	100,000	100,000	100,000	100,000
Total Tailings	428,911	40,911	97,000	97,000	97,000	97,000

Mine waste disposal will be maximized in the stopes and drifts left from previous operations, as well as in the new excavations which will be created during the LOM. In 2019, the Company undertook a LiDAR survey of the existing underground excavations, which was used to estimate the volume of voids left from the previous mining activities, and presented in Figure 5 below:

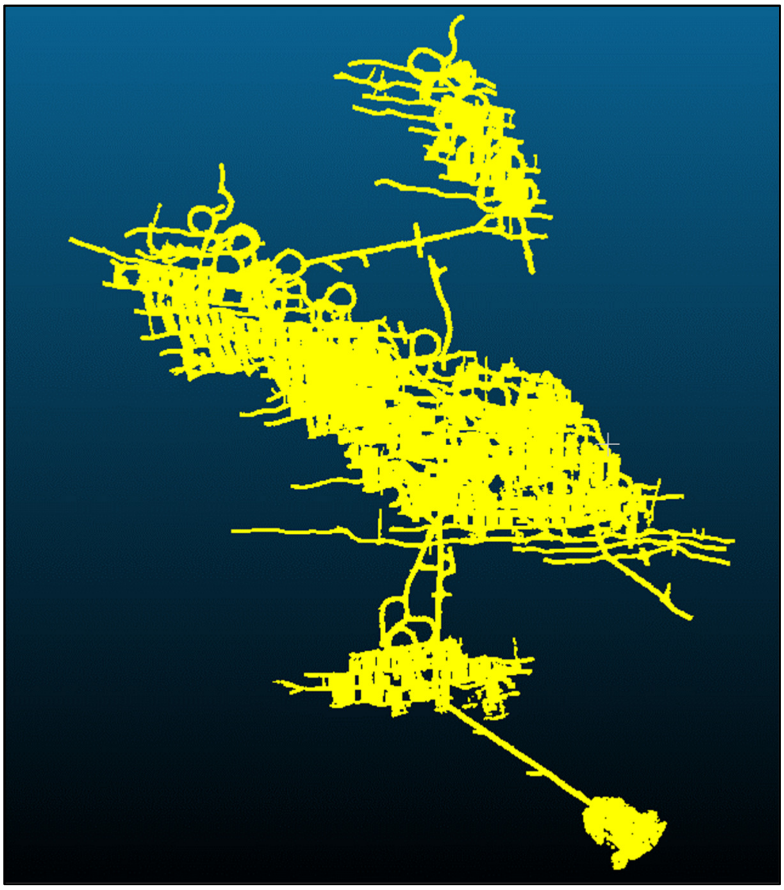


Figure 5: Underground Excavations LiDAR Survey

Table 2: Existing Volume of Stopes and Sublevels and Estimated Waste Storage Capacity

Area	Volume (m3)	Density (t/m3)	Waste (t)	Waste (t) - 75% Factor
Target Block	127,000	1.8	228,600	171,450
Mountain Block	15,000	1.8	27,000	20,250
South Block	52,500	1.8	94,500	70,875
New Excavations	280,500	1.8	504,900	378,675
Total	475,000		855,000	641,250

Table 2 above illustrates the total amount of waste estimated to be capable of being stored underground, using a density of 1.8 tonnes per cubic meter, and a disposal factor of 75%. The total volume of voids which are existing and expected during the LOM fully supports the disposal of mine waste inside of the mine.

It is possible that during operations waste could be trucked out of the underground mine for expanding pads, such as for the DTSF, as well as for crushing and maintaining roads as was previously done in the past operations.

In such cases, it is to note here that the rock at Nalunaq is not acid generating, therefore there is no risk of naturally occurring waste leaching. This was duly covered in the project's Feasibility Study in 2002 and supported by the yearly environmental monitoring program since the initiation of operations in 2004.

ROM ore will be trucked out of the mine through portal 300, where daily mining ore production stockpiles will be established. See below Figure 6.

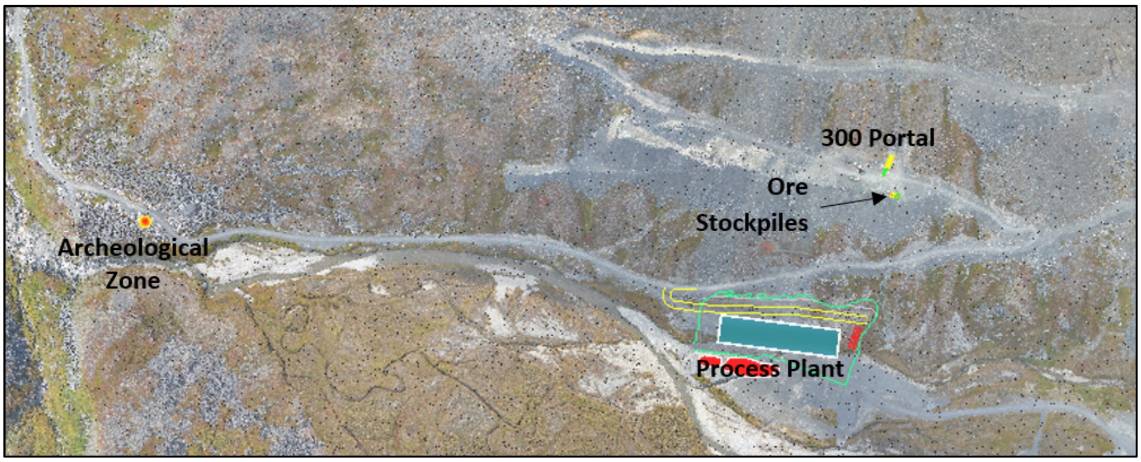


Figure 6: Proposed Daily Ore Stockpiles

During night shifts, an off-highway truck and a loader will re-handle the material near portal 300 and bring it down to the ore stockpiles around the processing plant. The underground mining fleet is expected to mainly consist of jumbos, scoops, underground mine trucks, production and exploration drills as well as other service vehicles. All vehicles are currently planned to be diesel powered, and the company is exploring the possibility of integrating battery powered equipment while in production.

An explosive storage will be set up at the historical location, at approximate coordinates 60°20'52.4" N 44°50'44.8"W. The storage will be monitored 24/7 by the site security department. Explosives will be mixed outside of the mine and dispatched to the blasting zones as required. Explosives management will be according to the Greenlandic Explosives Act. It is estimated the yearly consumption of explosives, ANFO, will be about 60,000 kg.

Mechanical workshops and a kitchen are expected to be established in the same locations as for past operations.

Power generation will be initially established close to the mining operations in the mine. Ventilation will also be implemented throughout the mine and use the existing systems of raises as well as new raises as development enters new zones. Water will be reticulated to specific demand points and recycled as much as possible. Compressed air systems will be localized at specific areas though skid mounted units where drilling is undertaken.

The underground equipment fleet and services will handle an operation of approximately 100,000 tons per annum (''tpa'').

<u>Process Plant</u>

A 300 (''tpd'') two stage crushing, milling gravity recovery and smelting plant will be implemented outside of the underground mine, at approximate coordinates 60°21'17.226" N 44°49'50.092"W . See Figure 7 below:

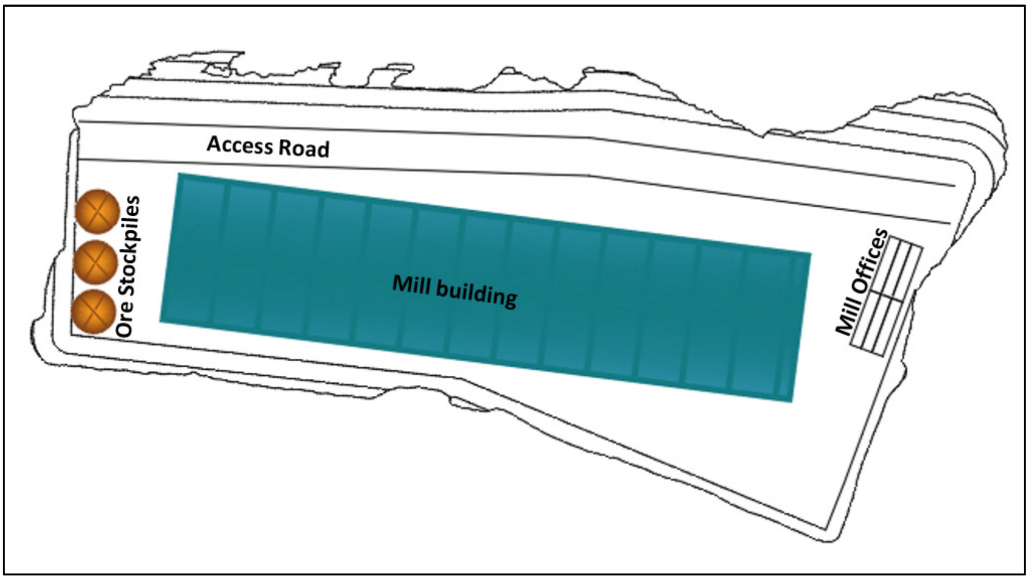


Figure 7: Proposed Layout of the Mill Building

The processing facility is expected to be covered by a dome building, with dust suppression systems, and include an office area to support operation activities. Ore from the mine stockpiled near the process plant will be fed through a crushing circuit consisting of a primary jaw crusher, a sizing screen and a secondary cone crusher. Ore will then be stockpiled and reclaimed upstream of the ball mill for milling, and grinded down to 76 microns (P80). Gravity concentrators will then be recovering the gold from the slurry out of the ball mill. The gravity concentrators will produce a concentrate which will be recovered, stored and fed through a concentrate upgrade circuit which will consist of shaking tables. The gold recovered from the shaking tables will then be smelted and poured into a doré and dispatched offsite by air for additional refining.

It is to note that the Company is considering implementing flotation to complement gravity recovery right away to produce a gold flotation concentrate at Nalunaq, which would be shipped out for further refining.

Waste Streams from processing will take the form of heavy metals captured through a scrubbing system at the gold room to support activities related to the smelting of gravity concentrate, and tailings from the processing facility in the form of filtered cake tailings which will be disposed of in a dedicated facility (see below section). Given that the mass pull of gold from the gravity and flotation circuit will be approximately 3%, 97% of the 100,000 tonnes per year feed to the process plant will be stored in that dedicated tailings facility. Therefore 97,000 tonnes of tailings will be produced each year (see Table 1) and filtered to reach a density of 1.9 t/m3, representing an approximate volume of 51,000m3.

Tailings

The fundamental objective of tailings storage facilities is to provide safe, stable, and economical storage of tailings, presenting negligible public health and safety risks and acceptably low social and environmental impacts during operation and post closure.

