North Arrow
MINERALS INC.

ENVIRONMENTAL PROCEDURES PLAN

Luxx Project, NU

Date: December 11, 2017

ENVIRONMENTAL PROCEDURE PLAN FOR EXPLORATION

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The following Environmental Principles have been developed by North Arrow Minerals Inc. These principles form the guiding base for the Environmental Operating Procedures that apply to the Luxx Project, Keewatin Region, Nunavut.

1. Environmental management is an integral component of our exploration programs and is the responsibility of all program personnel.
2. Any potential environmental impact from our activities will be assessed and minimized.
3. Environmental standards and quality of work will be continuously improved and maintained in conjunction with effective exploration.
4. All relevant government laws and regulations for the protection of the environment will be known and complied with.
5. All contractors and employees will be informed of our Environmental Policy, Environmental Principles, Environmental Management Standards, Environmental Operating Procedures and their designated environmental responsibilities.
6. Effective communication and a close liaison will be maintained with nearby communities and regulatory authorities.
7. Exploration activities will be conducted with due regard for the protection of wildlife, flora and sites of natural, cultural and historical significance.
8. Programs will be established to recycle and conserve resources.

Environmental Operating Procedures

INTRODUCTION

The following plan applies to the Luxx Project operated by North Arrow Minerals Inc. ("North Arrow"). This project, located on Crown Land in the East Keewatin Region of Nunavut, approximately 90 kilometres north of Rankin Inlet, consists of three mineral claims: K16219 (Luxx1), K16220 (Luxx2) and K15620 (Luxx3). Year-round access to the property is via plane, equipped with skis or floats, or helicopter. The property is bounded in a general sense by the following minimum and maximum latitudes/longitudes:

Min Lat (degree/minute)	63°29'54.87"	Min Long (degree/minute)	-92°00'24.80"
Max Lat (degree/minute)	63°45'14.94"	Max Long (degree/minute)	-91°30'48.82"

North Arrow intends to carry out exploration work including prospecting, mapping, ground geophysics, sampling and diamond drilling. Work will be confined to the current claim area. Individuals working on the property could reach seven.

North Arrow Minerals Inc. is committed to maintaining high standards in environmental practices. Exploration activities generally have a very low degree of impact upon the environment. We work in remote and relatively pristine areas, with particularly sensitive ecosystems and challenging environmental and climactic conditions. We must be diligent and innovative in the management of our activities to ensure minimal impact to the environment.

1. PLANNING

Exploration programs will be carefully planned to minimize disturbance and effectively manage environmental risks.

Risk Assessment

The activities associated with the proposed exploration program will be assessed for environmental risks and impacts. Variables such as topography, climate, fauna, vegetation and stakeholders must be considered. Procedures and/or processes will be implemented to manage and mitigate the identified environmental risks and impacts.

Emergency Preparedness

A Spill Contingency Plan has been established for exploration programs and remote camp locations. The plan includes contingencies for probable environmental emergencies as a result of natural occurrences and/or as a result of program activities.

Expenditure / Budget

Activities such as environmental training and rehabilitation will be included in the program budget. These are a genuine program costs and must be treated as such. Good environmental planning and management will minimize environmental damage.

Due Diligence

The environmental status of land will be reviewed prior to acquisition and any potential

environmental liabilities recognized. This may involve discussions with landholders or on-site inspections, reviewing maps, photographs arid previous reports of the area. This process will be continued during the life of the program and will include mapping or photographing of possible sensitive sites.

Legislative Requirements
All relevant legislation will be known, communicated and complied with.

Approvals
Any stakeholders of the land that will be explored will be notified. Relevant approvals from stakeholders and regulatory authorities will be obtained before exploration commences.

Responsibilities and Accountabilities
Environmental responsibilities will be assigned and communicated to all members of the program team. This includes employees, contractors and sub-contractors. Contractor responsibilities will be outlined in the environmental schedule of the contract. The primary responsibility for protecting the environment from impacts related to program activities is assigned to the Program Supervisor.

