PILITAK ENTERPRISES LTD

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CONTRACTOR CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CCEMP)

Arctic Bay Harbour Development

CW2405837

Submitted to:

Public Services and Procurement Canada

Rev-01: May 2026

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May 19, 2026

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Environmental Monitor, JMB Consultant

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APPENDICES

List of abbreviations

Abbreviation	Full Name
ASPPR	Arctic Shipping Pollution Prevention Regulations
ARD	Acid rock drainage
ARDP	Archaeological Resource Discovery Plan
ATV	All-terrain vehicle
AWPPA	*Arctic Waters Pollution Prevention Act*
BMPs	Best Management Practices
CCG	Canadian Coast Guard
CCME	Canadian Council of Ministers of the Environment
CD	Chart datum
CEMP	Construction Environmental Management Plan
CCEMP	Contractor CEMP
CEPA	*Canadian Environmental Protection Act*
CMZ	Compliance monitoring zone
CNWA	*Canadian Navigable Waters Act*
CSA	Canadian Standards Association
CSP	Construction Staging Plan
CWP	Construction Work Plans
CWS	Canadian Wildlife Service
DAS	Disposal at Sea
DFO	Fisheries and Oceans Canada
DFO-SCH	DFO-Small Craft Harbours
DFO-FFHPP	DFO-Fish and Fish Habitat Protection Program
DG	Dangerous Good
ECCC	Environment and Climate Change Canada
ELC	Ecological land classification
EM	Environmental Monitor
EZ	Exclusion Zone
FAA	Fisheries Act Authorization
FFHPP	Fish and Fish Habitat Protection Program
GN	Government of Nunavut
GN-CGS	GN-Community and Government Services
GN-CH	GN-Department of Culture and Heritage
GN DoE	GN Department of Environment
GNWT	Government of Northwest Territories
HADD	Harmful alteration, disruption or destruction
HSERP	Health and Safety and Emergency Response Plan
HTA	Hunters and Trappers Association
HWL	High water line

IIBA	Inuit Impact and Benefit Agreement
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
INAC	Indigenous and Northern Affairs Canada
IOL	Inuit Owned Land
IQ	Inuit Qaujimajatuqangit
LUP	Land Use Permit
MBCA	*Migratory Bird Convention Act*
MCTS	Marine Communications and Traffic Services
MMMZ	Marine mammal monitoring zone
MMO	Marine Mammal Observer
MMR	Marine Mammal Regulations
MP	Monitoring Plan
MSDS	Material Safety Data Sheet
MSP	Marine Safety Plan
NavCan	Nav Canada
NAVWARN	Navigational Warning
NBRLUP	North Baffin Regional Land Use Plan
NIRB	Nunavut Impact Review Board
NOAA	National Oceanic Atmospheric Administration
NOTAM	Notice to Airmen
NPC	Nunavut Planning Commission
NRCan	Natural Resources Canada
NTUs	Nephelometric turbidity units
NuPPAA	*Nunavut Planning and Project Assessment Act*
NWNSRTA	*Nunavut Waters and Nunavut Surface Rights Tribunal Act*
NWB	Nunavut Water Board
OPPR	Oil Pollution Prevention Regulations
PEL	Pilitak Enterprises Ltd
PPE	Personal Protective Equipment
PSIR	Project Specific Information Requirements
PSPC	Public Services and Procurement Canada
QAA	Quarry Administration Agreement
QARP	Quarry Abandonment and Restoration Plan
QEC	Qulliq Energy Corporation
QEP	Qualified Environmental Professional
QIA	Qikiqtani Inuit Association
QBMP	Quarry and Blasting Management Plan
RA	Regulatory Authority
RMS	Root-mean-square
SAP	Sample and Analysis Plan
SARA	*Species at Risk Act*

SCH	Small Craft Harbour
SCOPs	Standards and codes of practice
SDR	Screening Decision Report
SDS	Safety Data Sheets
SEC	Sediment and erosion control
SEL	Sound exposure level
SPL	Sound pressure level
SPRP	Spill Prevention and Response Plan
TC	Transport Canada
TI NMCA	Tallurutiup Imanga National Marine Conservation Area
TMP	Traffic Management Plan
VHF	Very high frequency
WQG	Water Quality Guidelines
WSCC	Workers Safety and Compensation Commission

1. INTRODUCTION

The purpose of this document is to present the Contractor Construction Environmental Management Plan (CCEMP) in detail for the construction project of the new harbour in Arctic Bay, Nunavut.

The construction project was awarded to Pilitak Enterprises Ltd (PEL) in February 2026 by Public Services and Procurement Canada (PSPC) for the Department of Fisheries and Ocean (DFO). At the end of August 2026, heavy equipment, camp facilities and material will be delivered by sealift to Arctic Bay. The project consists mainly of the construction of a new breakwater with a fixed wharf, a boat launch ramp, small craft floating docks laydown area and lighting. The new marine infrastructure will be constructed during the summers of 2027, 2028 and 2029 while preparation work will be carried out during the fall of 2026.

This Construction Environmental Management Plan (CCEMP) outlines the environmental protection requirements and mitigation measures that will be adhered to throughout the project. It will provide a framework for developing and implementing safe and environmentally responsible practices that reduce the environmental and social effects of construction activities.

The current document uses the CEMP framework developed by Worley, the consultant for this project.

This CCEMP will be updated in accordance with the terms and conditions defined in the Nunavut Impact Review Board (NIRB) screening decision report, any additional consultation commitments, and other permit conditions. Revisions will also be made in the event of changes to the design, or to construction methods and procedures. The mitigation measures outlined in this CCEMP are based on guidelines, regulations, consultation comments and experiences in Pilitak.

1.1 ADDITIONAL DOCUMENTATION

The latest version of the following documents issued for the current project shall be used conjointly with the present Plan:

Document	**Current Revision**
Contract specifications and drawings	Issued for tender
Marine Safety Plan	To be submitted for review
Traffic Management Plan	To be submitted for review
Sediment and Erosion Control Plan	To be submitted for review
Spill Prevention and Response Plan	To be submitted for review
Quarry Blasting and Management Plan	To be submitted for review
Health and safety and Emergency Response Plan	Rev-00
Archeological Resource Discovery Plan	To be submitted for review
Wildlife Protection and Monitoring Plan	To be submitted for review
Waste Management Plan	To be submitted for review

2. REGULATORY FRAMEWORK

Construction and operation of the Project require securing permits and approvals from: federal, territorial, and municipal governments; Inuit boards; and the Qikiqtani Inuit Association (QIA). The Project has engaged with RAs, Inuit boards and the QIA to confirm that relevant legislation (and regulations), policies, protocols and BMPs have been captured in the C

CEMP for compliance. Table 2.2.1 provides a summary of the permits required for the project, the majority of which are held by DFO-SCH, although several are the responsibility of Pilitak.

2.1 ACTS AND LEGISLATION

Legislation pertinent to compliance requirements for the Project as delineated by the Project effects are summarized in this section.

2.1.1 International

- International Maritime Dangerous Goods Code (IMDG), International Maritime Organization (IMO), 2020 (IMO 2020)

2.1.2 Federal

- *Arctic Waters Pollution Prevention Act (AWPPA)*
  - Part 4(1) states that: "Except as authorized by regulations made under this section, no person or ship shall deposit or permit the deposit of waste of any type in the arctic waters or in any place on the mainland or islands of the Canadian arctic under any conditions where the waste or any other waste that results from the deposit of the waste may enter the arctic waters"
  - Arctic Shipping Pollution Prevention Regulations (ASPPR), under AWPPA: to be referenced in relation to fuelling in the marine environment and ship owner's liability provisions regarding spillage of waste
- *Canada Navigable Waters Act (CNWA)*
  - Section 3 states that: "Except in accordance in with this Act, it is prohibited to construct, place, alter,build, remove or decommission a work in, on, over, under, through, or across any navigable water"
- *Canadian Environmental Protection Act*
  - Interprovincial Movement of Hazardous Waste Regulations
  - Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations
  - Disposal at Sea Regulations
- *Explosives Act*
- *Transportation of Dangerous Goods Act*
- *Canada Shipping Act*
- *Oil Pollution Prevention Regulations (OPPR)*
- *Collision Regulations*

- *Fisheries Act*
  - Section 34.4(1): No person shall carry on any work, undertaking or activity, other than fishing, that
  - results in the death of fish.
  - Section 35(1): No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat.
  - Section 36: Subject to subSection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water.
  - Marine Mammal Regulations (MMR)
  - Aquatic Invasive Species Regulations

    Sections 6 to 10 prohibit any person to import, possess, transport, release, or introduce members of species set out in Part 2 of the schedule into or within areas detailed within the schedule, unless otherwise exempt as outlined within Sections 11 to 17.
- *Species at Risk Act (SARA)*
  - Section 2(1): wildlife species means a species, subspecies, variety or geographically or genetically distinct population of animal or plant.
  - Section 32(1): No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.
  - Section 33: No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.
  - Section 36(1): If a wildlife species that is not listed has been classified as an endangered species or a threatened species by a provincial or territorial minister, no person shall: (a) kill, harm, harass, capture or take an individual of that species that is on federal lands in the province or territory; (b) possess, collect, buy, sell or trade an individual of that species that is on federal lands in the province or territory, or any part or derivative of such an individual; or (c) damage or destroy the residence of one or more individuals of that species that is on federal lands in the province or territory.
  - Section 58(1) prohibits the damage or destruction of any part of designated critical habitat of a threatened, endangered, or extirpated species.
- *Migratory Birds Convention Act (MBCA)*
  - Migratory Birds Regulations

    Section 6: Subject to subSection 5(9), no person shall (a) disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird, or (b) have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefor.