The EIA guidelines for Greenlandic mining projects stress the importance of addressing and handling the tailing issue in the EIA but do not require specific methodologies for storage and handling of tailings.

As part of the scoping process, an assessment of possible tailings management alternatives for the Nalunaq Gold Project has been undertaken. During this process, four potential alternatives have been assessed: 1) slurry/lake, 2) marine deposition, 3) storage inside the mine/mountain and 4) dry-stacking outside the mine.

The pre-screening evaluation of tailings management technologies has led to the conclusion that the preferred alternative is the Dry Tailings Storage ("DTS") on surface. The approach leading to this conclusion is summarized in the table below (Table 3).

Table 3: Potential impact from different tailing storage methodologies in the Nalunaq Gold Project Project (1 = Little or no impact/high accessibility, 2 = Moderate impact/moderate accessibility, 3 = Significant impact/low practical accessibility).

	Slurry/lake	Marine deposition	Inside mine	Dry-Stacked Tailings (DST)
Environmental Risks	3	3	2	1
Water Catchment	3	1	1	1
Footprint	3	3	1	2
Biodiversity	2	3	1	2
Settlements impact	2	3	1	1
Local use	2	3	1	1
Practical accessibility	3	3	2	1
Overall score	18	19	9	9

The possibility of marine deposition of process tailings was ruled out rapidly, as Nalunaq A/S does not see the viability of this approach on practical, environmental and economic grounds. Nalunaq A/S has as its primary focus the selection of a tailings management option representing an acceptable solution in terms of social acceptability.

The conventional tailings disposal methodology whereby tailings in the form of slurry is disposed in ponds surrounded by embankments was also ruled out as an option early on due to technical difficulty related to the topography in the area and due to the difficulty of sourcing small size fill materials for the embankment. Additionally, tailings dams require upkeep and maintenance, resulting in high continuous operating costs.

Nalunaq A/S also investigated the potential to dispose of tailings in the form of slurry in the underground mine, as was previously done by Angel Mining. Given that South Block is still a strategic region for mining and exploration, flooding this area with slurry is not desirable. As for using the stopes in Target Block for slurry disposal, there are too many operational risks associated with the construction of the bulkheads required to isolate the ramp access to Target Block and Mountain Block.

Dry stacking, on the other hand, is considered an appropriate approach for the scale of the project. By dewatering and filtering the tailings, Nalunaq A/S will increase the dry tailings density close to 1.9 t/m^3, approximately 50% higher than than slurry disposal, or similarly, dry stacked tailings takes 50% less space than slurry tailings.

Additionally, DTS disposal provide significantly enhanced safety and other environmental benefits to the other surface tailings storage options – some of which include:

- Significant safety improvement with the risk of dam failure and tailings runout being eliminated. DTS facilities are also suitable in areas where there is limited construction material to develop a conventional retention impoundment.
- Reduced water requirements principally achieved by recycling process water and near elimination of water losses through seepage and/or evaporation.
- The risk of contamination of aquatic environment through seepage or leakage is significantly reduced.
- Dry Tailings can be used in high variability topographical settings;

- Significantly better public perceptions.
- Easier to close and rehabilitate.

Nalunaq A/S, with its key advisors, have identified three potential areas to establish a Dry Tailings Stacking Facility ("DTSF"), as illustrated in Figure 8 below:

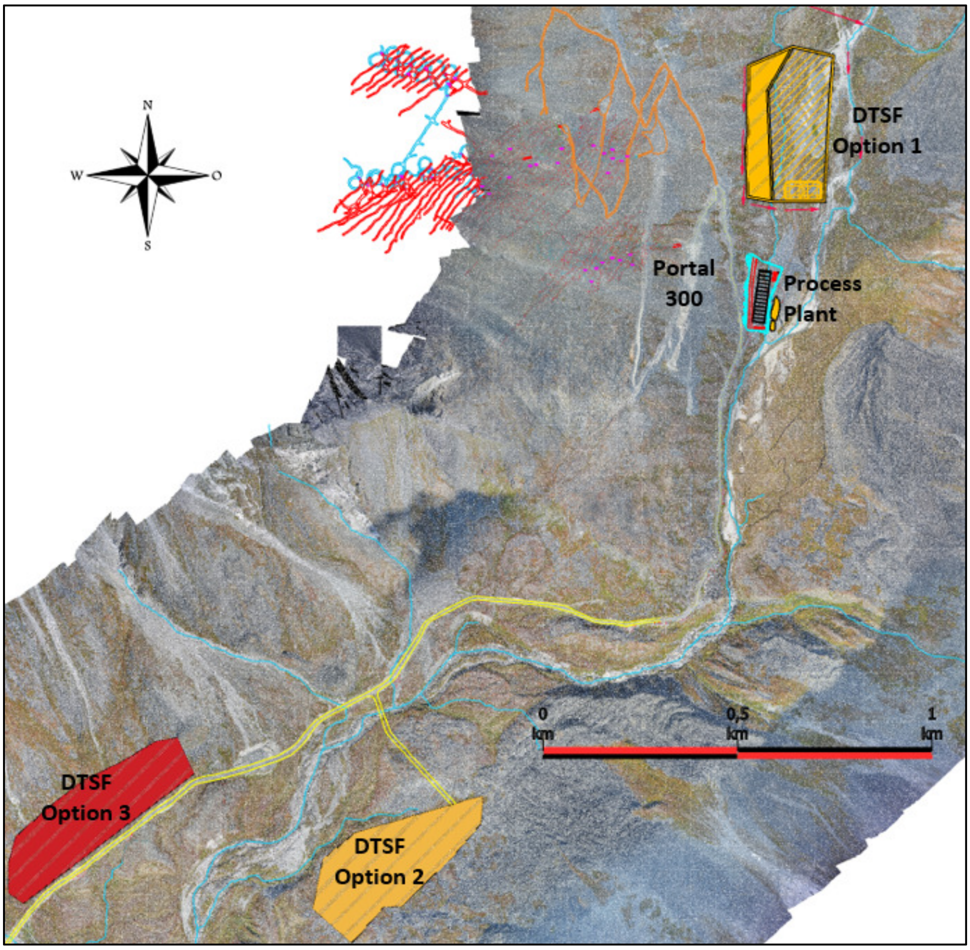


Figure 8: Options for the DTSF

The coordinates of the 3 options are:

- Option 1: 60°21'31.739"N 44°49'45.43"W
- Option 2: 60°20'30.018"N 44°50'52.852"W
- Option 3: 60°20'33.935"N 44°51'42.163"W

The preferred option selected is Option 1 as it is closer to the process plant and is less risky on a health and safety perspective than the other 2 options which would require much longer hauling distances and also would have heavier traffic implications on the main access road (7 more trucks per day).

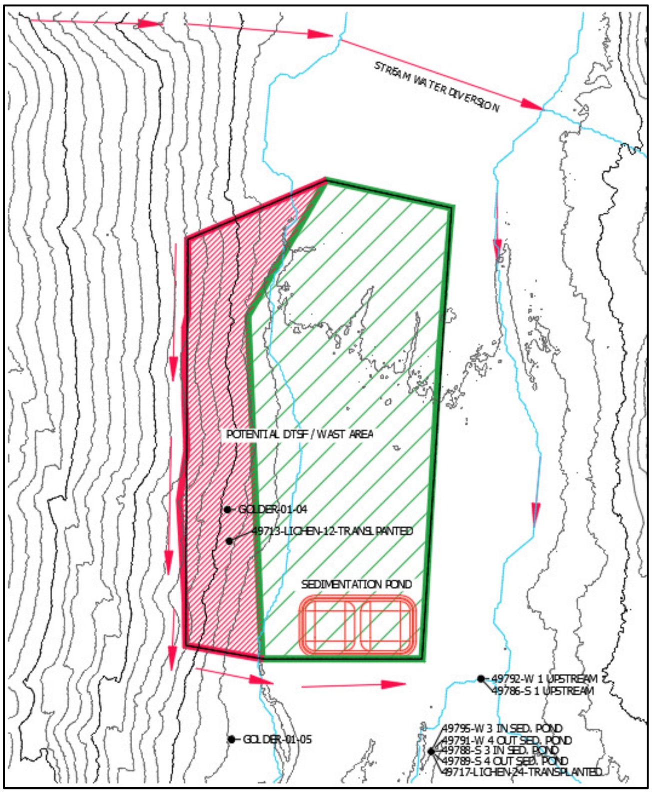


Figure 9: Preliminary DTSF layout with cross-section

The favored DTSF option is located in an area that has been duly surveyed in the past, especially on the geotechnical perspective. Additionally, the historical monitoring stations are mostly located outside of the expected footprint of the DTSF, as illustrated in Figure 9.

The preferred option has an approximate surface area of 60,000 m^2. This will be able to host multiple years of operations and will be able to be built and established over time to match the operation requirements of the project.

The design of the DTSF will be subject to many constraints, which are currently being quantified in an engineering mandate with Golder. The following parameters are currently being investigated at a test facility:

- Geochemical analysis of the tailings;
- Geotechnical testwork on the tailings;
- Water management and flood risk analysis/modelling; and
- Metal leaching and acid generation potential

The results of the testing will be used in the detailed design of the DTSF and for water management.

The tailings will be trucked from the dry filtering area at the process plant and hauled to the DTSF. The material will be laid down with a dozer and compacted by a vibratory soil compactor. The placing methodology of the dry filter cakes in the DTSF will follow the experience of such operations in similar conditions in the Canadian Arctic. The thickness of each layer will depend on the geotechnical parameters of the tailings, but it is anticipated that the raising rate of the tailings layers in the DTSF will be approximately between 1 to 3 meters high.

Another advantage of a DTSF is that the rehabilitation scheme can be undertaken progressively and in parallel with the operations as the tailings are stacked over time. Erosion and seepage water control can be effectively managed through a proper cover system. This strategy is currently under review with a third-party expert and will be proposed in the EIA report.

Water & Effluent Management

It is to note that the water and effluent management plan described below was designed to fully integrate the past environmental monitoring stations for the purpose of monitoring continuity.

At the camp, fresh water from the Saqaa fjord will be pumped to raw water tanks, upstream of a potable water treatment system. Also, a water storage capacity will be established for fire protection purposes around the Camp Facilities. At the Camp Facilities, all of the liquid waste generated by human activities will be handled by the sewage treatment unit. The effluent of the sewage treatment will be channeled to the fjord. Human liquid waste from the mining and processing activities will be pumped in a vacuum truck and trucked to the Camp Facilities' sewage treatment plant. The potable water treatment plant will also produce an effluent from the reverse osmosis separation to be discharged to the fjord. See Figure 10 for identifying the potential points of discharge of the Camp Facilities Effluents:

Figure 10: Potential points of discharge of the Camp Facilities Effluents.