Induction and Training
Field employees and contractors will undergo an environmental, safety and cultural induction that includes relevant regulations.

Contractors
Preference will be given to contractors who display high standards of environmental management and performance.

Closure Planning
The short term and long term environmental implications of our activities must be considered and plans developed to eliminate or mitigate these impacts upon program closure.

2. STAKEHOLDERS
A stakeholder is an individual or group (i.e. landholder, local group, regulatory authority, community, etc.) concerned with or potentially affected by our exploration activities. Regular communication will be maintained with these stakeholders for the duration of the program, and afterwards in some cases. Any agreement made with stakeholders will be documented.

Cultural and Heritage Issues
Cultural objects, remains and sites of spiritual, archaeological, anthropological or historical significance will be protected.

- Surveys may be required to identify sites of sacred, heritage and cultural significance. The results of these surveys must be documented.
- Any additional sites encountered during exploration will be left undisturbed, recorded and reported to the **Department of Culture and Heritage 1-866-934-**

2035 or the Deputy Minister (867) 975-5500.

- Any discussions with local communities or traditional owners should be documented.

Archeology:

There will be no disturbance to any archaeological or paleontological sites. No personnel shall remove, disturb or move any archaeological or paleontological artifact or site. If field personnel locate any potential/suspected archaeological or paleontological site they must cease any activities that may potentially disturb the site. The Department of Culture and Heritage must be contacted immediately and personnel must provide all the information requested as best as possible. **Department of Culture and Heritage 1-866-934-2035 or the Deputy Minister (867) 975-5500.**

3. FLORA AND FAUNA

All reasonable care will be taken to avoid interference with rare or endangered species of native flora or fauna.

Flora

- All reasonable care will be taken to avoid unnecessary impacts to flora and to mitigate required impacts.

Fauna

- Hunting is prohibited.
- Firearms and domestic animals are not permitted unless special permission has been obtained from the Exploration Manager.
- Harassment of wildlife will not be tolerated.
- All recorded wildlife sightings will be reported annually to the DOE.

Regional Manager Wildlife	**Rob Harmer**	**(867)857-3172**	**mailto:RHarmer@GOV.NU.CA**
Conservation Officers			
Chesterfield Inlet		**(867)898-9130**	**chesterwildlife@qiniq.ca**
Rankin Inlet	**Johanne Coutu-Autut**	**(867)645-8084**	
Regional Biologist	**Mitch Campbell**	**(867)857-3171**	**mcampbell1@gov.nu.ca**

- If local hunters are observed, field personnel must cease activities in the area and leave when possible.
- During the period of when caribou is observed to be calving in the area, all activities will be suspended that may disturb calving caribou.
- No field related activities may disturb caribou during migration. All activities such as low altitude flying must cease until the migrating caribou have left the area.
- No fuel cache may be established within 10 km or conduct any drilling within 5 km of important caribou crossings.
- Low-level flying should be avoided when possible. If a concentration of caribou is encountered an altitude of at least 610 m above ground should be maintained.
- When large concentrations of birds are observed flight level is restricted to 1,000 m vertical distance and 1,500 m horizontal distance. If weather conditions prohibit

higher altitudes the flight path must be changed accordingly.

- All personnel will be trained on the following: avoidance of human-wildlife interactions, wildlife safety, wildlife safety equipment, waste management, and protocol to report human-wildlife interactions.
- No feeding of wildlife will be tolerated.
- All bird nests will be avoided by field personnel on foot and by aircraft.

4. AIRBORNE OPERATIONS

Our exploration activities require airborne support due to the remote locations. Additionally, due to the lack of serviceable airstrips in the region, this support involves aircraft equipped for off-strip operations (float planes, helicopters). These types of aircraft have a minimal potential impact upon the environment. The potential impacts include: petroleum product spill and disturbance of fauna and people from low altitude flying and frequent landings/take-offs. The likelihood of disturbing or disrupting people is considered low due to the remote locations of the activity. All stakeholders will be contacted prior to the commencement of operations. The requests of all stakeholders will be respected.