2.1.3 Territorial

- *Commissioner's Land Act*
  - Commissioner's Land Regulations
- *Environmental Protection Act*

  - Part 5 states that: "*Subject to subSection (3), no person shall discharge or permit the discharge of a contaminant into the environment…Unless the discharge is authorized by this Act or the regulations or by an order issued under this Act or the regulations*"
  - Spill Contingency Planning and Reporting Regulations (R-068-93)
- *Explosives Use Act*
- *Fire Safety Act*
- *Nunavut Lands Claim Agreement Act:*
  - Article 13 Part 7 states that: "*With the exception of domestic or emergency use of waters as set out in Section 5 of the Northern Inland Waters Act RSC 1985, c. N-25, no person may use water or dispose of waste into water without the approval of the Nunavut Water Board*"
- *Nunavut Agreement*
  - Section 33 in part states that: "*a permit holder shall not survey, investigate, excavate or alter an archaeological site without the consent of the title holder to the land*."
- *Nunavut Act*
  - Nunavut Archaeological and Palaeontological Sites Regulations:
    Part 5(1) states that: "No person shall excavate, alter or otherwise disturb an archaeological site, or remove an archaeological artifact from an archaeological site, without a Class 2 permit."
- *Nunavut Planning and Project Assessment Act*
- *Nunavut Waters and Nunavut Surface Rights Tribunal Act*
  - *Nunavut Water Regulations*
- *Public Health Act*
- *Public Safety Act*
- *Transportation of Dangerous Goods Act*
- *Wildlife Act*
  - Section 90(1): No person shall intentionally feed a wild animal
  - Section 90(2): No person shall deposit or place in, on or about a place an attractant, if there is a reasonable likelihood that it would endanger a person, a wild animal or a domestic animal
  - Section 72(1): Unless lawfully harvesting eggs, no person shall injure, molest or destroy an egg of a bird
  - Section 72(2): Unless lawfully harvesting down, no person shall injure, molest or destroy (a) the nest of a bird when the nest is occupied by a bird or its eggs; or (b) the nest of any bird of prey or prescribed bird.
  - Section 73(1): No person shall, unless authorized by a licence, (a) engage in any activity, other than harvesting, that is likely to result in a significant disturbance to a substantial number of wildlife; or (b) break into, destroy or damage any abode of a bear, fox, beaver, muskrat, weasel, wolf or wolverine outside any municipality or prescribed area.
- *Territorial Land Act*
  - Territorial Land Use Regulations:
  - Part 16 states that: "If, in the course of a land use operation, a suspected historic or archaeological site or burial site is unearthed or otherwise discovered, the permittee shall immediately:
    (a) suspend the land use operation on the site
    (b) notify the engineer or an inspector of the location of the site and the nature of any unearthed materials, structures or artifacts"

2.1.4 Municipal

- *By-Law 54 Land Administration*

2.2 PERMITTING REQUIREMENTS

Table 2.2.1 summarises the environmental permits and licences relevant to the current project. Copies of each permit will be kept in a binder at the site office. Table 2.2.2 shows the reporting requirements and schedule for each permit and licence. A monthly permitting checklist (see Appendix 2) will be used to record all permit-related items. This information will be used to produce the annual reports.

Table 2.2.1: Permits and licences related to the environment

Regulatory Authority	Permit Type	Permit #	Related activity	Permit Holder
Institutions of Public Government				
Nunavut Planning Commission (NPC)	Conformity Determination	File No. 1150814 (07-Apr-2025))	Development of land and water resources within Nunavut	Fisheries and Oceans Canada, small craft harbour (DFO-SHC)
Nunavut Impact Review Board	Screening report	No. 21UN004 (04-Oct-21)	Any development of land and water resources within Nunavut as determined by NPC's conformity determination	DFO-SHC
Nunavut Water Board	Type B Water licence	8BCABH2125, (17-Dec-21)	Potential for diversion of small drainage ditch within SCH footprint	DFO-SHC
Nunavut Water Board	Type B Water licence	Amendment to the current licence to be issued	Withdrawal of freshwater for dust control and compaction.	DFO-SHC

Government of Nunavut – Community and Government Services (GN-CGS)	Land Use Permit (LUP)	Will be provided if required	Construction on Commissioners Land or Untitled Municipal Lands. If stockpiling occurs outside of the quarry area, the contractor may be required to obtain a Land Use Permit (LUP) from GN-CGS	Pilitak, if required
Federal				
Fisheries and Ocean Canada	Fisheries Act Authorization	20-HCAA-00155, issued 20-Dec-21	In water or near water works associated with the construction of the SCH that have the ability to result in the harmful alteration, disruption or destruction (HADD) of fish habitat or in the death of fish, as defined under the Fisheries Act.	DFO-SHC
Environment and Climate Change Canada (ECCC)	Disposal at Sea (DAS) Permit	PNR-00214-1, issued 21-Dec-21)	Disposal of dredged material at sea at an approved location.	DFO-SHC
Transport Canada (TC)	Navigation interference	2021-603772, Issued 14-Jan-22	In-water works associated with the construction and operations of the SCH that have the potential to interfere with navigation.	DFO-SHC
Natural Resources Canada (NR Canada)	Explosives usage and storage	To come	Transport, storage and acquisition of explosives. Blasting	Pilitak
Municipal				
Hamlet of Arctic Bay	Quarry permit	To come	Development, operation and closing of the quarry	Pilitak
Hamlet of Arctic Bay	LUP	To come	Land use for explosive caches.	Pilitak

Table 6.2: Reporting requirements and schedule

Permit	**Annual reporting due date**		**Reporting main topics**
	Regulator	*Permit holder*	
Fisheries Act Authorization (FAA)	March 31	No later than 5 weeks after seasonal shut downs.	- Project activities summary - Sediment and erosion control - Water turbidity - Fish and fish habitat impact mitigation measures - Underwater acoustic monitoring - Marine mammal observation
Water Licence (NWB)	March 31	No later than 5 weeks after seasonal shut downs.	- Water usage - Project activities summary & pictures - List of unauthorized discharges - Revised plans associated with the licence - Description of progressive & final reclamation works including pictures - Summary of the monitoring program
Screening report (NIRB)	March 31	No later than 5 weeks after seasonal shut downs.	- Project activities summary - Work plan for following year - Summary a community consultations - Transit through the project area - Wildlife observation and management - Analysis of effectiveness of mitigation measures for wildlife - Erosion and sediment control - Heritage site - Inuit land use nearby the project - Compliance with conditions
Explosives usage and storage (NRC)	--	--	Upon request from the inspector: - Explosive inventory - Magazine locations and conditions - Magazine inspections - Magazine key management
Disposal at sea (ECCC)		Provide reporting details within 5 weeks following seasonal shut downs or 2 weeks following permit expiration, which ever comes first.	Within 30 days of the permit expiration: - List of all work completed pursuant to the permit names and coordinates of the loading and disposal sites - Quantities and dates of matter disposed at sea

2.3 BEST MANAGEMENT PRACTICES AND GUIDANCE DOCUMENTS

The following guidelines, best management practices and guidance documents were referred to during the development of the CCEMP and its associated work plans:

- *DFO: Fish and Fish Habitat Protection Policy statement (DFO 2019a)*
- *DFO: Measures to Protect Fish and Fish Habitat (DFO 2023)*
- *DFO: Standards and Codes of Practice (DFO 2024)*
- *DFO: Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (DFO*
- *2013)*
- *DFO: Projects Near Water - Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat (DFO 2019d)*
- *DFO: Guidelines for the Use of Explosives in or Near Canadian Water (Wright & Hopky 1998)*
- *Best Management Practices for Pile Driving and Related Operations (BC Marine and Pile Driving Contractors Association 2003)*
- *National Oceanic Atmospheric Administration (NOAA): 2024 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (NOAA 2024)*
- *Environmental Protection Service, and Environmental Guideline for Dust Suppression (GN 2014).*
- *Government of Canada: General nesting periods of migratory birds (ECCC 2024a)*
- *Government of Canada: Guidelines to reduce risk to migratory birds (ECCC 2023)*
- *Government of Canada: Guidelines to avoid disturbance to seabird and waterbird colonies in Canada (ECCC 2024b)*
- *Government of Nunavut: Non-native and invasive species in Nunavut (Government of Nunavut 2022b)*
- *Government of Nunavut: Contingency Planning and Spill Reporting in Nunavut. A Guide to the New Regulations (Government of Nunavut 2022a)*
- *Indigenous and Northern Affairs Canada (INAC): Guidelines for Spill Contingency Planning (INAC 2013)*
- *ECCC: Guidelines for the Preparation of Hazardous Material Spill Contingency Plans (ECCC 1990)*
- *Emergency and continuity management program, Canadian Standards Association (CSA) Z1600-14, 2014 (CSA 2014)*
- *TC: National Oil Spill Preparedness and Response Regime (Transport Canada 2019)*
- *Canadian Construction Association: A Best Practices Guide to Solid Waste Reduction (Canadian Construction Association 2001)*
- *Arctic Bay Harbour Development – Construction Environmental Management Plan Advisian 35 Rev. 2 : 317071-00037-00-EN-PLN-0003*
- *Government of Nunavut, Department of Environment (GN DoE):*
- *Environmental Guideline for the General Management of Hazardous Waste (GN DoE 1999)*
- *Environmental Guideline for Used Oil and Waste Fuel (GN DoE 2012)*
- *Environmental Guidelines for Industrial Waste Discharges into Municipal Waste and Sewage Treatment Facilities (GN DoE 2011)*
- *Government of Northwest Territories (GNWT):*
- *Northern Land use Guidelines, Pits and Quarries (GNWT 2015b)*

- *Northern Land Use Guidelines, Access: Roads and Trails (GNWT 2015a)*
- *NIRB: Abandonment and Restoration Plan (NIRB 2021)*
- *National Research Council Canada: National Fire Code of Canada, 2020 (National Research Council Canada 2020)*
- *Workplace Hazardous Materials Information System (WHMIS) (Health Canada 2023)*

3. PROJECT OVERVIEW

The project consists mainly of the construction of a new breakwater with fixed wharf, a boat launch ramp, small craft floating docks laydown area and lighting. The new marine infrastructure will be constructed during the summers of 2027, 2028 and 2029 while preparation work will be carried out during summer/fall 2026.