The mine water supply is expected to be established by collecting water in sumps near the consumption areas in the developing and mining areas. Water recovery and recycling will be optimized to reduce the requirement of pumping. Water consumption for the development and mining in South Block will be integrated in the South Block dewatering scheme.

The process plant will be fed with raw water by borehole pumps in the valley floor, as past geotechnical drilling showed that water level is quite shallow under the valley surface. The dewatering scheme for South Block will be developed to provide additional water for the process plant. Tailings filtering operations will allow to implement a scheme to recycle process water requirements.

Water management around the DTSF will be very important, specifically regarding the management of flooding in the valley during the snow melting season. First, upstream of the valley, a water diversion channel is suggested to be excavated to divert water from rain and snowfall from flowing at the foot of the Nalunaq Mountain to the other side of the valley, towards Ship Mountain. Other channels will be implemented on the mountain surface to divert water towards the aforementioned water diversion channel, or towards the historical flow line towards the historical sedimentation and clean water pond.

The water management scheme inside the DTSF will be implemented through the integration of water sedimentation ponds. See Figure 11.

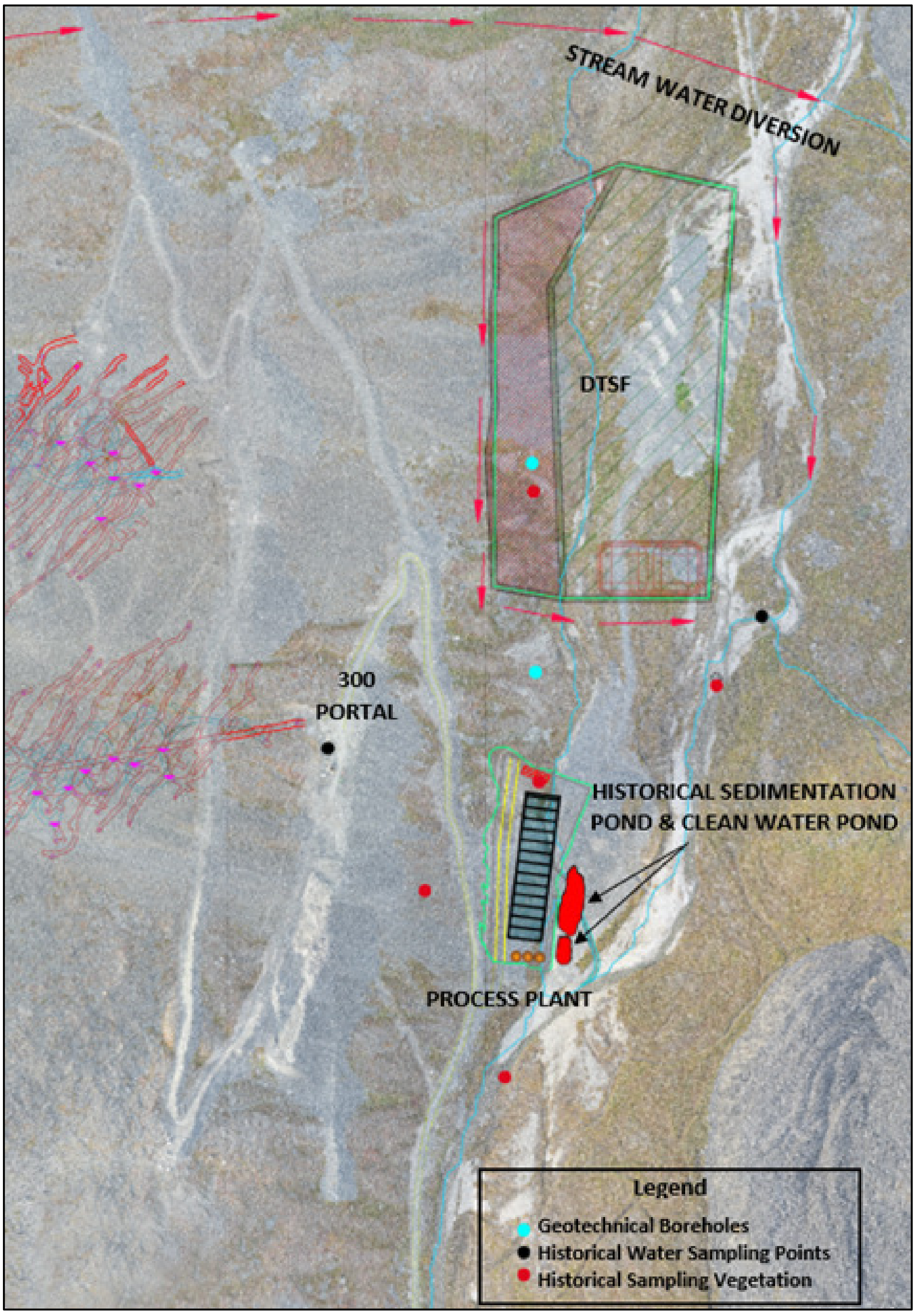


Figure 11: Proposed location of the DTSF

The purpose of this sedimentation pond inside the DTSF will be to optimize the sedimentation of fine particles before they are released to the environment. Water from the sedimentation pond will overflow towards the river bed, or could potentially be partly reclaimed for process water requirements.

Water percolating from the mine and waste dumps is expected to be directed towards the historical sedimentation pond. It is worth noting that the Nalunaq waste does not exhibit acid generating behavior, and that leaching of heavy metals has not been reported to be a concern since the start of operations at Nalunaq in 2004.

The conceptual water management described above will be developed in greater detail in the EIA.

Power Generation

Electrical power to the project's facilities will be supported by diesel generating sets as islanded power plants. At the camp, a power generation facility with a peak power demand of approximately 450kW will be implemented, whereas for the process plant the power generation facility will be designed for a peak power of approximately 1,500kW. The mine will be supported by localized power generators in the zones of activities.

Nalunaq A/S is currently finalizing an energy efficiency study with a third-party expert. The aim will be to identify potential infrastructures which could increase the overall project efficiency. Heating requirements is of importance for the project, and as such is an aspect of the project which the company is currently working on optimizing. Additionally, the company has also initiated a study on assessing renewable energy potential at the Nalunaq project site in the form of wind and solar power. Nalunaq A/S is also planning to undertake a review of the site hydrology to assess the potential of implementing small scale hydro-power in the future.

Mine Closure and Rehabilitation Plan

Mine closure can take place when either present resources are exhausted and no new resources are available, or due to other unexpected developments such as changes in project or global economics.

An existing Mine Closure Plan (MCP) has been agreed by the MLSA on June 16, 2020 and an escrow account of approximately DKK 2 million is currently in place to deal with the closure of the project. The Company aims to submit an updated closure plan for approval in accordance with Section 43 of the Mineral Resources Act before the end of 2020.

The MCP will be regularly updated as the project evolves, during operations and prior and up to closure, and the amount in the escrow account will be increased as required to cover the calculated increase in the closure budget. The MCP will set out detailed measures for closure and rehabilitation of the site, and consider long term management and monitoring requirements together with the immediate requirements to protect the environment from pollution and damage due to the effects of the closure.

The mine closure plan will contain proposals for the rehabilitation of the site on closure so that the final cleared site will have a minimal visual impact. The detailed restoration and rehabilitation proposals will form a part of the ongoing update of the MCP as the project evolves and all options will be discussed in consultation with the stakeholders and the local community.

Post-Closure Environmental Monitoring

When the Nalunaq Mine closed in 2013, an environmental monitoring programme was agreed between EAMRA and DCE. It is anticipated that a very similar programme and corresponding budget will be agreed to cover environmental monitoring for at least three years after closure of the Mine.

Comparison to past Operations under Angel Mining PLC

The main differences between the planned operation under Nalunaq A/S and that of Angel Mining is in the location of the main camp, the location of the frontend processing circuits, namely the crushing, grinding and gravity recovery circuits only, and the tailings management methodology.

The Camp Facilities will be located, as discussed earlier, near the fjord. Under Angel Mining, it was located outside of the Mine Area, where Nalunaq A/S is expecting to build its DTSF. The area in which the new Camp Facilities will be placed is already influenced by previous operations, notably the beach landing, the jetty, the fuel storage area and the current exploration camp. There are no particular nature protection interests in the area, and the additional footprint resulting from the new mine project is expected to be very limited.

With respect to the processing facilities, Nalunaq A/S intends to locate the crushing, grinding, gravity recovery and tailings filtering circuits where the old workshop was located, under a dome building. The building will be designed to effectively manage dust control. Taking those circuits out of the mine will allow Nalunaq A/S a better grade control of material fed to the mill, and ultimately optimize plant performance and operation scalability.

Other differences to consider is that part of the mine waste will be orderly stockpiled in established waste dumps, compared with the random disposal in the past out of the various portals. A portion of the waste will also be kept inside the underground mine and stored in existing voids from past operations. The waste dumps to be located outside will also constitute aggregate material for Nalunaq A/S.

As the new processing facility will be constructed at the valley floor near the mine, some extra transport to and from the camp and the mining area is expected, compared to the Angel Mining project, mostly involving personnel transportation. This is likely to result in an increased disturbance and impact from dust along the road between the new main camp and the mine area. Therefore, it is expected that special dust reduction measures will be required in order to minimize impact from dust on the habitats along the main road.

Supply Chain during construction and operations

Construction

Most of the cargo during construction will be delivered in bulk and in containers. Given the size of the cargo to be received, the beach landing area which was used in the past operations will be re-furbished and re-used. During construction, approximately 4,200m^3 of bulk cargo and 4,500m^3 of containerized cargo will be delivered to site. Depending on the shipment size and cargo consolidation methodology in Greenland, approximately 180 to 200 Twenty-foot equivalent units (“TEU”) will be sent to Nalunaq during the construction period. The strategy behind the logistics of these operations will be to consolidate cargo for international supplies and optimized shipment to Greenland, where cargo would then be barged to site. It is estimated that approximately 40-50 trips of barges from Nanortalik or Qaqortoq will be carried out to bring the cargo to site during construction.

Operations

During operations, a much smaller amount of cargo is expected. Most of the cargo will consist of consumables for the mining and processing operations. We expect that the cargo will be consolidated in South Greenland and barged to site on a regular basis.

It is roughly estimated at this stage that approximately 1 barge a week will service the project during operations. According to the marine traffic information, the Saqaa Fjord is currently rarely visited by vessels. It is expected that the increase in number of vessels and operations resulting from the project will be very limited.