Airstrips

If North Arrow conduct field operations during the spring months and need to drop fuel at a drill site location fixed wing aircraft equipped with skis or wheels could be used to land on frozen lakes, leaving behind no footprint.

Helipads

Helicopter landings and take-offs have little impact upon the flora or ground surface. However, helicopters require an area clear of obstructions that allows for safe maneuverability of the aircraft. The size of this area is dependent upon the aircraft type. Landing sites will be selected, whenever possible that have a competent ground surface and are naturally free of vegetation or marginally covered.

Fuel

Aviation fuel at exploration operations is contained in 205 litre steel drums for ease of handling. These drums are stored horizontally, on the ground with the bungs positioned at the mid-way point. This storage method prevents contact of surface water with the bungs and possible contamination of the fuel and keeps the bung seals submerged in fuel, which prevents the seals from drying out and leaking.

- Fuel drums will be stored at a distance of no less than 100 metres from any surface water source (e.g. lake, stream, pond, etc.)
- Remote fuel storage locations (e.g. fuel cache) will be plotted on a suitable topographic map and the GPS positions will be recorded. An updated inventory of the fuel used will be maintained.
- Regular visual inspections will be conducted of all fuel caches
- Empty or otherwise no longer required fuel drums will be retrieved from all locations. Empty drums will be returned to the fuel supplier for recycling.
- Full fuel drums will not be stored remotely for more than one year.
- Fuel storage locations will have a suitable spill response kit.
- Please review the Spill Plan for more details on fuel spill protocol.
- The contents of the spill kit are listed below

1 – 360 litre/79 gallon polyethylene overpack drum
4 – oil sorbent booms (5” X 10’)
100 – oil sorbent sheets (16.5” X 20” X 3/8”)
1 – drain cover (36” X 36” X 1/16”)
1 – Caution tape (3” X 500’)
1 – 1 lb plugging compound
2 – pair Nitrile gloves
2 – pair Safety goggles
2 – pair Tyvek coveralls
1 – instruction booklet
10 – printed disposable bags (24” X 48”)

Sorbent capacity of this spill kit is 240 litres.

- Refuelling locations will have a suitable fire extinguisher.
- Spill prevention measures will be implemented prior to refueling (e.g. drip pan).

5. LAND DISTURBANCE

All necessary permits and permissions will be obtained prior to conducting any land disturbance. Great care will be taken to avoid and/or minimize land disturbance. When clearing is unavoidable, it must be carried out in a manner that does not promote erosion. Whenever possible, areas that are naturally free of vegetation will be selected for logistical support sites (e.g. fuel cache).

Supervision

Earth moving and clearing activities will be supervised at all times by a North Arrow representative who will clearly define the area to be disturbed using temporary markers.

Earthmoving

Earthmoving is limited to the construction of small pits and sumps for the collection and disposal of benign waste (e.g. drill sumps). Topsoil (or surface material useful for regeneration or re-vegetation) will be removed and stockpiled separately from subsoil. Topsoil should be returned as soon as possible (preferably within six months) to maintain seed viability, nutrient quality and microbial activity.

Geochemical Sampling

When taking soil/ till samples, areas naturally free of vegetation (frost boils) will be selected whenever possible. When this is not possible the organic layer and any topsoil should be put to one side and replaced after the sample is collected. The depression will be re-contoured to prevent any hazard to wildlife.

6. DRILLING OPERATIONS

Contracts for exploration drilling services will stipulate adherence to the environmental component of North Arrow’s Responsibly Policy and these Environmental Procedures and include penalties for non-compliance.

Drill Sites

- Select sites to minimize damage to the environment.

- Drilling will not occur within 30 metres of the high water mark of any water body.
- Avoid locating drill sites on steep slopes.
- Prepare sites as per the guidelines in section 5 (Land Disturbance).