3.1 KEY FEATURES

The design of the small craft harbour layout consists of the following key features:

- One large breakwater structure that provides a sheltered basin for vessel mooring
- Dredging for the construction of the breakwater
- Dredging of berth pocket and approach channel
- Dredging of the inner harbour
- A fixed wharf structure accessible via a road on the breakwater crest
- A laydown area, for storage of materials and goods containing
- A community boat launch
- Two strings of floating docks, with the ability to expand to four floating docks, within the basin
- Drainage features (i.e., culverts and ditches)
- Harbour lighting along the breakwater access road, fixed wharf and floating docks landing area, and electrical service on the fixed wharf

3.2 CONSTRUCTION SUPPORTING FACILITIES

In addition to the physical components of the Project, the following activities will be carried out during construction:

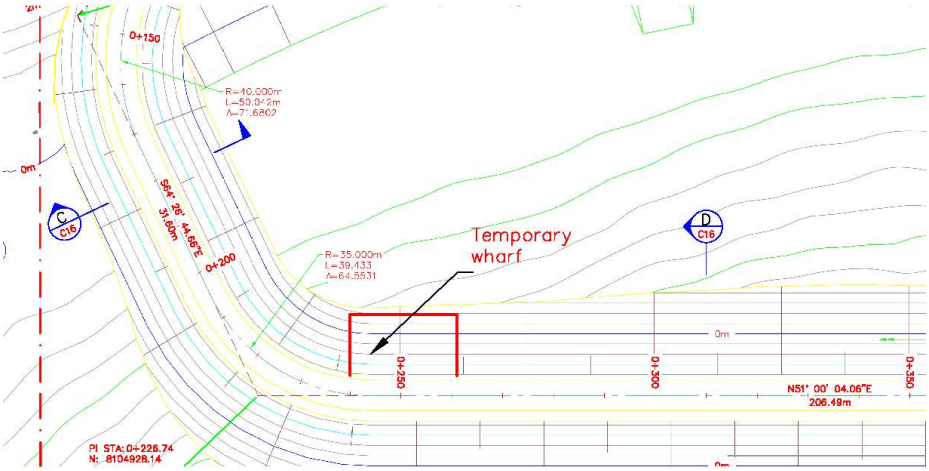
- Establishment of a construction camp and a maintenance garage
- Installation of construction offices
- Establishment of a temporary construction staging area
- Installation of temporary wharf
- Quarry development and operation (drilling, blasting, excavation)
- Rocks and granular material production
- Dredging and disposal of dredged material (at sea and on land)
- Pile driving
- Infilling

PEL currently has a worker camp set up on Lots 333 and 334, which are located 350 metres north-west of the community tank farm. The camp currently has 15 rooms, with an additional 24 rooms to be installed after the 2026 sealift. The camp location is presented in Figure 3.1. However, this satellite image was taken before the camp was erected. A maintenance garage and staging area will be set up on the land to the east of the community tank farm. This area is already occupied by our equipment. The site offices will be installed in front of the construction site, on lots 215 and 216, as shown in Figure 3.2. A temporary wharf will be constructed on the north side of the new breakwater. It will be made with steel sheet piles that will be installed with a vibro-hammer. After its usage, it will be removed the same way. The construction details will be submitted for review.

Figure 3.1: Worker camp, maintenance garage and staging area location

Figure 3.2: Site offices location

Figure 3.3: Temporary wharf location



3.3 SCHEDULE

The main schedule features are listed below:

Fall 2026 (August-October)

- Mobilization to Arctic Bay of equipment and supplies
- Camp, maintenance garage and offices installation
- Quarry development and material production
- Construction site preparation

Summer-Fall 2027 (June-October)

- Quarry operations and material preparation
- Temporary wharf construction
- Breakwater construction (partial)
- Zone D dredging and infilling (partial)
- Zone C dredging and infilling

Summer-Fall 2028 (June-October)

- Fixed wharf construction
- Quarry operations and material preparation
- Breakwater construction
- Zone D dredging and infilling (final)
- Temporary wharf removal
- Existing breakwater demolition
- Zone B dredging
- Zone A dredging and anchor blocks installation
- Laydown area

Summer-Fall 2029 (June-August)

- Electrical
- Shoreline grading
- Laydown area final grading
- Float abutment
- Breakwater corrections and final grading
- Dredging corrections
- Floating wharf installation and demonstration
- Commissioning, substantial & final completion
- Demobilization

3.4 EQUIPMENT

The following table summarizes the main equipment to mobilize to Arctic Bay to perform the contractual work.

TABLE 3.1 Equipment list

Qty	Type	Description	Use
6	Transport trucks	Articulated dump truck Komatsu 300	Moving rocks and granular material
2	Front end loader	Komatsu 500	Loading rock and moving cargo/equipment
1	Compactor	Single drum vibratory roller Dynapac CA2500D	Compacting road surfacing
1	Dozer	Caterpillar D6	Placing granular material and regrading surfaces
1	Grader	Caterpillar 140G	Road maintenance, final grading
4	Excavators	2 x Komatsu PC-650 1 x Komatsu PC-490 1 x Komatsu PC-490	Loading rocks in trucks, clearing the blast, loading the screening/crusher/ rip-rap, rock placement, dredging
2	Drill	Sandvick DX-800	Drilling for blasting
1	Fuel Truck	International, 11,500L	Daily refueling and servicing of major mobile equipment
1	Water truck	Freightliner, 10,000 L	Construction, dust suppression, and miscellaneous water
2	Mechanical service truck		On site vehicle maintenance
1	Screener plant	JCI FT6203	Aggregate production
1	Rock crusher - Primary	Pioner FT2650	Aggregate production
1	Rock crusher - Secondary	JCI FR300	Aggregate production
1	Rip Rap Plan	Lippman	Rock sorting
1	Lowbed and tractor truck	International	Moving equipment and material
10	Pickup truck	Various	Crew transportation
1	Mini-bus	15 passengers	Crew transportation

1	Crawler crane	Liebherr HS8200, 200T capacity + roundnose and rock handling grab	Dredging and rock placement
1	Vibro-hammer		Sheet pile installation
1	Spud barge	36 x 15 m, sectional	Dredging and rock placement
2	Dump scow	2 barges, 100 T capacity	Disposal at sea
1	Tug boat	900 HP	Moving scow and spud barge
1	Work boat	150 HP	Crew transportation and servicing
1	Work boat	60 HP	Servicing

Most of the equipment will be stored and prepared for winter in the staging area next to the tank farm. The crawler crane, spud barge and dump scows will be stored at the second sealift beach landing area, which is located southeast of the power plant. The crushing and screening equipment will remain at the quarry for the duration of the entire project.

4. ROLES AND COMMUNATIONS

4.1 ROLES AND RESPONSIBILITIES

The requirements to meet regulatory commitments will be undertaken by DFO-SCH, the Construction Administration Team, and the contractor's team. The roles and responsibilities for each team with respect to management of environmental performance on the project are set out below. The responsibility for the application of this CCEMP encompasses all Project personnel from management to construction workers.

The roles and responsibilities of each party are summarized in the below table:

TABLE 4.1 ROLES AND RESPONSIBILITIES

Organization	Roles and Responsibilities
Fisheries and Ocean Canada (DFO) - Owner representative: Adele Butcher - Project manager: Eleanor McEwan - Project engineer: Steven Kolt - Project engineer: Austin Church - Environmental: Chris McDermid	**Owner of the harbour facility** - Communicating with RAs on matters related to permitting and regulatory compliance. - Continued consultation with the community and Hamlet. - Reviewing and approving the CCEMP. - Reviewing and approving CWPs. - Coordination with the contractor to manage and communicate on compliance issues. - Transmitting monitoring reports and incident notices to regulators, community members and groups, as necessary
Public Services and Procurement Canada (PSPC) - Project manager: Mitchell Partaker - Backup PM: Kenton Thiessen - Contracting Officer: Mike Fagan	**Administrator of the contract** - Representing Canada in the oversight of the project. - Obtaining appropriate approvals and ensuring funding is in place. - Evaluating and certifying claims, and payments, progress. - Overall project monitoring - Applicability of guidelines & regulations
Worley - Project manager: Chris Meisl - Contract administrator: Andre Dratwa - Site representative: to be confirmed	**Project Consultant** - Design - Construction monitoring - Inspection and follow-up - QA

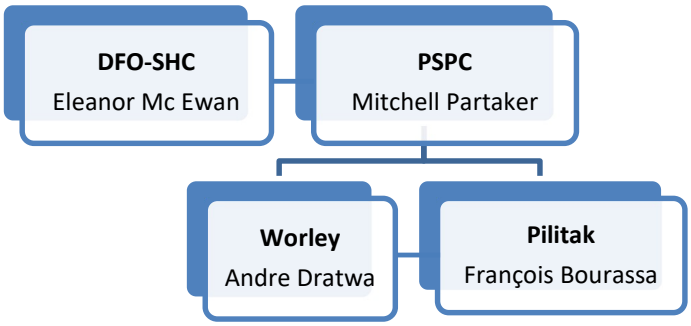
Pilitak Enterprises Ltd - General Manager René Déziel - Project manager: François Bourassa - Site Superintendent: John Fraser - Site Superintendent backup: Manuel Bellemare	**General Contractor** - Supply and deliver the project material - Supply and deliver the equipment to complete all phases of the project - Supply and operate camp/office facilities - Deliver the project according to specs & drawings
JMB Consultant - Jean-Marc Ballard, Environmental Monitor	**Environmental Monitoring** - Ensure that works are completed in compliance with the applicable regulations, permits, legislation, and the approved CWPs, CEMP and CCEMP. - Ensure due diligence for works near aquatic habitats, or other water courses, is being conducted.
Centurion Fondation - Project manager: Pascal Mathieu	**Sheet piling and dredging sub-contractor** - Installation of sheet piling and components of the fixed wharf - Dredging
Hamlet of Arctic Bay - Chief administration officer: Roberto Moretti - Mayor : Olayuk Naqitarvik - Public Work : to be confirmed	**Project user** - Local permits - Local employment - Local knowledge - Hamlet services
Nunanut Eastern Arctic Shipping Inc. (NEAS) - Claudia Iskra **Nunavut Sealink & Supply (NSSI)** - Daniel Desgagnés	**Sealift for cargo** - Marine Transportation booking, delivery and reception **Sealift for cargo and bulk fuel & gasoline** - Marine Transportation booking, delivery and reception
Petroleum Product Division (PPD) - Nathaniel Hutchinson	**Bulk fuel and gasoline** - Planning, ordering and coordination for the supply of bulk fuel, gasoline and jet fuel to the different communities in Nunavut
Hunters and Trappers Organization - to be confirmed	**Wildlife resources and activities management** - Sustain the hunting and harvesting activities - Local knowledge on wildlife and resources - Small craft harbour access and coordination

4.2 COMMUNICATION

4.2.1 Communication between contract stakeholders

The main lines of communication for the contract administration are illustrated in Figure 4.2.1.1 and the on-site communication in Figure 4.2.1.2.