Concerns regarding marine mammals will be addressed in the EIA, but due to the limited number of operations, we do not expect additional studies of marine mammals in the area to be required (Figure 12).

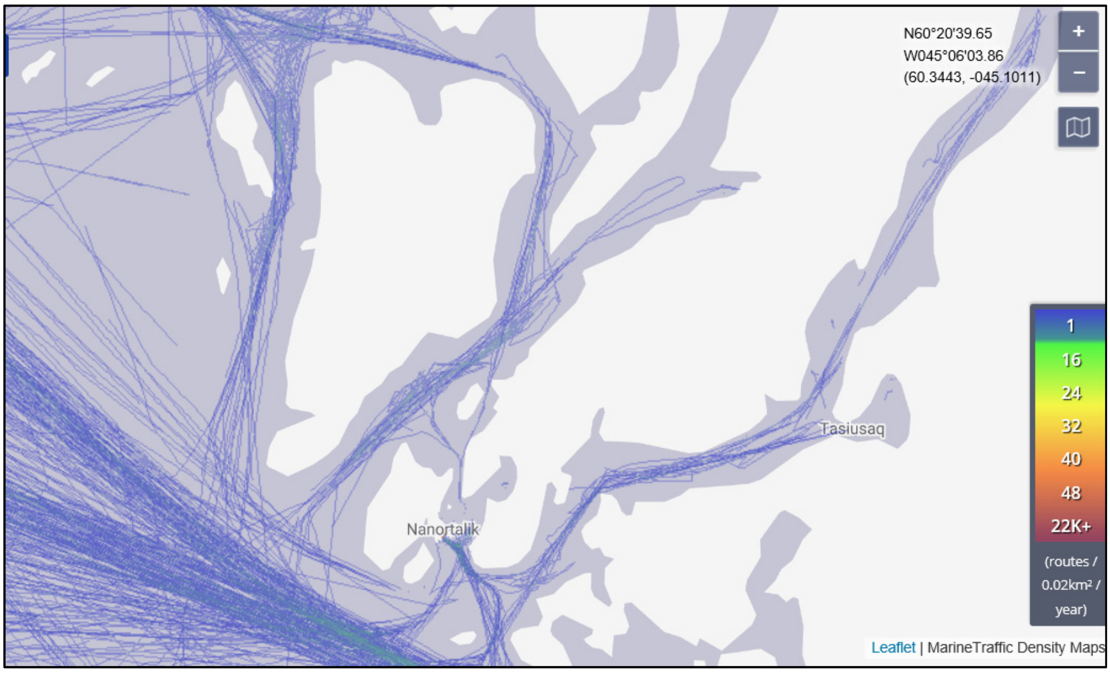


Figure 12: Density of vessels in 2016 and 2017 (source: www.marinetraffic.com).

Social issues

Employment

The project will employ approx. 70-80 workers during construction and 150 during operations. Construction and operations personnel will consist of a combination of locals and expatriates. Overall, the challenge will be the availability of local skilled labor with the background of in-country infrastructures investment and other exploration and mining activities.

During project execution, a construction management team mostly consisting of expatriates will lead a work force of teams consisting 50% expats and 50% locals. It is the company's desire to keep the ratio of locals to expats as high as possible, which will be dictated by the availability of skilled labor in a competitive labor environment.

Construction activities have been estimated for approximately 164,000 manhours for a period of 14 months. Preproduction activities, not including underground development, account for approximately 94,000 manhours. Those activities are mostly supported by geologists, machine operators, maintenance crew as well as camp staff. During construction and pre-production, approximately 1,000 rotations are expected. During operations, it is estimated that up to 150 people will be employed as direct employees of contractors at the Nalunaq Operations, including the staff being offsite in rotation.

Personnel Travel

Expatriates will be flown into Greenland on a rotation basis. They will be transported directly to site from Narsarssuaq.

Locals will be travelling to site, mainly from Nanortalik and Qaqortoq, by sea. The company may subcontract a local party or operate its own vessel to bring its employees from the consolidation point in Nanortalik.

4. The Study Area

4.1 Location

The geographical area covered by the scoping is identical to the one that will be covered by the EIA. This includes the mine area and a surrounding area, including existing roads and harbour facilities. This area is called the "Study area" and is defined as the geographical area where a recognizable or potential impact can be expected in terms of disturbances of the local environment (noise, dust, water pollution, etc.).

Also, the marine area close to the mine area is included in the scoping report and will be addressed in more detail in the EIA (Figure 13).

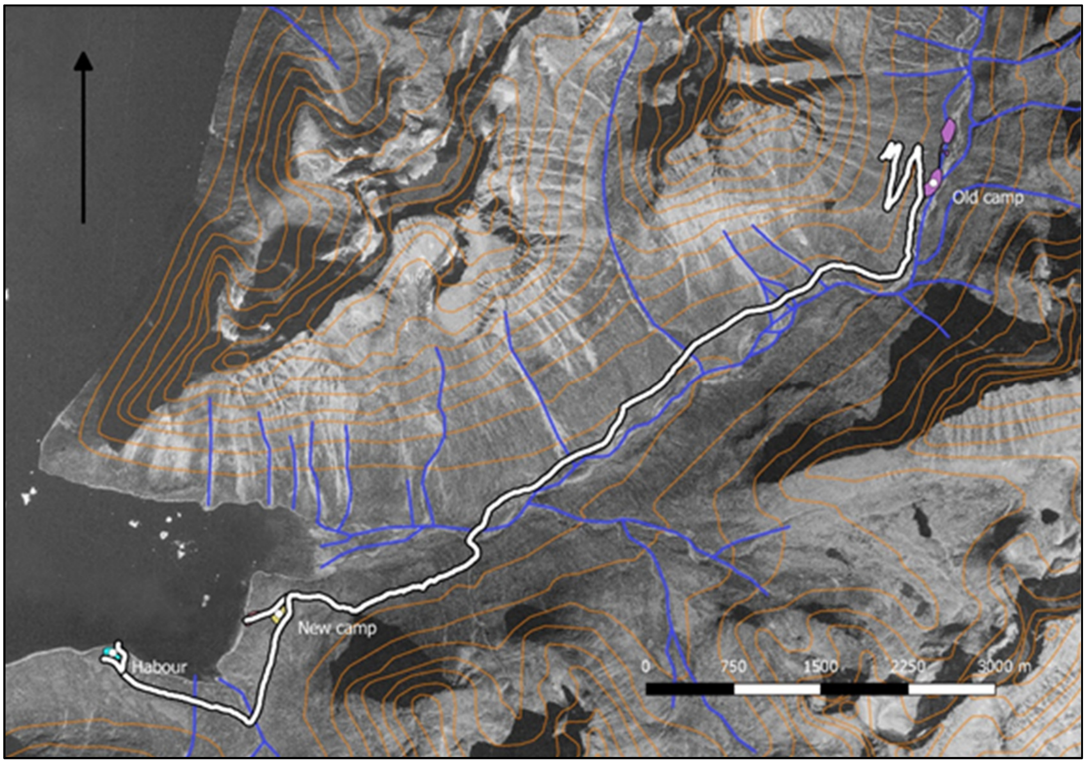


Figure 13: The Study area of the scoping (and EIA).

4.2 Climate

The Greenlandic climate is arctic to sub-arctic with cool summers and very cold winters. Mean temperatures do not exceed 10°C in the warmest summer months. In the southern part of the country and the innermost parts of the long fjords, the temperature can, however, rise to more than 20°C in June, July or August (Table 4).

Nanortalik has an average of 900 mm of rain a year. Precipitation at the mine is almost double that of the town, with slightly lower air temperatures.

The climate at Nalunaq tends to show an average annual temperature just above 1°C, with July the warmest month at 10°C and February the coldest at -9°C. Daily maxima and minima may be considerably higher or lower than this respectively.

The two dominant wind directions are north and south each representing around 20 - 25% of the time. This is due to the funelling effect of the north-south orientated Kirkespir Valley. Calm conditions occur around 20% of the time. A mountain valley phenomenon, whereby differential warming of air masses causes winds to blow down the valley sides, may give rise to strong gusts, possibly originating from all directions.

The dominant persistent local wind system is the katabatic system generated by the Greenland icecap, in which the density difference between cold, dense air at the top of the icecap and the warmer, lighter air at sea level drives a downward flow of air through the fjords. The temperature of this air will increase as it descends to sea level because of the greater pressure there under the Foehn effect. If the incoming air has warmed to the temperature of the air already present, then minimal outflow occurs. However, if the air coming off the icecap is still cooler and denser than that over the fjord, strong outflows can develop.

Table 4: Average monthly temperature and precipitation (1987-2016) in the village Tasiusaq in Kujalleq Municipality c. 20 km southwest of the Nalunaq Goldmine (data from https://climatecharts.net/).

	Jan	Feb.	Mar	Apr	May	Jun
Mean temperature °C	-6.1	-6.5	-5.7	-2.2	1.8	4.7
Mean precipitation mm	160.0	148.0	129.3	116.1	105.9	96.7

	Jul	Aug.	Sep.	Oct.	Nov.	Dec.
Mean temperature °C	6.9	6.8	3.8	-0.1	-3.2	-5.2
Mean precipitation mm	91.0	118.6	163.8	148.9	156.3	128.3

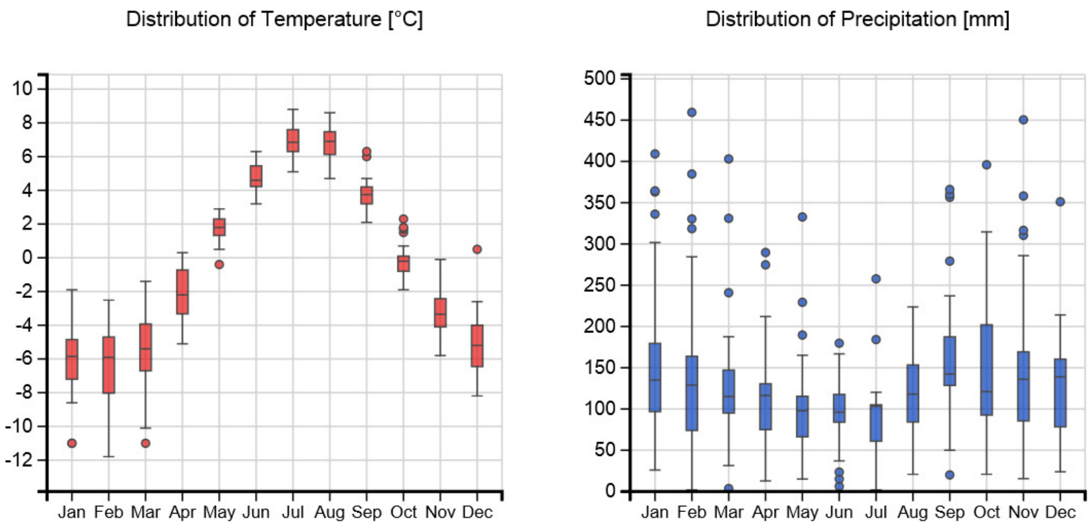


Figure 14: Average monthly temperature and precipitation (1987-2016) in Tasiusaq c. 20 km southwest of the Nalunaq Gold Project (from https://climatecharts.net/).