Sumps

- Natural depressions will be used in preference to excavation.
- Ensure that the size to be used is adequate to contain all potential drilling fluids.
- Sumps should be positioned down slope of drill collars to ensure run-off flows into the sump.
- If excavation is required, the organic layer and any topsoil should be stockpiled separately for replacement during backfilling.
- Sediment and erosion control measures such as sumps will be implemented prior to the commencement and maintained during drilling activities to prevent any sediment from entering a water source.
- All sumps must be constructed and located in a manner where if CaCl is used as a drilling additive there is no potential for fluids to enter a water source.

Drilling Fluids

- Bio-degradable drilling fluids will be used at all times.
- Drilling fluids will be contained in sumps or by another suitable and approved method (e.g. tank).
- Fluids will be disposed of according to MSDS report and may require transport to an approved facility.

Water Use

- Streams will be avoided as a water source for drilling activities.
- The water intake will be screened to prevent the entrainment of fish.
- The screen holes will be small enough that no fish of any size can pass through the screen and into the intake or pump system.
- The screen will be continually monitored to ensure that it is in a good state of repair.
- Should the screen require any maintenance, the intake shall be closed to prevent any fish from passing into the system.
- If drilling activities require water in sufficient volumes that a water source may potentially be drawn down, information detailing the volume required, size of water body, fish species, etc. will be forwarded to the Department of Fisheries for review.
- If encountered, artesian water flow will be controlled to prevent erosion of the ground surface and the silting of watercourses. Drill holes will be plugged and permanently sealed upon completion of the project.

Waste

- Receptacles will be provided for rubbish at drill sites. No waste of any description will litter the site.
- Food waste will be removed from drill sites daily.
- No drill waste, drill cuttings, drill additives, sediment or any other deleterious substance will be deposited in any type of water body. All drilling related substances will be contained in a sump or impermeable container and disposed of appropriately.

- Waste will be disposed of appropriately at an approved facility.

Drilling on Ice

- No drilling materials unless use is immediate, will be stored on ice or less than 30 meters to the high water mark to prevent any potential for material to enter water.
- Drilling fluids and cuttings will be contained by an impermeable barrier to prevent contact with the ice surface or water.
- Drilling additives or muds shall not be used unless they are re-circulated or contained in a manner that prevents any entry into a water source or determined to be non-toxic by regulatory agencies.
- Return water released must be non-toxic and not result in an increase in total suspended solids.
- A method to clean up an accidental spill of this material has been devised (see North Arrow Spill Contingency Plan) and the required equipment will be made available prior to the commencement of operations.
- Fluids and/or cuttings will be disposed of on land in a natural depression or excavated sump or otherwise in accordance with the land use permit.

Spill Prevention

Methods will be implemented for the handling and care of petroleum products, drilling additives, etc. so as to prevent accidental spillage of these materials. Drip pans will be placed under all equipment that contains petroleum products or hazardous materials. Only personnel trained in handling fuel will refuel equipment. Please see Spill Contingency Plan for more detailed information.

Capping of Drill Holes

- All holes will be temporarily plugged immediately upon completion, using whatever safe means available (e.g. metal cap and/or rocks), to eliminate any hazard to wildlife.
- Prior to, or on completion of the program, all open holes will be plugged with a proper down-hole plug and the area above the plug filled in.
- Casing will be removed and if not possible any portion remaining above the ground surface will be cut off to ground level or below and capped.
- Any excess drill chips will be poured back down the drill hole.

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Drill Safety

All drill personnel and contractors must have the minimum first aid certification required by the Workers' Safety & Compensation Commission (WSCC). All drill personnel will undergo training and educational sessions regarding all environmental, wildlife, safety and cultural aspects of the Luxx Project area and surrounding communities (namely Chesterfield Inlet). The project safety officer will be responsible for all emergency and safety operations at the drill site. Temporary emergency shelters will be used at each drill site equipped with cots, food and a heat source. All drill operations will be helicopter supported at all times. Contact with the drill personnel at the drill site with the Project Supervisor will be maintained 24 hours via helicopter radio, satellite phones or handheld two way radios.