FIGURE 4.2.1.1: Contract Administration lines of communication



The preferred communication channel is email. The following individuals shall be included in all email correspondence:

PSPC: Mitchel Partaker and Kenton Thiessen (CC)
Worley: Andre Dratwa and Chris Meisl (CC)
Pilitak: François Bourassa

Direct communication between the Worley team and the Pilitak team is acceptable, provided that the PSPC Project Manager is copied on all email correspondence.

All contractual matters, including non-monetary items, must be communicated through the PSPC Project Manager.

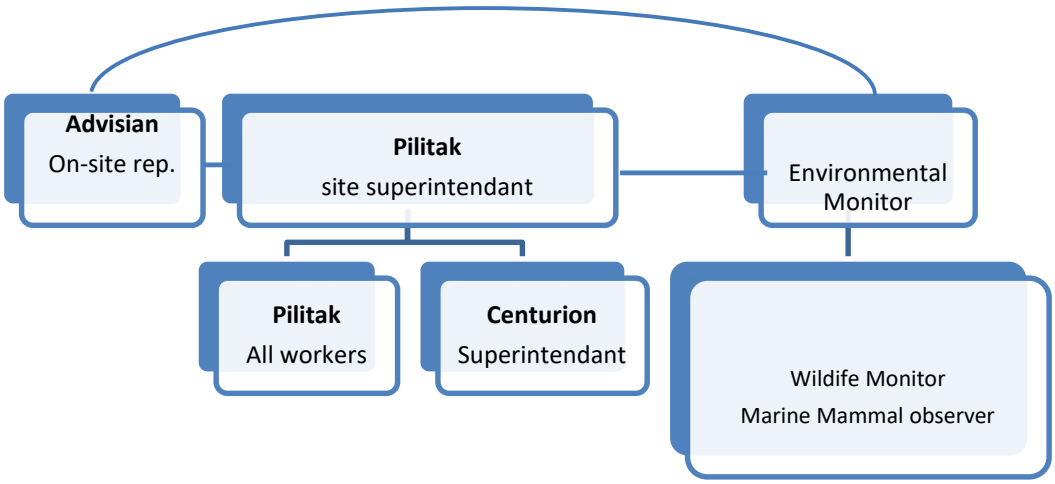
Project submittals must be uploaded to BIM, with an email notification sent to both PSPC and Worley.

In the case of project team personnel taking a period of leave, the responsible party will inform of alternate contact arrangements.

Communication protocols specific to health and safety emergencies, environmental emergencies, traffic management, blasting notifications, marine mammal observations, wildlife encounters, stop-work procedures, and harbour access coordination are covered in the respective plans issued for this project.

All Pilitak personnel and subcontractors are responsible for preventing environmental incidents and are required to immediately report any actual or potential environmental incident, hazard, or non-compliance observed on the project to the Environmental Manager (EM) and the Site Superintendent.

FIGURE 4.2.1.2: On-site lines of communication



4.2.2 Contract contact information

Org./ Company	Name	Role	Email Address	Tel#
PSPC	Mitchell Partaker	Project manager	mitchell.partaker@tpsgc-pwgsc.gc.ca	(431) 374-9078
PSPC	Kenton Thiessen	PM backup	kenton.thiessen@pwgsctpsgc.gc.ca	(204) 229-6375
PSPC	Mike Fagan	Contracting Officer	Mike.Fagan@tpsgc-pwgsc.gc.ca	(204)-296-5375

DFO	Adele Butcher	Owner representative	adele.butcher@dfo-mpo.gc.ca	(204) 391-2116
DFO	Eleanor McEwan	Project manager	Eleanor.mcewan@dfo-mpo.gc.ca	(204) 805-3828
DFO	Chris McDermid	Permitting Regulatory	chris.mcdermid@dfo-mpo.gc.ca	(431) 335-7530
DFO	Austin Church	Project engineer	austin.church@dfo-mpo.gc.ca	(431) 277-1019
DFO	Steven Kolt	Project engineer	steven.kolt@dfo-mpo.gc.ca	(431) 337-5809
Worley	Andre Dratwa	Contract administrator	Andre.Dratwa@worley.com	(778) 945-5233
Worley	Chris Meisl	Project manager	Chris.Meisl@worley.com	(418) 730-2965
Worley		Site representative		
Pilitak	René Déziel	General Manager	rdeziel@gely.biz	(418) 571-8889
Pilitak	François Bourassa	Project Manager	fbourassa@gely.biz	(418) 930-0850
Pilitak	John Fraser	Site superintendent	jfraser@gely.biz	(902) 578-9184
Pilitak	Manuel Bellemare	Site superintendent backup	mbellemare@gely.biz	(819) 531-7469
JMB Consultant	Jean-Marc Ballard	Environmental Monitor	jmboxy@hotmail.com	(418) 800-2615

4.2.3 Communication with the hamlet

Our main point of contact with the hamlet will be the chief administration officer (CAO), Roberto Moretti. Any matter that could need to be reviewed or approved by the hamlet will be brought to the CAO who will follow up with the council. Communication for such a request will be done by email only. The following topics, as examples, will need to be reviewed by the hamlet:

- Traffic Management Plan (original plan and updates)
- Harbour area access
- Fencing plan
- Explosive storage
- Dust control
- Noise and dust control

The hamlet authorities and the population will be notified 3 days in advance before starting the installation of the sheet piling. This operation can generate substantial noise.

The table below shows the different communication channels that will be used to keep the residents of Arctic Bay aware of the various construction activities:

Activities	**Communication mode**
Presentation of all activities	Community meeting at the beginning and at the end of each construction season
Blasting at the quarry	Local radio, Facebook page, NAV Canada, Airport CARS, FM radio channel 2
Traffic on hamlet roads and maintenance	Traffic Management Plan for more details, hamlet office CAO and Forman for maintenance and concerns. Vehicles to stay in contact with traffic control personnel on FM radio, channel 2. Local radio for reminders to ask to the resident to stay vigilant during transporting hours.
Marine works and sheet piling installation	Facebook page for planned activities, local radio for special activities, HTA office for wildlife, FM radio channel 2 for communication between workers and drivers, use buoys markers and lights to define the work area
Water / sewage services	Hamlet Forman
Wildlife interaction	Local radio, FM radio channel 2 and HTO office

4.2.4 Hamlet contact information

Name	**Role**	**Email Address**	**Phone #**
Roberto Moretti	Chief administration officer	cao@arcticbay.ca	Office: (867) 439-9917 Cell Phone: (867) 445-1585
Sam Willy	Hamlet Foreman		Cell Phone: (867) 222-0727

4.2.5 Community concerns

Any concerns or complaints from the community can be addressed as follows:

- Verbally to the site superintendent or to the office clerk
- Verbally or by writing to the Departmental Representative (Worley)
- By writing, complaint forms will be available at the site office and at the hamlet office

- By email to the office clerk (cstemarie@gely.biz)

Pilitak will be responsible for tracking and recording community concerns, and for reviewing them with the Departmental Representative during weekly meetings. If it is determined that an actionable step is required, this will be recorded for each item, along with any necessary follow-up. A running tally of all concerns will be kept for each season. On a monthly basis, the departmental representative will submit a copy of the complaints, actionable items and follow-up monitoring to the hamlet council. At the end of each construction season, a site walkthrough will be completed with the Hamlet Council and the HTA, providing an opportunity to raise concerns. The seasonal list of all concerns will be reviewed and items that are considered one-time events and unlikely to occur again the following season will be removed from the list. Items identified as having the potential to reoccur will be carried forward to the next season for monitoring. All seasonal concerns will be collated in one table and submitted in the NIRB annual report.

4.3 EM DETAILED ROLES AND RESPONSIBILITIES

Duties of the EM include but are not necessarily limited to:

- Assist with the preparation of CWPs in advance of construction, with updates as required for changes in methodology, legislative requirements, or due to adaptive management.
- Conduct regular monitoring with additional presence based on the sensitivity of construction activities or when extreme adverse conditions are anticipated on site.
- Undertake monitoring during below HWL construction and any other higher risk activities, such as equipment encroachment near aquatic environments (freshwater, marine), or those associated with emergency events.
- Monitoring of stressors on aquatic species, fish kills, and any fish spawning/migration activity.
- Sightings and behavioural observations of terrestrial wildlife, including any injured wildlife observed.
- Monitoring of any sensitive habitat features and buffers identified during the pre-construction terrestrial wildlife sweep.
- Monitor chance to find species at risk.
- Monitor for large congregations of seabirds and communicate with project personnel to avoid those areas while the birds are present.
- Conduct field inspections, taking necessary environmental samples to confirm compliance with the CCEMP and other relevant CWPs for all contractor works.
- Record monitoring results, environmental compliance, and corrective actions.

- Prepare routine and incident reporting to Pilitak/DFO-SCH/PSPC.
- Instruct crews to suspend construction activities that do not accord with standards included in this CEMP, associated CWPs, or following an Environmental Incident.
- Routinely check to verify that equipment in use at the project site is in good working condition.
- Routinely check to determine that the required emergency response materials, including the spill kits, are on site and appropriately stocked during project construction.
- Communicate with all contractor personnel and provide training on environmental compliance requirements.
- Coordinate with the contractor's staff, including all sub-contractors, to confirm compliance with the CCEMP and CWPs; government regulatory, approval and permit conditions, procedures, and field instructions from the Construction Administration Team.
- Lead training and awareness: promotion of environmental protection by contractor's staff, including the implementation of best management practices and procedures.
- Manage a data management system to securely store, manage, and transfer raw data collected during EM requirements (e.g. acoustic files, turbidity files) to DFO-SCH/PSPC.
- Supervise and direct marine mammal observation and wildlife monitoring.
- Draft reports to regulatory authorities.

5. CONTRACTOR CONSTRUCTION WORK PLANS

The following construction work plans will be submitted as separate documents. Each plan will be reviewed on an annual basis or when needed.

5.1 MARINE SAFETY PLAN

The Marine Safety Plan is intended to minimize traffic interferences for the community and confirm that Inuit harvesting rights are not impacted. It is also to confirm that mitigation measures are being undertaken as per the TC approval to minimize navigational interferences.

5.2 TRAFFIC MANAGEMENT PLAN

This plan details the measures and procedures that will be employed to manage construction traffic and avoid or mitigate traffic conflicts during construction.