4.3 Local use

The Nalunaq Gold Project lies within the area of the Municipality of Kujalleq, and Nanortalik is the nearest town. Nanortalik is the tenth largest town in Greenland and is also its most southerly, being located about 100 km north of Uummannarsuaq (Cape Farewell), the southern tip of Greenland.

There are a number of smaller settlements in the Nanortalik area of which the more important are Aappilattoq, Narsaq Kujalleq (Narsarmijit), Tasiusaq, Ammassivik, and Alluitsup Paa together with others with less than 20 inhabitants each.

The primary occupations in Nanortalik are fishing, service and administration. The district around Nanortalik is home to 2,200 people distributed between the town itself, five settlements and several sheep holding stations.

Nanortalik has little productive trade. There are no factories and no largescale fishing activities. Small-scale fishing, crab fishing, seal and seabird hunting and tourism provide most of the locally produced revenue. The main harbour is home to a few small fishing boats and there is a marina type harbour in the old town which provides moorings for a number of private craft which are used for transport, fishing hunting and recreation purposes. Shops are limited but comprise two large and several smaller supermarkets, domestic and electrical goods, clothing and smaller general shops and cafes.

Nanortalik is served by scheduled helicopter services through Air Greenland which use the Nanortalik Heliport. The services currently link Nanortalik with the towns of Qaqortoq, Narsaq, Alliutsup paa and the international airport at Narsarsuaq.

The main employment in the town is provided by public sector in administration of the Kommune and Government services and in publicly owned companies. At present, tourism to the area forms a minor and irregular but significant part of Nanortalik 's economic life, and cruise ships sometimes of quite large size, visit Nanortalik on a regular basis.

Land use in the Municipality of Kujalleq is unique in Greenland in that quite extensive rearing of sheep is achieved together with some cattle and reindeer husbandry. It is also possible to grow vegetables and produce grass silage as animal feed. Sea fishing is one of the major local activities.

Gathering of mussels, seaweed, sea urchins, berries, herbs etc. is still a supplement to the daily household in many families in Nanortalik (Glahder 2001).

There are only few major hunting or fishing interests in or near the study site covered by the scoping report. However, the Kirkespir Valley is to some extent used by local people from Nanortalik and surrounding settlements for gathering of berries and fungi for private households. It has been reported that seals and other marine mammals have been hunted in the Saqqaa Fjord, and a few local fishermen also put up their nets in the fjord.

It is expected that the reopening of the mine only to a very limited extent will influence local peoples' possibilities for fishing, hunting, berry and fungi- collecting in the study area.

Based on experiences from the previous operations it is expected that the Nalunaq Project will be a considerable major employer that will contribute to the Greenlandic and local economy.

A previous study (Glahder 2001) has shown that the most important natural resources in terms of local use in the vicinity of the Nalunaq project site are: the Arctic char populations living in the three rivers running to the Saqqaa Fjord and in the two fjord areas (i.e. Kirkespir Bay and Kangikitsoq) which are protected until 2003 from pound net fishing; the Snow crab population in the Saqqaa Fjord, possibly with a reasonable size and with a good quality; the spawning Capelin populations in the two bay areas of Kirkespir and Kangikitsoq rivers; flocks of Eiders and Brünnich's guillemots wintering in Saqqaa and adjacent fjords (Figure 15).

However, none of the above-mentioned species or their populations in the Saqqaa area seems to be unique to the Nanortalik district.

The Arctic char population in the Kirkespir River and Bay is probably and potentially the most vulnerable animal population in the Saqqaa area because of its proximity to the Nalunaq Gold Project site.

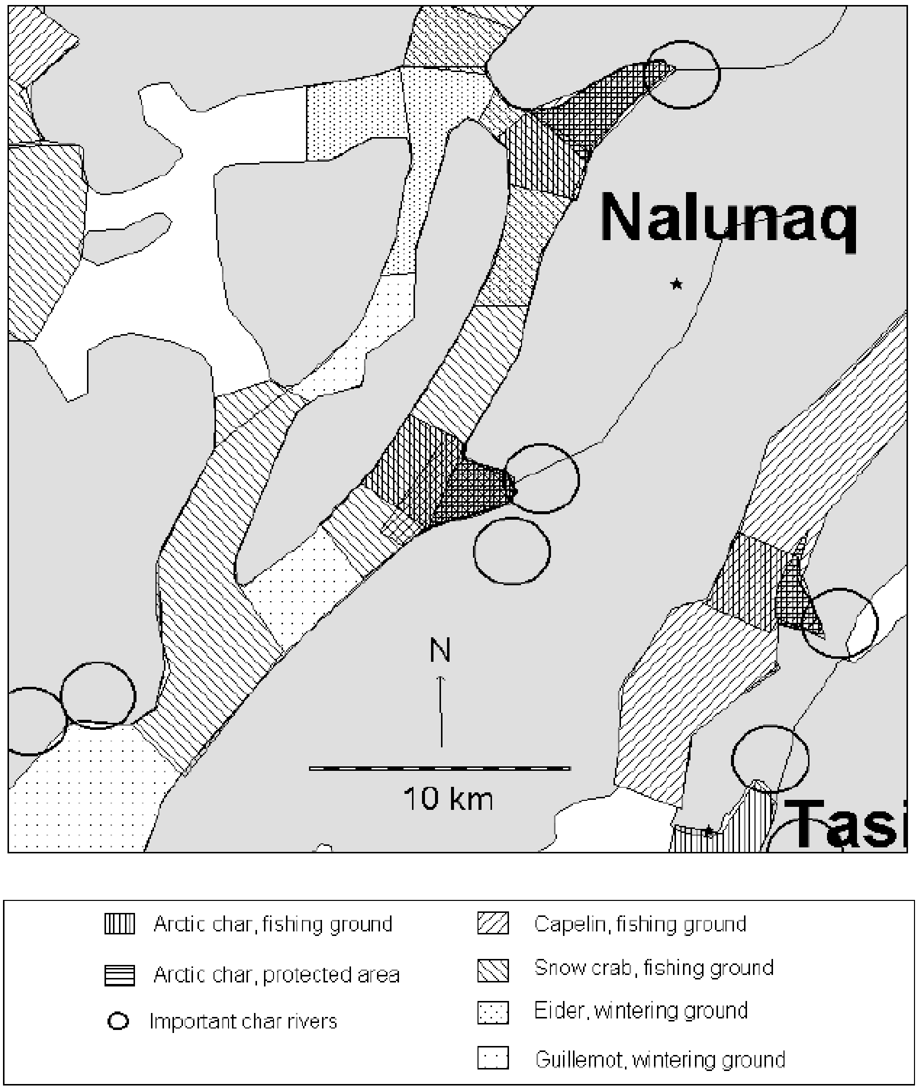


Figure 15: Fishing and hunting grounds in the Nalunaq area (Glahder 2001).

4.4 Environment

This chapter provides a brief description of the natural environment of the Study area. Focus is on species and habitats that can potentially be impacted by the proposed project activities.

4.4.1 Terrestrial Environment

A preliminary survey of the natural conditions in the project area in Kirkespirdalen indicates that the vegetation in the project area is dominated by terrestrial habitats and plant species that are common and widespread in South Greenland (Orbicon 2019).

The presence and distribution of native vegetation in south Greenland is in general determined by temperature and precipitation, both of which follow oceanic-inland/continental and altitude gradients.

Such natural gradients are obvious when moving inland from the outlet of the Kirkespir River through the valley or moving from lower lying fens along the river to higher altitudes in the mountains. Also, yearly changes in the length of snow cover, water supply, temperature, soil type and wind exposure may further limit or influence the distribution of plant communities. In the outer fjord area, vegetation growth is also influenced by cold currents, drift ice, salt spray and wind.

In general, dense birch and willow scrubs are common below 200 m altitude, especially on south-facing exposures at the head of the fjord and inland.

During the site visit in August 2019, the following (major) vegetation types were found in the project area.

Dwarf-scrub heath. The dominant vegetation type in the project area is dwarf-shrub heath made up mainly by Northern Willow *Salix glauca*, Glandular Birch *Betula glandulosa*, Bog Bilberry *Vaccinium uliginosum* and Crowberry *Empetrum hermaphroditum*.The heathland is generally relatively dry but also contains humid patches with grasses and herbs, especially in the upper valley.

Near the coast the heathland also includes areas with a character of fell-fields, i.e. wind-swept sand and gravel plains with only few plants, including Sea Mayweed and different species of lichens. The mining camp, the camp itself and the nearest surroundings being almost completely without vegetation, is situated in this type of heathland.

Most of the vegetation in the project area consists of dwarf-scrub heath.

Stream surrounding and gorges. A species rich flora is found along the small streams that penetrate the dry heathland. Such streams are often temporary, as they may originate from snow beds along the foothills of the mountains along the valley. Many of the same species of dwarf scrubs that are also growing in the heathland, are growing along such streams. The vegetation is often quite lush with many species of grasses, sedges and flowering plants.

Riverbeds and -outlets. Two large rivers penetrate the project area. The largest river is Kirkespir River/Quingârssûp River that runs through the entire valley and has its outlet in the fjord c. 500 metres northeast of the new camp facilities. Additionally, the Arpatsivîp River has its outlet between the harbour area and the camp, ca. 400 metres southwest of the camp facilities. There are no permanent freshwater lakes in the project area.

Fens are found on sites with high groundwater level or where surface water is accumulated on rocky ground. They are found throughout the project area, as part of the predominating heathland or near the riverbeds of Kirkespir River, especially in the lower valley. Patches with fen are also found near the harbour. Fens and bogs also cover parts of the coastal plains east of the outlet of Quingârssûp River and the riverbanks between the old abandoned mining camp and the location of the new one. These plant communities are dominated by grasses, sedges, cotton-grasses and different species of *Sphagnum* mosses.

Rocks and boulder fields
This habitat consists of bare rocks, mountain slopes and boulder fields with only little or no vegetation at all – the lichens being the most dominating element.