7. WATER MANAGEMENT

Precautions will be taken throughout our operations to prevent direct or indirect pollution of watercourses.

- Used water will be contained in excavated sumps or natural depressions.
- Water flow will be controlled to prevent erosion of the ground surface and the silting of watercourses.
- Proposed potable water should be tested for water quality.
- Regular water monitoring should be considered for areas of advanced exploration.

8. HAZARDOUS MATERIALS

Whenever possible, the use of hazardous materials will be avoided. Other methods or non-hazardous substitutes will be employed.

- Only approved hazardous materials will be on site.
- All hazardous materials will be stored in the manner specified in the MSDS sheets.
- Whenever a substance is taken from its primary container and placed into a secondary container, the secondary container will be adequately labeled as to its contents.
- Material Safety Data Sheets (MSDS) will be available for all hazardous materials on site.
- Fuels, oils and chemicals must be properly contained and stored at a minimum distance of 30 metres away from surface water unless expressly authorized by a land use permit or in writing by an inspector.
- Flammable materials will be stored in cleared areas or in a metal storage cabinet that is segregated from combustible material.
- Disposal of hazardous materials will occur off-site at an authorized facility.

Spill Response

- Spills will be cleaned up promptly. Any spill will be reported immediately to:

Water Resources Manager	**Erik Allain**	**(867)975-4295**
24 Hour Spill Report Line		**(867)920-8130**

- All spills will be reported internally to the appropriate company representatives.
- All governmental reporting requirements will be adhered to.
- Spill kits or absorbent material will be available at all fuel storage locations and activity (e.g. drill-sites, helicopter).

The following responses are suitable for fuel/petroleum product spills in different environmental media:

Spills on Land (gravel, rock, soil and vegetation)

- Trench or ditch to intercept or contain flow of fuel or petroleum products on land, where feasible (loose sand, gravel and surface layers of organic materials are amenable to trenching/ditching; trenching in rocky substrates is typically impractical and impossible).
- Construct a soil berm down slope of the spill. Use of synthetic, impervious sheeting can also be used to act as a barrier.

- Recover spills through manual or mechanical means including shovels, heavy equipment and pumps.
- Absorb petroleum residue with synthetic absorbent pad materials.
- Recover spilled and contaminated material, including soil and vegetation.
- Transport contaminated material to approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill.
- Land based disposal is only authorized with the approval of government authorities.

Spills on Snow

- Trench or ditch to intercept or contain flow of fuel or petroleum products on snow, where feasible (ice and snow are amenable to trenching/ditching)
- Compact the snow around the outside perimeter of the spill area.
- Construct a dike or dam out of snow, either manually with shovels or with heavy equipment such as graders and dozers where available.
- If feasible, use synthetic liners to provide an impervious barrier at the spill site.
- Locate the low point of the spill area and clear channels in the snow, directed away from waterways, to allow non-absorbed material to flow into the low point.
- Once collected in the low area, options include shoveling spilled material into containers, picking up with mobile heavy equipment; pumping liquids into tanker trucks or using vacuum truck to pick up material.
- Where safe, disposal can be done through in-situ combustion with approval from government authorities.
- Liquid oil wastes, oil contaminated snow and debris and oil residues left after controlled, in-situ burning will be picked up and disposed of at a land disposal site approved by government authorities and fire/safety consultants.
- Transport contaminated material to approved disposal site. Equipment used will depend on the magnitude and location of the spill.