5.3 SEDIMENT AND EROSION CONTROL PLAN

This plan details the measures and procedures that will be employed to control site runoff and prevent and mitigate erosion and sedimentation during construction. It also addresses the dust control and the permafrost protection measures.

5.4 SPILL PREVENTION AND RESPONSE PLAN

This plan provides Project personnel with guidance on the required actions to prevent and respond to fuel or hazardous material spills. If a spill were to occur, the following actions would be taken, as described in the plan:

- Immediately stop work activities and assess the hazard to persons and the environment.
- If possible and safe to do so, stop the source of the spill. Shut down sources of ignition.
- Spill kits to contain spills will be stored at all working sites and in all vessels.
- Identify spilled material and consult MSDS for appropriate containment and clean-up procedures.
- Determine if additional external clean-up support is required.
- Spilled hazardous material, such as fuels or lubricants, will be contained and transferred into an appropriate container; remaining residues would be mixed with unconsolidated absorbent materials and transferred into appropriate containers.

- Containers with spilled material will be sealed and transported south for disposal in accordance with applicable regulations following the Waste Management Plan.
- Reportable spills (more than 100 L) will be reported to the Nunavut Department of Environment 24-hour spill report line (1-867-920-8130).

5.5 QUARRY BLASTING AND MANAGEMENT PLAN

This plan details the measures and procedures that will be employed during the development of the quarry and during the reclamation.

5.6 HEALTH AND SAFETY AND EMERGENCY RESPONSE PLAN

The objective of the health and safety programme is to inform and protect all personnel and visitors to the work site about potential and known hazards, in order to minimise workers' exposure to hazardous situations and protect the public from any hazards or nuisances originating from the site.

5.7 ARCHAEOLOGICAL RESOURCE DISCOVERY PLAN

The Archaeological Resource Discovery Plan (ARDP) is intended to confirm appropriate measures are in place should there be an archaeological discovery.

5.8 WILDLIFE PROTECTION PLAN

This plan sets out the measures and procedures that will be implemented to monitor wildlife and avoid conflict with it during construction, wherever possible. Mitigation measures are also proposed for certain specific activities.

5.9 WASTE MANAGEMENT PLAN

The waste management plan categorises waste according to its type and nature. This includes disposal at local facilities, as well as shipment and disposal at facilities in the south. The expected waste generated by the project activities, along with the general plan for its storage and disposal, is outlined below:

- Waste from unpacking (wood crates and pallets, metal strapping…)
  Most of the wooden crates and pallets are kept in order to be re-used for the demobilization. Extra crates and remaining packaging wood will be offered to the

community members in order to be reused for different projects as shack construction for fishing and hunting. The metal strapping will be collected and containerized for off-site transportation and recycling. The plastic wrapping will be transported to the local disposal facility.

- Waste from camp operations
  The various plastic and glass containers, cardboard boxes, plasticware, Styrofoam cups, food waste, and other waste generated from bathrooms and living quarters will be transported to and disposed of at the local disposal facility. Empty tin and aluminum cans will be crushed and containerized for off-site recycling. Any household hazardous waste will be collected, packaged, and shipped off-site. All food, food waste, and other attractants will be handled, stored, and disposed of in a manner that prevents attracting and habituating animals. The sewage water from the camp operation will be collected by the hamlet sewage truck and disposed of at the hamlet sewage lagoon.

- Waste from construction site
  At the end of the project, all siltation protection devices will be removed, cleaned, and containerized for off-site shipment. Any leftover geotextile and wood will be offered to community members for reuse. Unclaimed geotextile will be placed with the siltation devices and shipped off-site. Explosives packaging (e.g., bags, cardboard) will be disposed of by controlled combustion. The Blaster will collect all empty explosives packaging and burn it at the local disposal facility. Other waste generated from blasting operations, consisting mainly of plastic materials, will be collected after use and disposed of at the local waste facility.

- Waste from the garage operation
  Wood will be managed as described earlier in this section. Clean plastic containers will be disposed of at the local disposal facility, while contaminated containers (e.g., with grease or oil) will be treated as hazardous waste and shipped off-site for disposal. Old tires and used mechanical parts will also be shipped off-site for refurbishing or disposal.

- Hazardous waste
  Waste oil and antifreeze will be collected separately in 205 L drums. The drums will be labelled, palletized, and stored in the hazardous waste temporary storage area (HWTSA). Waste filters (oil and fuel) and empty grease containers will be collected and placed in salvage drums. Waste batteries will be placed in used battery containers and stored in a marine container located within the HWTSA. Used granular absorbent material will also

be collected in salvage drums. Used absorbent pads and contaminated rags will be collected in plastic bags and placed in the marine container located in the HWTSA.

6. MITIGATION AND MONITORING

The effectiveness of environmental protection measures will be assessed regularly. Monitoring will occur throughout construction with the frequency and type of monitoring dependent on the construction activities taking place. Routine inspections of construction activities will be carried daily.

6.1 PROJECT PERMIT AND APPROVAL COMPLIANCE

The EM will be present full time during key construction activities (terrestrial- and marine-based). The project activities will be suspended in the case where injured fish, marine mammals, or terrestrial wildlife is observed during any works or activities in and around the SCH, haul road, or quarry. Stop work procedures are defined within the next sections.

Copies of all project permits, approvals and authorisations issued by RAs must be kept on site at all times. The EM will carry out monthly site inspections to ensure compliance with these permits. For this purpose, the permitting checklist included in Appendix 2 will be used.

6.2 GROUND STABILITY AND PERMAFROST

No equipment or vehicles are permitted unless the ground surface can fully support them without rutting or gouging. If rutting occurs, overland travel of equipment or vehicles must be suspended. Measures to mitigate any potential rutting will be implemented if required. Embankment thickness shall be suitable to limit disturbance to thermal regime. The haul road will be visually monitored to identify any concerns regarding ground stability. The appropriate measures will be taken to stabilise and maintain the haul roads regularly. The haul road monitoring will be part of the daily environmental report, as attached to Appendix 1.

If hazardous road conditions are experienced, the site superintendent will order the hauling operation to cease until the road conditions become safe again. If the EM observes significant routing or road deterioration, he will issue a stop work order and the hauling operation will cease until the necessary corrections have been made.

6.3 SURFACE FEATURES

The Project will be conducted in a manner that minimizes surface disturbance outside of the Project site. Before and after pictures of the project areas will be taken. The project areas will be

returned to the Hamlet to their original condition, or as directed by the Hamlet, upon completion of construction.

6.4 HYDROLOGY

Work will be carried out to minimise the number of water crossings where possible, and they will be appropriately sized when required. Work site boundaries will be marked to prevent the inadvertent loss or alteration of habitats. During road construction, water flow in lowland areas will be maintained by installing culverts and/or other drainage techniques as deemed appropriate. The Hamlet will provide the water supply for construction camp operations. The water required for dust control will be withdrawn in accordance with the conditions included in the water licence.

The EM will use the environmental daily report to record the volume of water withdrawn, how it was used and where. The site superintendent shall plan daily water usage with the EM to ensure that the daily capacity does not exceed the requirements of the water licence.

6.5 AIR QUALITY

During construction activities, air quality could be affected by emissions from equipment and dust generated during the preparation and transportation of aggregates and rocks. In order to minimize the emissions, all equipment will be maintained in good working order, according to our maintenance program. The amount of time that equipment is left idle will be kept to a minimum wherever possible.

The dust generated by crushing and screening activities will be controlled using a water mist, which will be applied as required. Dust generated by material transportation will be mitigated through proper road maintenance and speed limits. Water and/or a dust suppressant will be spread on the haul road when needed. Dust suppressants will be in accordance with the GN Department of Sustainable Development, Environmental Protection Service, and Environmental Guideline for Dust Suppression (Government of Nunavut 2002).

Calcium chloride will be added to the hauling road as required using a two-tonne spreader installed at the back of a pickup truck. The manufacturer's recommended application rate is one tonne per kilometre for a 10-metre-wide road. Depending on the weather conditions and the volume of traffic, several applications could be carried out during one summer.

The site superintendent and the EM will monitor the haul road and dust conditions. The quantities and areas of dust suppression, as well as water usage, will be recorded in the daily environmental report. Water usage must comply with the conditions of the water licence.

6.6 NOISE

Construction activities will generate noise at the quarry, along the haul road and at the construction site. Blasting or pile driving will be restricted to 12 hours/day. The Hamlet and residents will be advised in advance of planned noise-causing activities, such as pile driving and blasting.

In accordance with the authorisation issued for the current project under the Fisheries Act, "*If construction is to occur during the iced-season, in-air sound levels shall not exceed the in-air acoustic threshold of 100 dB re 20µPa when pinnipeds are observed on the ice during construction activities.*"

During the ice season, if pinnipeds are observed within 100 metres while work is being carried out, the EM will monitor the sound level with a sound meter. If the measured sound exceeds 100 dB re 20 µPa, the EM will issue a stop work order. The working procedure will then be reviewed in order to reduce the sound level.

When carried out, the sound measurements will be recorded on the daily environmental report.

6.7 SEDIMENT, WATER QUALITY AND EROSION CONTROL

No deleterious substances (e.g. fuel, chemicals, waste) shall be deposited into any aquatic environment (freshwater, marine) waterbodies. The Erosion and Sedimentation Control Plan will detail all measures to be taken to mitigate the impact of construction activities on the aquatic environment. In the event of the accidental release of a deleterious substance into the environment, the Spill Prevention and Control Plan will detail the emergency procedures to be followed.

6.7.1 Surface water

The EM will be monitoring all surface runoff or discharges impacted by construction activities associated with the Project, where flow may directly or indirectly enter Water. The EM will perform daily visual inspections to make sure that land-based activities do not result in sediment or other deleterious substances entering aquatic environments (freshwater, marine). The EM will

implement adequate silt and erosion protection measures and will be in charge of verifying their effectiveness and their maintenance.

According to the water licence, all surface runoff or discharges impacted by construction activities associated with the Project, where flow may directly or indirectly enter Water, shall not exceed the following effluent quality limits:

Parameter	**Maximum Average Concentration (mg/L)**	**Maximum Concentration of Any Grab Sample (mg/L)**
Total Suspended Solids	50.0	100
Oil and Grease	No visible sheen	No visible sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

Measures to control sedimentation and erosion (silt fences, sediment traps, check dams…) will be installed at the start of the project in areas where construction activities could impact water quality. The exact locations of these measures will be determined in summer 2026. Depending on the progress of the project, additional measures may be added.