The plant communities in the Kirkespir Valley are typical for those found throughout the Nanortalik region and South Greenland in general. No species known to be rare, threatened or endangered in Greenland was recorded during the 2019 site visit (Orbicon 2019).

The birch forests near Nanortalik has been identified as sites with a high diversity in plant species (Christensen et al. 2016).

In addition, there is a small community of the Small-White Orchid *Leucorchis albida*, which is the commonest Greenland orchid, in the Upper Valley, which will not be disturbed by the mine's operations (Angel Mining 2009).

As the mining project will impound new areas only to a very limited extent, no major impacts on the local flora and habitats is expected from the project.

An additional site visit during the EIA process will improve the knowledge of the natural conditions in the study area and qualify the site description. However, it is not expected that actual botanical surveys in the project area are required in order to elaborate the EIA.

4.4.2 Other observations

Mammals
There is no knowledge of species of mammals that are rare or threatened in the area. All species are relatively common throughout southern Greenland, and no major impacts from the project on local populations of land-living mammals are expected.

Based on existing information about the distribution of terrestrial mammals in Greenland only Arctic Fox *Alopex lagopus* and Arctic Hare *Lepus arcticus* are expected to be common and widely distributed in the study area. Polar Bears *Ursus maritimus* are regular visitors to the Kujalleq municipality, where bears or their footprints are seen most often during April and May. At this time of the year the Polar bears are transported to the district with the Polar ice (Glahder 2001).

Muskox *Ovibos moshatus* was introduced in the area in 2014, as 19 Muskox were taken from Ivittuut and translocated farther south to Nanortalik. Observations in 2017 and 2018 also included calves, but the population is still low and off limits for hunting (https://natur.gl/arter/moskusokse/?lang=en, Christensen et al. 2016).

No sites of major importance for terrestrial mammals have been identified within the study area. No significant conflicts between mammals and project activities are expected, and it is not expected that additional surveys focusing on terrestrial mammals are required in order to elaborate the EIA.

Birds
Due to the time of the site visit in late August 2019, only relatively few bird species were observed in the project area. However, based on existing knowledge of birds' distribution in Greenland, at least 25 species of birds are expected to breed, feed or roost in or near the project area. Additionally, part of the sea off South Greenland is of importance to wintering sea birds (Boertmann *et al*. 2004).

The land-living birds in the Kirkespir Valley mainly include species that are generally common and widespread in southern Greenland. There are no species that are rare or threatened and there are no migratory species that are particular to the area or specially protected breeding birds.

The terrestrial bird fauna includes common species of passerines as Northern Wheatear *Oenanthe oenanthe*, Common Redpoll *Carduelis flammea*, Lapland Bunting *Calcarius lapponicus* and Snow Bunting *Plectrophenax nivalis*. Also, Raven *Corvus corax* and Rock Ptarmigan *Lagopus mutus* are common.

Peregrine Falcon *Falco peregrinus* and White-tailed Eagle *Haliaetus albicilla*, the latter being redlisted in Greenland in 2018 as Vulnerable (https://natur.gl/raadgivning/roedliste/1-roedliste/), have been observed in the study area.

There are no indications of breeding White-tailed Eagles in the study area, but it is known that the coastline between Sisimiut and Nanortalik holds the highest concentration of breeding White-tailed Eagles in Greenland (Kampp & Wille 1990).

Fish
Arctic Char *Salvelinus alpinus* was observed in the Kirkespir River in the lower valley.

Fungi and lichens
Although not systematically searched for, a few species of fungi and lichens was observed in the project area, including Arctic Bolete *Leccinum rotundifoliae*. However, it is certain that more species occur. A great variety of lichens occur in the area. Crinkled Snow Lichen *Flavocetraria nivalis* and Reindeer Lichen *Cladonia arbuscala* among others are abundant.

4.5 Marine environment

The marine environment of the study area includes the tidal, ice-free Saqqaa Fjord that joins the Søndre Sermilik Fjord, which together with Tasermiut Fjord form two deep 60-80 km NE trending fjords that extend from the ocean of the Davis Strait (in the southwest) to the Greenland ice cap (in the northeast).

Marine mammals
At least c. 11 species of whales and seals, are potentially present off the coast of South Greenland and may potentially also occur in or near the study site.

Harbour Seal *Phoca vitulina*
The main distribution in Greenland of this non-abundant species is the West coast south of Sisimiut (67°N). Harbour seals are rare in the Kujalleq municipality. They are encountered on the islands Nordlige Kitsissut and in the mouth of Tasermiut Fjord West of Tasiusaq (Glahder 2001, Rosing-Asvid 2010).

Ringed seal *Phoca hispida*
In Greenland the Ringed Seal is widely distributed, but few in number along the southwestern coastline and in North Greenland. Ringed Seals are found in low numbers throughout the municipality but not in any large numbers. They are hunted at the heads of the fjords of Tasermiut and Sdr. Sermilik where they should be rather numerous. The species is also hunted southeast of Nanortalik and in Uunartoq Fjord (Glahder 2001).

Harp seal *Phagophilus groenlandicus*
The Harp seal is a common summer visitor to Greenland from May onwards from the breeding grounds at Newfoundland. Harp seal is the most common seal species in the Kujalleq municipality is in general hunted everywhere in the Nanortalik district both off the coast and in the fjords. Yet, some places are pointed out as important hunting grounds, including Saqqaa Fjord (Figure 16).

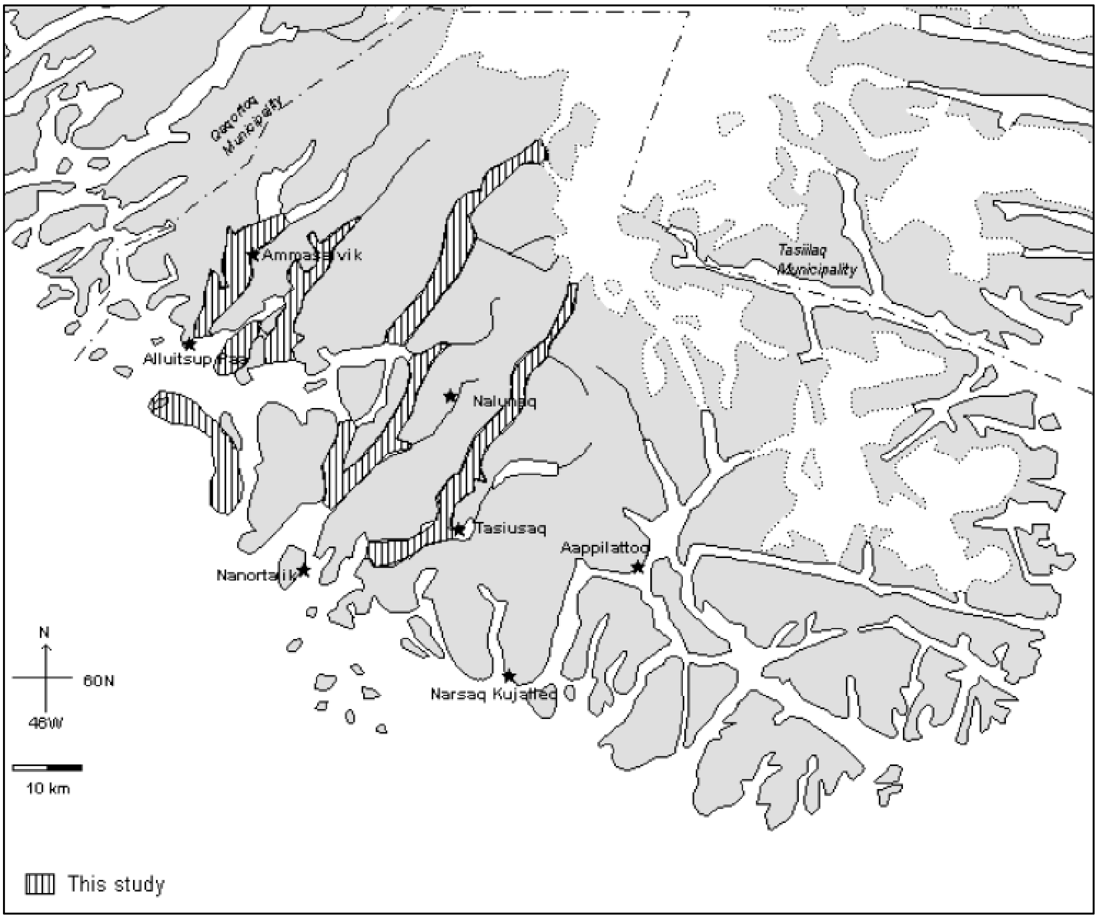


Figure 16: Important hunting grounds for Harp Seal (Phagophilus groenlandicus) in the Nanortalik district (Glahder 2001).

Bearded seal *Erignatus barbatus*
Bearded seal is distributed sparsely along the coast of Greenland and in the drift ice. Bearded seal should be common in the Nanortalik district, and numbers seem to have increased during the last few years (Glahder 2001).

Hooded seal *Cystophora cristata*
In Greenland, the Hooded Seal is missing only in the North. The total population of the Hooded seal is probably increasing. The most important hunting grounds are situated on offshore islands far from the study area (Glahder 2001).

Other marine mammal species

The Mink Whale *Balaenoptera acutorostrata* is found in West and East Greenland along the coast, in fjords and bay areas up to about 72°N. Mink whales should be numerous around Cape Farewell (Glahder 2001).

Sperm Whale *Physetermacrocephalus* is not a common species in the Nanortalik district but may still occur near the study area. Glahder (2001) describes rare sightings of White Whales *Delphinapterus leucas* and Nar Whales *Monodon monoceros* in the Nanortalik district. Humpback whales *Megaptera novaeangliae* are becoming more common in the Nanortalik district and are observed in many of the fjords (Glahder 2001).

A group of Harbor Porpoises *Phocoena phocoena* was observed on several occasions in the fjord near the mining camp in August 2019 (Orbicon 2019).

The major potential impacts from the mining project on marine mammals is expected to be increased traffic of vessels to and from the harbor area. However, it expected that the EIA can be elaborated on existing data and that no additional surveys are expected.

<u>Marine birds</u>

The shoreline of Saqqaa Fjord supports a variety of fauna with shore birds such as wintering Brünnich's guillemots *Uria lomvia*, common eiders *Somateria mollisima* and long-tailed ducks *Clangula hyemalis*. Also, Mallard *Anas platyrhynchos*, Lesser Black-backed Gull *Larus fuscus*, Iceland Gull *Larus glaucoides*, Glaucous Gull *Larus hyperboreus*, Black-legged Kittiwake *Rissa tridactyla* is seen in the fjord.