Spills on Ice

- Contain material spill using methods described above for snow if feasible and/or mechanical recovery with heavy equipment.
- Prevent fuel/petroleum products from penetrating ice and entering watercourses.
- Remove contaminated material, including snow/ice as soon as possible.
- Containment of fuel/petroleum products under ice surface is difficult given the ice thickness and winter conditions. However, if the materials get under ice, an effort will be made to define the area where the fuel/petroleum product is located.
- Drill holes through ice using ice auger to locate fuel/petroleum product.
- Once detected, cut slots in the ice using chain saws and remove ice blocks.
- Fuel/petroleum products collected in ice slots or holes can be picked via suction hoses connected to portable pump, vacuum truck or standby tanker. Care should be taken to prevent the end of the suction hose clogging up with snow, ice or debris.
- Fuel/petroleum products that have collected in ice slots may be disposed of by in-situ burning if sufficient holes are drilled in ice. Once all the holes are drilled, the oil which collects in the holes may be ignited. Consult with fire/safety consultants and government authorities to obtain approval.

Spills on Water

- Contain spills immediately to restrict the size and extent.
- Fuel/petroleum products, which float on water, may be contained through the use of booms, absorbent materials, skimming, and the erection of culverts.
- Deploy containment booms to minimize spill area, although effectiveness of booms may be limited by wind, waves and other factors.
- Use absorbent booms to slowly encircle and absorb spilled material. These absorbents are hydrophobic (absorb hydrocarbons and repel water).
- Once booms are secured, use skimmers to draw in hydrocarbons and minimal amounts of water. Skimmed material can be pumped through hoses to empty fuel tanks/drums.
- Culverts permit water flow while capturing and collecting fuel along the surface with absorbent materials.
- Chemical methods including dispersants, emulsion — treating agents and shoreline cleaning will be considered.
- Use absorbent pads and similar materials to capture small spills/oily residue on water.

Other Response Alternatives

In-situ combustion is a disposal method available for fuels and petroleum products. In-situ burning can be initiated by using a large size portable propane torch (tiger torch) to ignite the fuel/petroleum products. Highly flammable products such as gasoline or alcohol, or combustible material such as wood may be used to promote ignition of the spilled product. The objective is to raise the temperature for sustained combustion of the spilled product. Precautions need to be taken to ensure safety of personnel. Also, spilled product should be confined to control burning. These include areas where the spilled material has pooled naturally or been contained via dikes, trenches, depressions or ice slots. Prior to any attempts at in-situ burning, consultation with experts and approval by government authorities are required.

Chemical response methods are also available and may include the use of the following:

- Dispersants
- Emulsions-treating agents
- Visco-elastic agents
- Herding agents
- Solidifiers
- Shoreline cleaning agents

Biological response methods include nutrient enrichment and natural microbe seeding.

9. REHABILITATION

All reasonable steps will be undertaken to return the land surface to its original form, and to promote healthy re-vegetation and sustainable natural development. Rehabilitation varies depending on the speed of natural growth. Local land management authorities will be consulted concerning proven and recommended methods for rehabilitation and re-vegetation.

Upon completion of exploration in the Luxx Project area, an inspection will be made to assess whether all garbage has been removed, all drill holes have been capped and excavations have been backfilled.

Regardless of location, the following steps are to be taken to aid natural rehabilitation of tracks, drill sites, sump excavations, etc. as soon as practicable after exploration is complete:

- Remove all garbage and waste material. Fill in all holes, trenches, and sumps with the stockpiled subsoil and compact it.
- Backfill excavations with the stockpiled subsoil and topsoil.
- Re-contour disturbed topography, particularly natural drainage patterns, as much as possible.
- Contour rip-cleared or compacted surfaces to prevent erosion and to trap seeds. Compacted areas should be ripped to a depth of 0.5 m where practicable.
- Cap all drill holes.
- Spread topsoil (or surface material useful for regeneration or re-vegetation) over all disturbed areas as a rooting medium for re-vegetation.
- Spread any cleared vegetation to trap wind-blown seeds, promote re-growth and minimize erosion.
- If necessary, spread fertilizer and an approved mix of seed over the disturbed area. (No exotic seeds are to be sown in native vegetated areas.)
- Fencing may be required in some areas of re-vegetation.
- Photographs should to be taken of sites before, during and after the operation where surface disturbance is expected.
- Rehabilitated areas should be monitored after exploration is complete either by physical inspection or by contacting the appropriate licensing authority.