It is the duty of the environmental monitor to ensure that the erosion and sediment control measures are properly installed, well maintained and functioning as intended. However, it is the responsibility of everyone to report any ineffective erosion and sedimentation control measures or those in need of repair. The inspection of the erosion and sediment control measures will be part of the environmental monitoring daily routine. These inspections and repairs will be reported.

The EM will monitor the surface runoff from the quarry area and the construction site. Particular attention will be given to the inflow to Dog Lake and the Alternate Water Supply Lake located at each end of the quarry area. Surface water is transiting on the construction site by the existing culvert and drainage pattern. The quality of the surface water flowing from upstream of the construction site could be affected by activities unrelated to the construction project. Monitoring points will be set up upstream and downstream of the site to establish whether project activities are impacting the quality of the surface water.

The total suspended solids (TSS) measurements will be conducted on site with a Hatch portable meter HATSSMETER that measures turbidity and the total suspended solids. The respective range of the probe for TSS and turbidity are between 0.001 to 400 g/L and 0.001 to 9999 FNU. The pH

values will be measured with a Hanna HI98127 pH meter. All measurements will be included within the daily environmental reporting.

The exact control points will be established during the Summer / Fall 2026.

6.7.2 Marine environment

Some project activities include in-water work, such as filling and dredging. These activities could generate fine particles that affect water turbidity. As per the Fisheries Act Authorization issued for the current project, "*Turbidity sampling shall be taken outside the work area and is not to exceed turbidity levels as per the Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Aquatic Life for the duration of the in-water works including but not limited to dredging, disposal at sea, and rock placement*".

These quality guidelines stipulate that:

1- "*Turbidity (NTU) Allowance Over Background ("Induced" Turbidity): Maximum increase of 8 NTUs from background levels for a short-term exposure (e.g., 24-h period).*
2- *Maximum average increase of 2 NTUs from background levels for a longer-term exposure (e.g., 30-d period) in all waters during clear flow.*
3- *Maximum increase of 8 NTUs from background levels at any one-time when background the floating levels are between 8 and 80 NTUs. Should not increase more than 10% of background levels when background is >80 NTUs for high flow or turbid waters.*

Two Aqua-Troll 500 real-time turbidity measurement devices mounted on a rugged buoy will be installed in the ocean outside the work areas to monitor variations in turbidity. The devices will be installed before the start of the construction activities in order to determine the background turbidity level. The system will send real-time turbidity measurements via the Vulink cellular network. One buoy will be installed outside the area designated for sea disposal, while the other will be installed outside the new harbour construction site. The proposed locations are presented in **Figure 7.2.2**. The exact locations will be determined on site. Manual turbidity measurements will also be performed when a sediment plume is observed. All data will be recorded on the *Hydrovu* platform and summarized in the daily environmental report.

During the ice season, turbidity will be measured through holes drilled in the ice. During the shoulder seasons, turbidity will be measured from a boat, where feasible, or from existing infrastructure (e.g., breakwaters).

Figure 7.2.1: *Turbidity Monitoring Point T1 and T2*

The variation of the turbidity will be monitored at the two control points T1 and T2 to determine if the short- and long-term criteria are exceeded. If a turbidity variation of over 8 NTU is observed within 24 hours and this increase can be directly attributed to construction activities, the construction methodology will be reviewed with the site superintendent to reduce the impact on water turbidity. The long-term exposure criterion will be evaluated over a period of 30 days. Exceeding this criterion may also require some work procedures to be modified.

6.8 TERRESTRIAL VEGETATION

All project activities will be carried out in a way that minimises negative effects on terrestrial vegetation. Project personnel will receive the necessary training in this regard to protect the vegetation.

Upon arrival from the sealift, vehicles and equipment will be inspected to ensure they are clean and free of soil, invasive plants and/or their seeds. If such observations are made, the vehicle or

piece of equipment in question will be separated from the fleet and transported to the maintenance garage for cleaning. This operation will be done under the supervision of the EM.

6.9 WILDLIFE, MIGRATORY BIRDS AND SPECIES AT RISK

A pre-construction terrestrial wildlife (including migratory and marine birds) sweep will be conducted by the EM or a qualified wildlife biologist, within seven days of initiating work in a Project area. Works must not begin until this sweep has been completed and confirmed that additional mitigation measures are not required. The sweep should include the Project area plus a 100 m buffer. The purpose is to identify sensitive wildlife and their habitat features, such as active bird nests, wildlife dens, and wildlife foraging or traveling routes. Where work has not started within seven days following the wildlife sweep, the area should be re-swept for new wildlife features (e.g. nests) that may have been established in the interim. In the event a sensitive species or habitat feature is identified, buffers (work exclusion zones) will be implemented to minimize disturbance to wildlife until the feature becomes no longer active (e.g. until the young have permanently left the nest). Buffers will be based upon 'alert' and 'flush' behaviour distances of individuals as determined by the EM and/or standard government-recommended setback distances

A Wildlife Protection Plan will be issued at the start of the project. This plan will include, but not be limited to, the following items:

- A zero tolerance policy regarding the harassment, disturbance, and feeding wildlife whilst working on the Project
- Polar bear sightings will be reported immediately so that appropriate actions can be taken to avoid conflict situations.
- If there are large flocks of marine or migratory birds near the Project during sound producing activities (such as pile driving), the EM will document their behaviour to confirm there are no adverse reactions. Work may need to be paused to allow birds to resume normal activity if birds continually flush or appear agitated by the activities.
- No blasting will occur within established buffers from protected wildlife habitat features
- Work site boundaries will be flagged to prevent inadvertent loss or alteration of habitat outside of the designated Project footprint
- Project personnel will receive training to minimize negative effects to wildlife
- Speed limits will be implemented to minimize negative effects to wildlife
- Waste management
- Roles of the wildlife monitors

- Roles of the marine mammal observer
- Species at risk

Wildlife observations within the project area will be recorded in the daily environmental report and will include, when possible, the location (i.e., latitude and longitude), species, number of animals, a description of the animal activity, and a description of the gender and age of animal.

The presence of observed wildlife will be communicated to all workers by radio.

6.10 FISH AND FISH HABITAT (INCLUDING MARINE MAMMALS)

The following sections describe the main project activities that could potentially conflict with or impact marine fish and wildlife. Stop work orders and mitigation measures are presented for each of these activities.

6.10.1 Infilling in water

The construction of the breakwater and the infilling of dredging areas B and D require large volumes of rock to be transported by truck from the quarry to the site and placed in the water. The transportation of the material will be carried out on the hamlet roads, according to the Traffic Management Plan. Construction of the breakwater will begin in autumn 2026 and continue during the 2027–2028 construction seasons. Infilling of the dredge areas C and D will be performed during the 2027–2028 construction seasons.

All types of rock to be placed into water must be free of fines. The seabed where the breakwater will be built consists mainly of a compact silty sand. Minor disturbances of the seabed could occur during the placement of the material that will form the breakwater. Based on the above information, the construction of the breakwater should not generate a considerable amount of suspended solid in the surrounding waters. Suspended solid is primarily fine inorganic particles of clay and silt (typically < 0.063 mm. It also may include fine sand (0.63-0.250 mm) and particulate organic matter suspended in the water column. As explained in section 6.7 of the current document, the turbidity will be monitored during the placement of the material into water. The results will be compared to the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life. In the case where the measured turbidity would exceed the guideline values, mitigation measures will be implemented. These measures could include the modification of the rock placement methodology.

The EM will issue a stop work order relating to infilling activities in water if one or more of the following conditions is observed:

- Rough sea conditions.
- Fluid/fuel spill from vehicle or equipment.
- Marine mammal (s) is observed within 50 meters of the work area.
- Unusual high values of turbidity monitored.
- Any occasion where a marine mammal is observed to be stressed within the vicinity of the project a stop work order could be considered among the EM, and supervisors.
- Fish kill/injury or stress to aquatic wildlife is observed near the site.

The following mitigation measures will be implemented to avoid or minimise conflicts with marine fish and wildlife during infilling in water operations:

- Monitor the water turbidity during the dredging operations, refer to section 6.7.2
- For equipment working below the high-water level, use biodegradable and non-toxic lubricant and grease.
- Maintain equipment in good running order to prevent leaking or spilling of potentially hazardous or toxic products.
- Construction equipment operators must remain vigilant for marine mammals and ensure that the minimum approach distances are maintained.
- Do not refuel the equipment on the dredging temporary roads and keep a minimum distance of 30 meters from water bodies.
- Install spill kits at the work area and train the employees according to the Spill Prevention and Contingency Plan