The following species of huntable seabirds are likely to occur in or near the study site (Glahder 2001).

Eider *Somateria mollissima*

In Greenland the Eider breeds along most of the west coast, and it is more scarce on the East coast to 77°N. Eiders from North and West Greenland and birds from high arctic East Canada migrate to wintering grounds in the open water areas in West Greenland north to Aasiaat (69°N), and in East Greenland north to 74°N; many winters around Iceland (Boertmann 1994). In the Nanortalik district Eiders are known to breed at the islands of Nordlige Kitsissut which is more than 30 km from the study area. There are hunting grounds of some importance north of the study area (Figure 17).

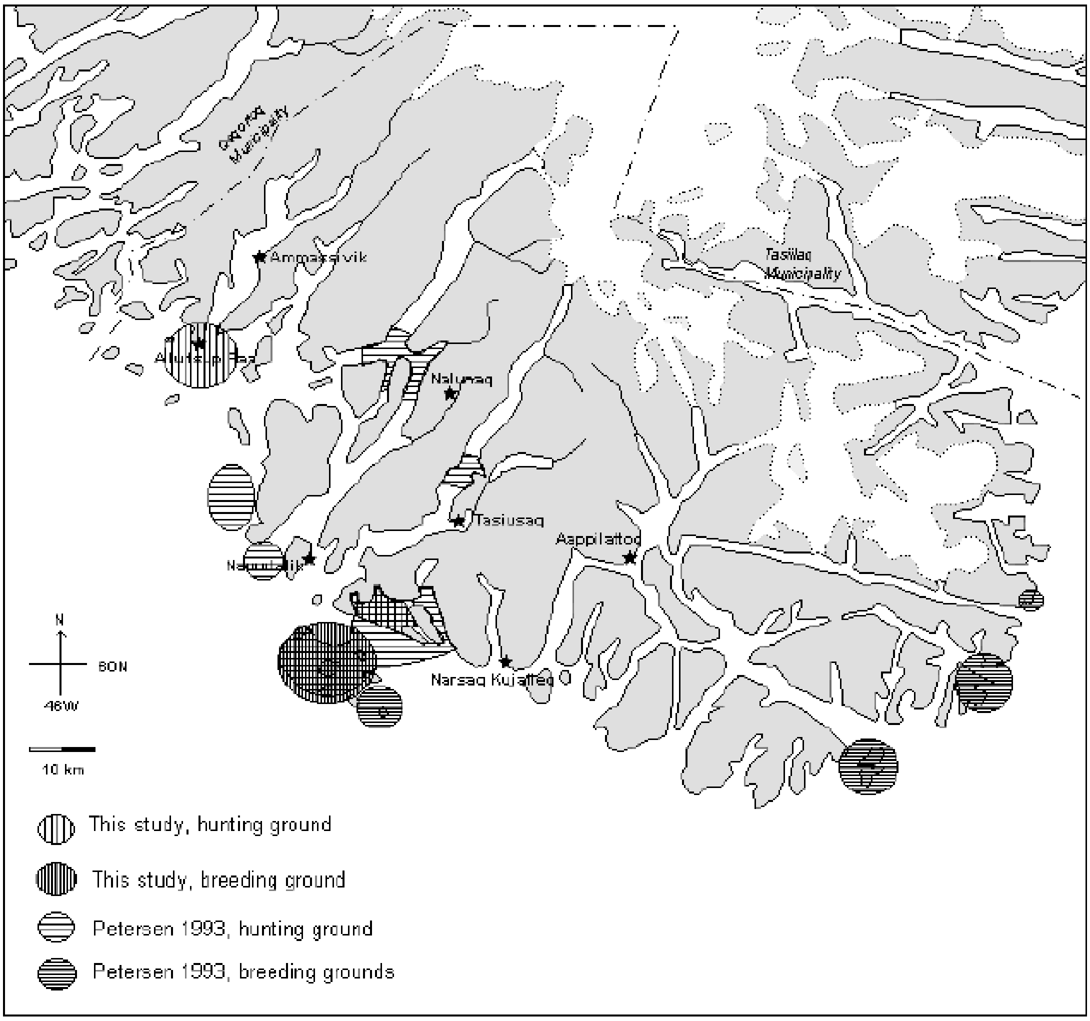


Figure 17: Most important hunting and breeding grounds for Eider in the Nanortalik District (Glahder 2001).

Brünnich's Guillemot *Uria lomvia*

In Greenland most breeding colonies are found along the west coast. In West Greenland breeding colonies of Brünnich' s Guillemot are mainly distributed from Qaanaaq (78°N) to Ivittuut (61°N). Important hunting grounds include the Saqqaa Fjord in the study area (Figure 18).

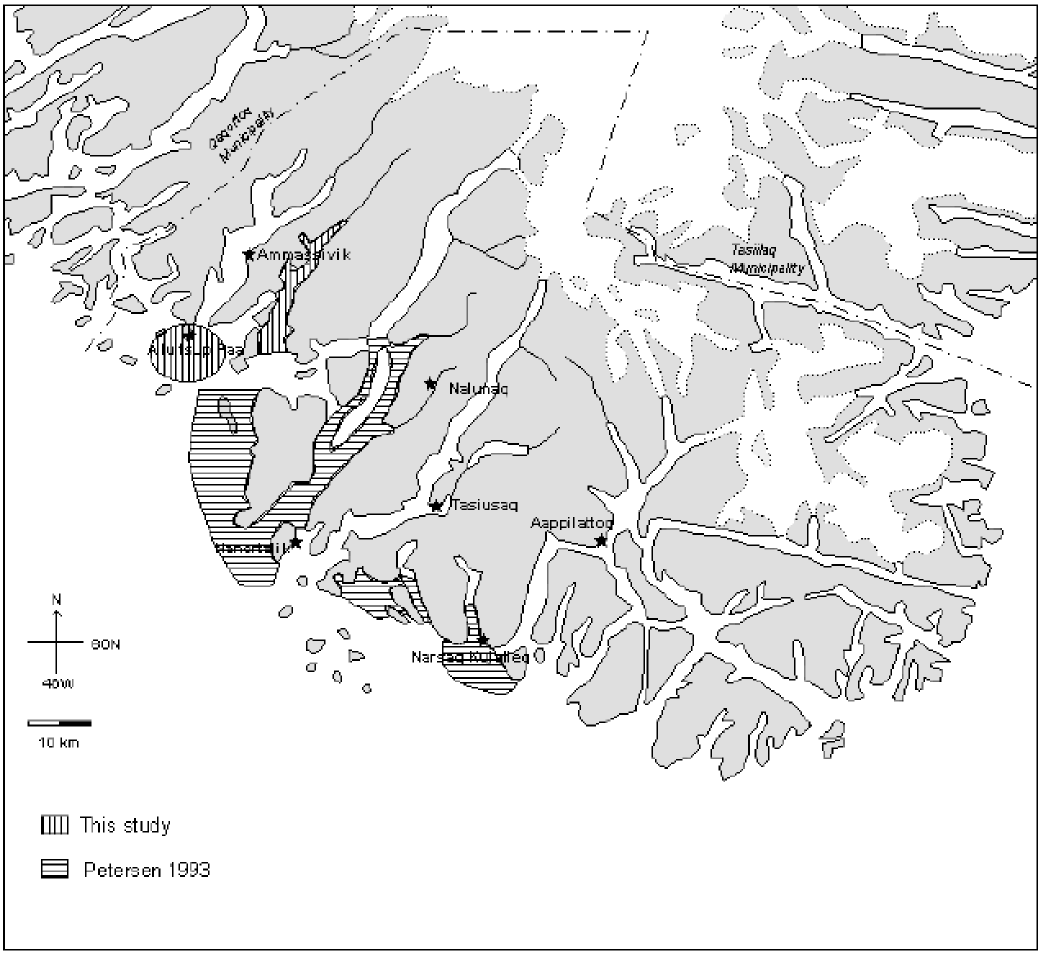


Figure 18: Hunting grounds of Brünnich's Guillemot in the Nanortalik district (Glahder 2001).

There are no major seabird breeding colonies or Important Bird Areas near the study area. The nearest Important Bird Area is the archipelago Kitsissut Avalliit (Ydre Kitsissut located 50 km south-southwest of Ivittur, 70 km west of the settlement Qassimiut and more than 100 km from the study area. Kitsissut Avalliit holds a high diversity of breeding seabirds, including Common Guillemot Uria aalge and Razorbill Alca torda (Heath & Evans 2000).

A shipbased survey of seabird breeding colonies and harbour seal habitats in Southeast Greenland between Prins Christian Sund and Tasiilaq, including 11 sites between Nanortalik and Prins Christian Sund, reported no significant seabird breeding colonies or sites of significant importance to seals near Nanortalik (Boertmann & Rosing-Asvid 2014).

4.6 Baseline monitoring

The previous licence holder, Angel Mining Gold A/S, closed its gold production in the Nalunaq area in November 2013 after which the area was decommissioned and restored until August 2014.

A total of 14 years of environmental monitoring has been conducted to detect any undesired environmental impacts of the former mining industry (Bach & Olsen 2020). The content of 12 metals has been determined in the marine, the freshwater and the terrestrial environment to reveal potential spreading of metals into the Kirkespir Valley and the Kirkespir Bay environment (Figure 19).