10. REPORTING AND RECORDS MANAGEMENT

Incident Reporting and Investigation

Any significant environmental incident must be promptly reported and adequately investigated. Authorities must be notified as per regulations.

Examples of environmental incidents resulting from activities are:

- Hazardous materials spill
- Bush fire
- Introduction of noxious weeds or diseases
- Damage to a heritage, cultural or sacred site
- Contamination of surface or ground water
- Significant erosion requiring major rehabilitation

Summary of Reporting Contact Information

Department of Culture and Heritage		**(866)-934-2035 or (867) 975-5500**	
Regional Manager Wildlife	**Rob Harmer**	**(867)857-3172**	**RHarmer@GOV.NU.CA**
Conservation Officers			
Chesterfield Inlet		**(867)898-9130**	**chesterwildlife@qiniq.ca**
Rankin Inlet	**Johanne Coutu-Autut**	**(867)645-8084**	
Regional Biologist	**Mitch Campbell**	**(867)857-3171**	**mcampbell1@gov.nu.ca**
Fuel Spill Reporting			
Water Resources Manager	**Erik Allain**	**(867)975-4295**	
24 Hour Spill Report Line		**(867)920-8130**	

Figure 1: Luxx property location.

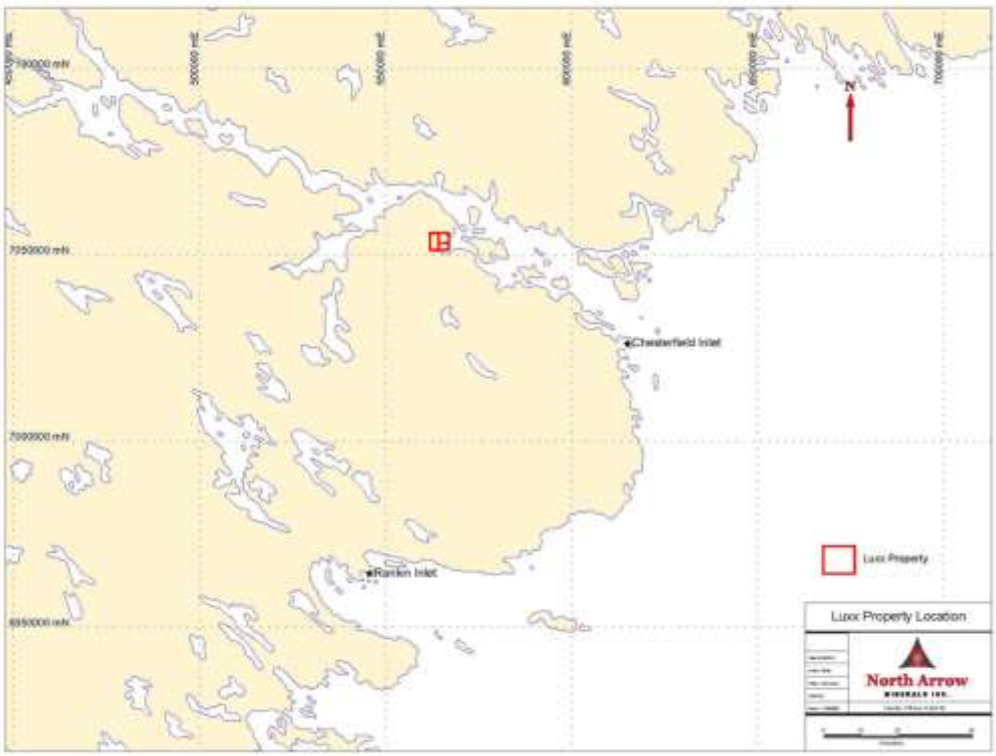

Figure 2: Luxx property close-up.