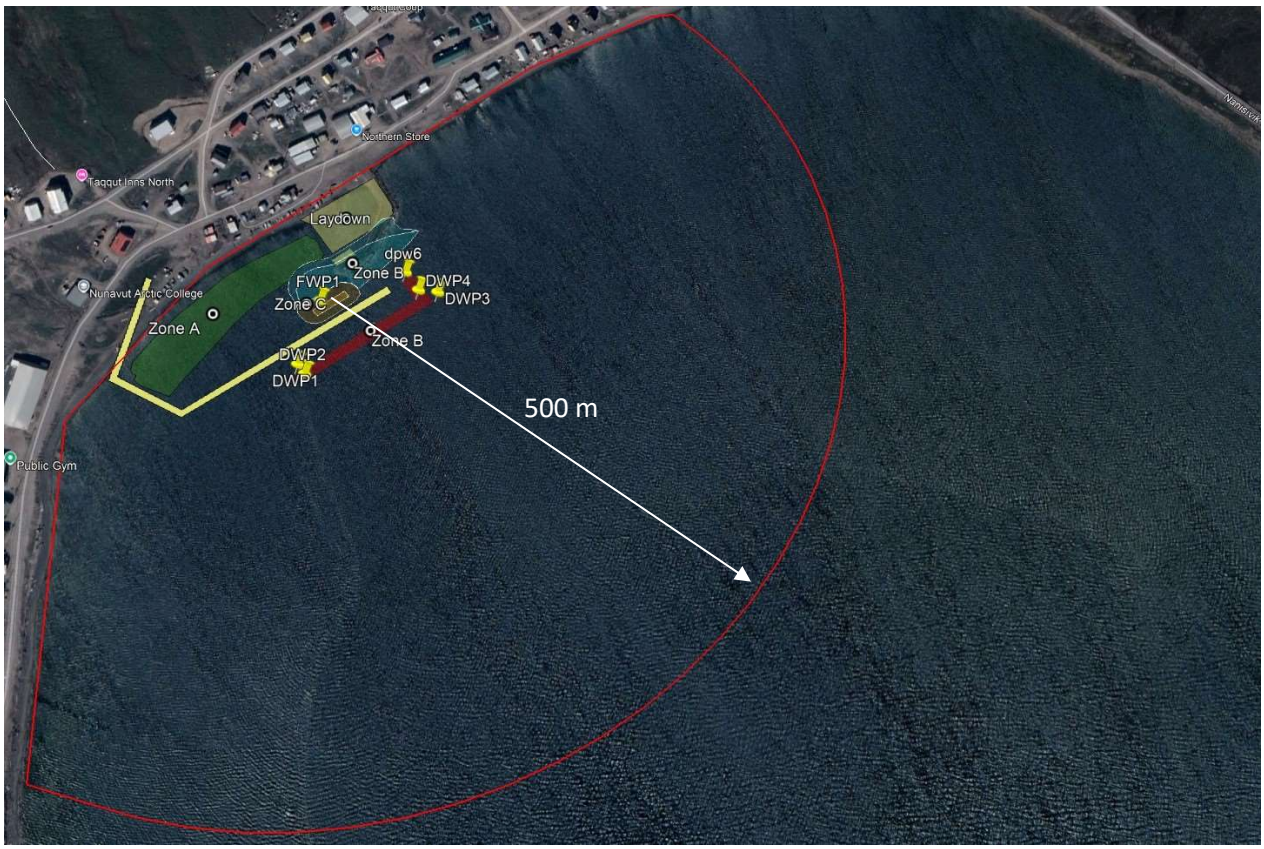
6.10.2 Temporary wharf and fixed wharf construction

Construction of the temporary and fixed wharves includes installing steel sheet piling below the seabed level. All sheet piles will be installed using a vibro-hammer. If the vibratory equipment is not suitable, an impact hammer will be used to reach the designed depth. Construction of the temporary wharf will take place in July 2027, while construction of the fixed wharf will take place in June 2028. As indicated in the Fisheries Act Authorization issued for this project, "*A qualified environmental professional(s) shall conduct acoustic monitoring during pile driving to verify water noise levels*". *A minimum 500 m marine mammal exclusion zone shall be established around the construction activities (pile driving site) and monitored as outlined in the Arctic Bay Application.*

Before the piling work begins, an exclusion zone for marine mammals will be established at a minimum distance of 500 metres from the piling area. This zone could be extended according to the preliminary results of the underwater acoustic monitoring program. An experienced and qualified marine mammal observer will be present at all times during the pile driving and will monitor for marine mammals within the exclusion zone for at least 30 minutes prior to the start of pile driving. If a marine mammal enters the exclusion zone, pile driving shall be suspended until the individual has left the exclusion zone or has not been sighted for 30 consecutive minutes. Visual references will be established to ensure that the entire exclusion zone is covered. Visual markers could be added when needed. In iced conditions, a drone will be used before starting the sheet piling operations to verify the presence of breathing holes within the exclusion zone. This allows the marine mammal observer to focus their observations on these specific areas.

If a marine mammal is observed close to or inside the exclusion zone, the MMO shall advise the EM and the site superintendent immediately. The EM will issue a stop work order to assess the situation, determine the necessary actions and implement the appropriate mitigation measures before work can resume.

Figure 6.10.2: Marine Mammal Exclusion Zone



Underwater acoustic monitoring shall be performed during the pile driving. According to the Fisheries Act Authorization, underwater sound levels and sound pressure levels shall not exceed the threshold of 160 shall not exceed the threshold of 160 dB_{RMS} re: 1µPa beyond the marine mammal exclusion zone. The exclusion zone will be arbitrarily established to a minimum of 500 meters but could be increased according to the monitoring program early results. According to the CEMP, the sound levels and sound pressure levels shall not exceed 206 dB re1 µPa Peak Sound Pressure Level (PeakSPL) at 10 m from the noise generating activity.

Hydroacoustic sound measurements will be made using Ocean Sonics (OS) Smart Hydrophone (icListen SC2-ETH-X2) technology. The OS hydrophone system is specifically built for noise construction monitoring and consists of a hydrophone that is rated for 900m maximum depth and a frequency response ranging from 10 Hertz (Hz) to 200 kHz, which is sufficient given that most of the acoustic energy of pile driving is included between 20 and 20,000 Hz. OS provides a complete stand-alone underwater noise measurement solution that enables the interpretation and the safeguard of data using their software. The system is also comprised of an electronic recorder with real-time position tracking using GPS link.

The hydrophones will be installed at 10 meters and at 500 meters from the piling activity. If piling is carried out during the iced-season, the hydrophones will be installed from the ice surface. During the ice-free season, the hydrophones will be deployed from either a boat or a buoy.

The environmental monitor will issue a stop work order relating to the piling activities if one or more of the following conditions are observed:

- Inappropriate weather conditions (strong wind or waves).
- Fluid/carburant spill from vehicle or equipment.
- Marine mammal (s) observed within the exclusion zone.
- Underwater sound levels and sound pressure levels exceed the regulatory thresholds.
- Fish kill/injury or stress to aquatic wildlife is observed near the site.
- Turbidity exceedance.

The following mitigation measures will be applied to avoid or reduce conflicts with the marine fish and wildlife during the piling activities:

- An experienced and qualified marine mammal observer (MMO) will be present at all times during the pile driving.
- The MMO will confirm that no marine mammal has been observed within the exclusion zone for 30 minutes prior to initiating piling.
- If a marine mammal enters the exclusion zone, impact pile driving will be suspended until the individual has left the exclusion zone or has not been sighted for 30 consecutive minutes.
- Soft start procedures with vibratory piling equipment: initiate the hammer at 40-60% reduced energy, followed by 1 minute of inactivity prior to resuming the piling works.
- Soft start procedure for impact hammering: provide an initial set of three strikes from the impact hammer, followed by 1 minute waiting period, then followed with two subsequent three strike sets.
- Considering that piling activities could occur during the iced-season, in-air sound level shall not exceed the in-air acoustic threshold of 100 dB re 20µPa when pinnipeds are observed within the exclusion zone.
- Project-related vessels shall maintain vigilance for marine mammals, document sightings, and employ minimum distances and best practices if within 100 m of any marine mammals.
- Construction equipment operators must remain vigilant for marine mammals and ensure that the minimum approach distances are maintained.

6.10.3 Dredging Zones B, C and D

The dredging of the zones B, C and D will be carried out during the 2027-2028 construction seasons. These 3 areas will be dredged using a dredging crane mounted on a barge and equipped with a clamshell bucket. The excavated material will be loaded onto scows with a capacity of 100 m^3, transported to the area designated for disposal at sea, and dumped into the water via the opening of the bottom doors.

In accordance with the permit issued by Environment Canada, the ACB-01 disposal site is bounded by the following coordinates (NAD 83):

73.02603° N, 85.15421° W
73.02603° N, 85.14472° W
73.02334° N, 85.15421° W
73.02334° N, 85.14472° W

The route to the disposal site is the most direct navigational route from the loading sites. The permittee must maintain an up-to-date Register of Disposal at Sea Activities as provided by the Department of the Environment. This register must be kept on board any vessel involved with the disposal operations and be accessible to enforcement officers designated under CEPA.

At all times, a paper or digital copy of this permit and of documents referenced in must be available at the loading site and on all powered ships directly engaged in the loading and disposal operations. The documents must be accessible to enforcement officers designated under CEPA for the duration of the permit.

The daily estimated dredged volumes will be indicated on the environmental report.

Once the dredging season is completed, an annual written report shall be submitted to the Minister within 30 days after the expiry of the permit. The report shall include a list of all work completed pursuant to the permit, including the names and coordinates of the loading and disposal sites used, the quantity of matter disposed of at the disposal site, the dates on which disposal activities occurred and the Register of Disposal at Sea Activities.

The material to be dredged includes fines, which will affect water turbidity during the excavation process and when the material is disposed of at sea. Water turbidity will be monitored as set out in section 6.7.2. The dredging operation will take place during the day shift only, which will allow time for the sediment to settle during the night.

A stop work order in relation to the dredging activities will be issued by the EM when one or more of the following conditions is experienced:

- Inappropriate weather conditions. Dredging activities will be scheduled to avoid periods of high wind and wave action that may increase re-suspension of sediment.
- Fluid/carburant spill from vehicle or equipment.
- Marine mammal (s) observed within 50 meters of the work area.
- High values of turbidity monitored, refer to section 6.7.2
- When spillage of dredged material occurs while transporting it to the disposal area.
- Fish kill/injury or stress to aquatic wildlife is observed near the site.

The following mitigation measures will be applied to avoid or reduce conflicts with the marine fish and wildlife during the dredging activities:

- Project-related vessels shall maintain vigilance for marine mammals, document sightings, and use of minimum distances and best practices if within 100 m of any marine mammal and if whales are with calf or resting, a 200 m minimum distance should be applied.
- Vessels must follow the guidance for marine mammals and protected areas as outlined in the most recent Notice to Mariners published by the Canadian Coast Guard.
- Monitor the water turbidity during the dredging operations, refer to section 6.7.2.
- Scows are to be loaded to prevent spillage of material during transit from the dredged site to the area designated for disposal at sea.
- Maintain equipment in good running order to prevent leaking or spilling of potentially hazardous or toxic products.
- Vessels to be equipped with marine spill kits.

6.10.4 Dredging Zone A

Dredging of Zone A will take place during the 2028 construction season. This will be done using a long-reach excavator via temporary access roads built perpendicular to the shoreline. The temporary roads will be built with material containing no fines. With the help of a long-reach excavator, the seabed will be excavated down to the specified grades and loaded into dump trucks. The excavated material will be transported by dump trucks to the dumping site, where it will be spread out. This site consists of the southern end of the existing harbour, which will be

enclosed by a rock and geotextile berm. According to the design, the entire area will be filled with material excavated from Zone A.