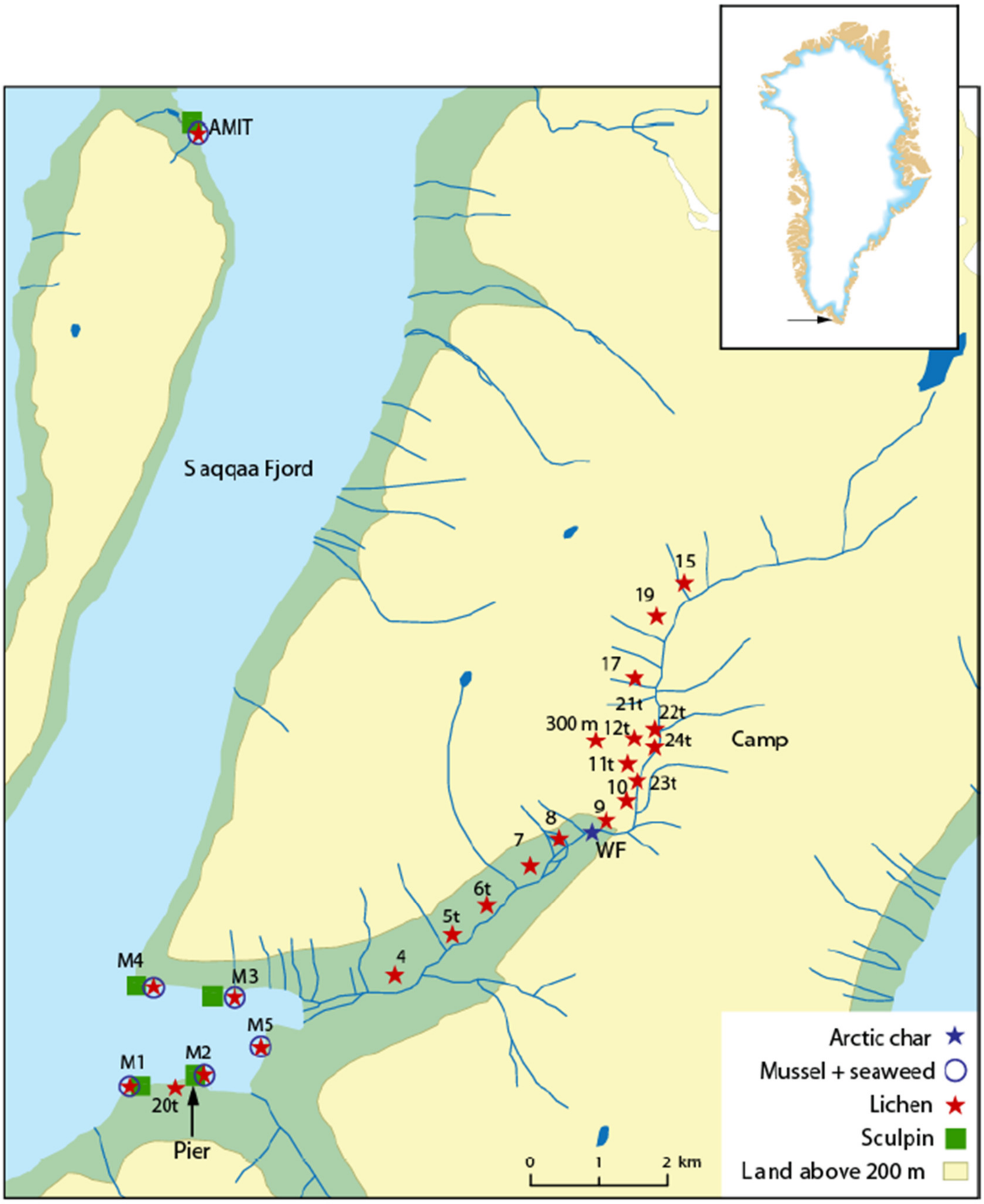


Figure 19: Sampling locations for monitoring (map from Bach & Olsen 2020).

The purpose of the environmental monitoring has been to detect and prevent any undesired environmental impacts from the former goldmine, but the data and experiences from the former operations will also be useful when assessing and mitigating the potential environmental impact of the reopened Nalunaq project.

Requirements for monitoring of the environment in relation to the mining activity have been set by the Mineral Resources Authority (MRA) of the Greenland Government. These requirements are described in the MRA exploitation license of 19 March 2010, Phase 6, §§19/43, Chapter 8.

As the gold extraction method have included the utilization of cyanide, an intensive monitoring program for detection of cyanide in the environment has been undertaken when the mine was in production. After closure of the mine, freshwater samples have been analysed for free and total cyanide. No cyanide has been detected in these samples.

The monitoring program also included collection of water and biological samples that have been analysed for metals and other pollutants.

In the Kirkespir River and Kirkespir Bay, no elevated concentrations of concern were found in Arctic char and only few instances of elevated metal concentrations were found in seaweed and blue mussels.

After the monitoring in 2019 DCE concluded that no further actions are needed to be taken to reduce the environmental impact of the former mining operation. Environmental monitoring after activities related to the exploitation license 2003/05 is therefore considered to be completed with the environmental studies in 2019.

Overall, DCE assesses that the current environmental impact from the former mining activities to the environment at Nalunaq is insignificant. Consequently, DCE considers the Nalunaq gold mine to serve as an example of how a mine can be operated in Greenland with minimum environmental impact by establishing adequate environmental requirements and conditions as part of the license and through detailed environmental monitoring and regulation during mine operation (Bach & Olsen 2020).

5. Environmental Impact Issues of Concern

The reopening of a gold mining operation in the Study area can potentially impact the environment in the study area. Potential impacts can be both physical (e.g. transportation to and in the area, crushing of ore and spreading of particles) and chemicals (e.g. the risk of elevated concentrations of contaminants in the environment).

The physical impacts can displace animals from the area, and the chemical impacts can be toxic to plants and animals and contaminate food.

Based on the project description and the information presented in the previous chapters, the subjects identified to require attention in the EIA are summarized in Table 5. The table includes issues that will be dealt with in the risk assessment which will be part of the EIA.

Table 5: Issues identified to be addressed in the EIA and the associated Risk Assessment.

Project Phase	Project activity	Pollution					Disturbance/footprint			
		Air pollution/dust	Noise/vibration	Freshwater environment	Marine environment	Terrestrial environment	Physical environment (landscape)	Freshwater environment	Marine environment	Terrestrial environment
Construction	Building of mine- and camp facilities	x	x	x			x			x
	Shipping/transport	x	x	x	x				x	x
Operation	Mining and processing	x	x	x		x	x			x
	Handling of tailings and waste rock	x		x		x	x	x		x
	Water/effluent management			x	x					x
	Transport on road	x	x							x
	Shipping	x			x				x	
	Handling of waste						x			x
Closure and post-closure	Dismantling of mine	x	x							x
	Handling of tailings and waste rock	x		x		x	x	x		x
	Transport/shipping	x	x						x	x
Risk assessment	Handling of tailings			x		x		x		
	Spill of oil/chemicals			x	x	x				
	Leaks of fuel tank on land			x	x	x				

6. Terms of Reference for the EIA

This part of the scoping report specifies the proposed content of the EIA for the project. A preliminary Table of Content for the EIA with the topics to be addressed is found in Annex I of this report. The proposed environmental issues to be discussed in the EIA are the ones listed in Table 5.

In order to prepare the EIA in accordance with the proposed Table of Content, additional information is needed for only few subjects.

The specific studies which are proposed to be carried out in order to provide the information needed to assess the environmental impact of the project are listed below.

It should be noted, that in most cases it will be possible to assess the impacts from existing information, as good information is already available and because the environmental impact is judged to be relatively small and local.

6.1 Proposed additional impact assessment studies

Baseline monitoring

According to the Greenlandic guidelines, the EIA report must be based on environment baseline studies typically covering 2-3 years before the area will be affected by activities and construction.

The purpose of the environmental baseline studies is to describe the state of the environment prior to exploration, construction and operation of the mine. Baseline studies are needed in order to assess the potential environmental impacts from the mining operation as well as to establish a baseline for the monitoring program during the construction and production phases. Pre-mining baseline data also serve as valuable standards for the closure and rehabilitation plan. However, as 14 years of environmental monitoring exists, we expect that monitoring only during construction, operation and afterwards is necessary.

<u>Chemical Background Concentrations (baseline monitoring)</u>

The Greenland authorities require marine, terrestrial and freshwater samples collected from the planned mining area and a reference area to determine the chemical background concentrations before mine operations commence. The data then provides reference information for future monitoring during mine operation.

The sampling that was finished in 2019 (Bach & Olsen 2020) included sea-weed, fish, freshwater, sediment, soil, plants and lichens.

<u>Flora and Fauna</u>

It must be specified to what extent the project will disturb birds and animals in and near the proposed mine area.

Additional gathering of information about the environment conditions, including site inspections and expanded descriptions of flora and fauna is expected to some extent. However, we do not expect additional comprehensive surveys or studies to be carried out, as the existing knowledge of the natural conditions in the study area and the expected environmental impact from the mining project is already quite comprehensive.

Air quality including dust
Due to the relatively small size of the project and the proposed mine activities, emissions from fuel consumption are believed to be limited and with no significant impact on the environment. It is therefore proposed that the air quality assessment part of the EIA will comprise (1) a greenhouse gases emissions estimate, and (2) a brief discussion of potential black carbon emissions. These assessments will be based on estimated consumption data provided by Nalunaq A/S.

The potential pollution from dust generated from transport to and from the mine area and during the handling and storage of the heavy mineral concentrate will be discussed and assessed in the EIA.

Hydrology and water balance

Freshwater will be generated through a reverse osmosis water treatment plant, which will be fed by floating pumps located in the Saqaa fjord, close to the Camp Facilities' shore. Nalunaq A/S will also determine, as it operates, potential fresh water streams from the watershed area around Nalunaq which could be used as a freshwater source.

The impact on the water balance due to the project activities will be assessed on the basis of existing data and supplemented by data collected during the baseline studies.

Archaeology and Cultural Heritage
It will be discussed with Greenland National Museum, if an archaeological survey is considered necessary to compile data to assess, if sites of archaeological interest would be affected by the exploration activities, or if such an assessment can be made on the basis of existing knowledge. Note that in the Kvaerner Feasibility Study of 2002, the archeological sites were identified and have been taken into account in the preliminary design of the infrastructures.
Supplementary baseline studies

Following the DCE/GINR recommendations, the baseline studies for Nalunaq Gold Project will be supplemented with:

Studies on Kirkespir River and other rivers in risk during spring run-off, and in the summer and autumn period:

- Water flow – A permanent measuring station of flow and temperature will be established at the lower part of the Kirkespir River (**At the bridge**). Measures will include barometer compensated divers, measure of k/h relation. The flow will be measured every 30 minutes all year, starting from October 2020. **An additional flow measuring** station will be establish upstream of the potential tailing facility.
- Water samples of filtered and unfiltered water and samples for measurements of total suspended solids and elements, pH and conductivity. Samples will be taken in Kirkespir River near the bridge and upstream the potential tailing facility. Samples will

be taken monthly in the period with staff in the camp. **First samples will be taken in October 2020.**

- Bottom sediment samples for measurements of elements will be collected in spring 2021.

The data should provide information of yearly variation and measurements/sampling will be conducted monthly over at least one year from October 2020 until September 2021.

Study of local weather and climate:
A permanent weather station will be established in October 2020 near the planned processing facilities and near the planned dry tailing storage. The weather station will record:

- Air temperature
- Precipitation
- Local wind regime
- Soil temperature in different depth will be measured near the proposed site for the DSTF.

Hydrology and water balance:
The water balance at critical infrastructure at the mine (particularly DTSF and waste rock stock-piles) will be modelled taking into account extreme weather events, which could potentially compromise the stability of the structures under both operational and post-closure conditions.

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8. Annex 1

INDICATIVE TABLE OF CONTENTS FOR THE EIA REPORT

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