The Em will issue a stop work order relating to the dredging of zone A if one or more of the following conditions is observed:

- Inappropriate weather conditions. Dredging activities will be scheduled to avoid periods of high wind and wave action that may increase re-suspension of sediment.
- Fluid/carburant spill from vehicle or equipment.
- Marine mammal (s) observed within 50 meters of the work area.
- High values of turbidity monitored, refer to section 6.7.2
- Fish kill/injury or stress to aquatic wildlife is observed near the site.

The following mitigation measures will be implemented to avoid or minimise conflicts with marine fish and wildlife during dredging activities:

- Monitor the water turbidity during the dredging operations, refer to the section 6.7.2
- Truck boxes are to be tightly closed to prevent spillage of material during transit from the transfer area to on-site disposal site.
- Install floating silt curtains when required and if conditions allow. The floating silt curtains will be installed in a way to provide an escape path for the fish that could have been trapped in the work area.
- For equipment working below the high-water level, use biodegradable and non-toxic lubricant and grease.
- Maintain equipment in good running order to prevent leaking or spilling of potentially hazardous or toxic products.
- Construction equipment operators must remain vigilant for marine mammals and ensure that the minimum approach distances are maintained.
- Do not refuel the equipment on the dredging temporary roads and keep a minimum distance of 30 meters from water bodies.
- Install spill kits at the work area and train the employees according to the Spill Prevention and Contingency Plan

6.10.5 Blasting near water

Two lakes are located within the quarry area. Alternate Water Supply Lake is situated approximately 600 metres northwest of the northern quarry boundary, while Dead Dog Lake is located approximately 25 metres south of the southern boundary.

According to DFO guidance for explosives in or near fish habitat,"*no explosive is to be detonated in or near fish habitat that produces, or is likely to produce, an instantaneous pressure change (i.e., overpressure) greater than 100 kPa (14.5 psi) in the swimbladder of a fish"*. This parameter will be considered in the Quarry Development Plan, and appropriate setbacks will be applied. Overpressure in the water resulting from blasting will be monitored to verify that it remains below 100 kPa.

6.11 ARCHAEOLOGICAL AND CULTURALLY SIGNIFICANT SITES

An Archaeological Resource Discovery Plan will be issued at the start of the project. This plan will include, but not be limited to, the following items:

- Measures to be taken if historical or paleontological features (e.g. stone features, stone tools, modified bone, fossils) not previously recorded are identified within the construction footprint during construction.
- Suspend work immediately in the vicinity of any newly discovered archaeological, palaeontological, historical, or traditional land use site.
- Take pictures and coordinates of the site.
- Contact Government of Nunavut – Department of Culture and Heritage.
- Work may not resume until the Government of Nunavut has provided all required guidance and confirmation.
- Project personnel will be prohibited from collecting any archaeological or paleontological materials.

6.12 TRAINING REQUIREMENTS

Every PEL employee or subcontractor personnel who will access the site must attend the worker orientation seminar. During this meeting, presented at the beginning of every working season or as needed for newly hired employees, the health and safety program will be presented and explained. During this seminar, each employee will be provided with the "Employee Occupational Health & Safety Handbook", which summarizes the most relevant company H&S policies, rules

and practices. Attendees must complete and sign the test sheet in the handbook and the related record for each employee must be completed and kept in the H&S employee file.

Environmental briefings will be provided to employees through toolbox meetings. The following elements will be discussed:

- Wildlife protection
- Waste management
- Permafrost and vegetation protection
- Archaeological and Culturally Significant Sites
- The Erosion and Sediment Control Plan
- Permitting conditions and limitations

The following topics will be covered in special training sessions:

- Spill prevention and response
- WHMIS
- Handling of hazardous materials and wastes

Furthermore, the following subjects will be covered in the training for non-local workers:

- The camp rules
- Location of the different sites
- Cultural awareness
- The communication protocol

ARCTIC BAY HARBOUR DEVELOPMENT

CONTRACTOR CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX 1
ENVIRONMENTAL DAILY MONITORING REPORT FORM

PILITAK ENTERPRISES LTD

Environmental Monitoring Daily Report

Arctic Bay Small Craft Harbour Development

Date			
Day			
Tide			
EM			
MMO			
Wildlife Monitor			
Exclusion Zone	Exculsion 500 m or more for piling activities		
Weather	Sunny (1), Cloudy (2), Fog(3)		
	Rain (1), Snow (2), Blizzard (3), Other (4)		
	Mid day temperature (°C)		
	Wave conditions N: <0.1m, S: 0.1-0.25 m, M: 0.26-0.5m, L: > 0.5m		
	Wind (direction and average speed)		
Activities	Drilling / Blasting		
	Screeneing		
	Transport		
	Dredging		
	Infilling		
	Pilling		
	Sieving test on rocks		
	Other		
Wildlife	Wildlife Observation (Nb animals)		
	Wild life Mitigation (refer to daily wildlife monitoring)		

Environmental Monitoring Daily Report

Arctic Bay Small Craft Harbour Development

Water Turbidity (Ocean)	**Waterbody Turbidity** Increase 8 NTU from BG level 24 hr, Max increase 2 NTU from BG level 30 days.		
Erosion/sediment	**Erosion/sediment control & surface water Quality** All surface runoff or discharges impacted by construction activities associated with the Project, where flow may directly or indirectly enter Water, shall not exceed the following Effluent quality limits TSS: 50 mg/L max average, 100 mg/L max grab sample Oil & grease: No visible sheen pH: between 6.0 and 9.5		
Traffic Control	**Traffic Control measures**		
	Haul road conditions		

Environmental Monitoring Daily Report

Arctic Bay Small Craft Harbour Development

Hydroacoustic monitoring	**Hydroacoustic monitoring**. Underwater sound level threshold 160 dBRMS re: 1µPa within the exclusion zone and 160 dBRMS re: 1µPa at 10 meters.		
Dust control	Dust Control Calcium Chloride (Quantity) and area		
Water consumption	Water consumption from lake (m3/day) per NWB licence conditions. Usage description		
Spill / Unauthorized discharge	**Spill / Unauthorized discharge**. Use the NU spill line if more than 100 litres is spilled on the ground, or if any quantity is spilled in water.		
Stop Work Order	**Stop Work Orde**r. Describe nature and duration		
Explosive	Blasting at the quarry		
	Blasting oter place than quarry		
Vessels presence	**Vessels presence**		
Inuit Land use nearby project	I**nuit Land use nearby project.** Anyone who is crossing the working area to access territory need to be registered		
Waste management	Waste volume sent to the local facility		
	Hazardous waste stored at the staging area		
	Salvaged material given to the community		

ARCTIC BAY HARBOUR DEVELOPMENT

CONTRACTOR CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX 2
PERMITTING CHECK LIST

PILITAK ENTERPRISES LTD

Date of inspection:
Inspected by:

PERMITTING CHECK LIST **Arctic Bay Small Craft Harbour Development**	**NIRB**	**NWB**	**FAA**	**TC**	**EC**	**Compliance Y: Yes / NC: No NA: not applicable**	**Additional information**
1. Documentation and training							
A copy of the project terms and conditions shall be at the site	x						
NIRB and NPC files shall be at the site	x						
Applicable permits and documents shall be at the site	x	x	x	x	x		
Site to be operated according to applicable acts, regulations and guidelines	x						
Site to be operated according to applicable standards, permits and licences	x						
Adequate training for all personnel	x						
2. Local People							
Consult and inform the local resident	x						
Ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities	x						
Hire local people and access local services	x						
3. Wildlife							
Wildlife deterrent to keep wildlife away in case of spill	x						
Avoid alter or damage or destroy any wildlife habitat	x						
Do not chase, weary, harass or molest wildlife	x						
No hunting and fishing unless proper authorization in place	x						
Give wildlife right of way on any roads and trails	x						
Enforce speed limits	x						
Protect migratory birds	x						
Do not disturb or destroy nests or eggs of any birds	x						

PERMITTING CHECK LIST Arctic Bay Small Craft Harbour Development	NIRB	NWB	FAA	TC	EC	Compliance Y: Yes / NC: No NA: not applicable	Additional information
Avoid seaward site of seabirds colonies	x						
Do not pursue seabirds or waterbirds	x						
4. Spill prevention and control							
Spill Contingency Plan in place	x	x					
Spill of 100 L and more to be reported immediately to Spill Line	x						
Equipment refueling shall be done at 31 meters away from any waterbody.	x						
All hazardous waste will be transported south in sealed shipping containers for appropriate disposal. Provide record of backhauled and disposal of HW	x	x					
Conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other waste and contain potential spills.		x					
Prevent any chemicals, petroleum products or wastes associated with the Project from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High-Water Mark of any adjacent water body and inspected on a regular basis.		x					
5. Sediment and Erosion Control							
Install silt fence down stream of any quarry activities	x						
Do not obstruct natural drainage flooding or channel diversion	x						
Locate screening and crushing equipment on a stable ground	x						
Use existing trails where possible	x						
Ensure that Land use area is kept clean and tidy at all times	x						
Avoid disturbances on existing slopes	x						
If materials need to be stockpiled, they shall be stored in a manner that prevents entry into nearby waterbodies.			x				
Temporary waste disposal: minimum 31m from ordinary High Water Mark (OHWM)		x					

PERMITTING CHECK LIST Arctic Bay Small Craft Harbour Development	NIRB	NWB	FAA	TC	EC	Compliance Y: Yes / NC: No NA: not applicable	Additional information
Minimize impact on surface drainage		x					
monitor all activities for signs of erosion and shall implement and maintain sediment and erosion control measures prior to the undertaking to prevent entry of sediment into any water body.		x	x				
Minimize impact on surface drainage		x					
Ensure that camp is located on a durable surface	x						
Do not move equipment where ground capacity is inadequate	x						
Do not erect camp or store material on surface ice of lakes or streams	x						
6. Air quality							
Dust suppression measures	x						
Eliminate unnecessary idling	x						
7. Quarry Operation							
Stake and flag pit and quarry boundaries	x						
Locate pit and quarry sites away from recreational area	x						
Avoid drilling waste to spread the surrounding lands or water bodies	x						
Ensure that drill areas are built to minimize the footprint	x						
In the case where artesian flow is encountered, plug hole immediately	x						
Sump/depression capacities have a sufficient volume	x						
Drill hole are backfilled or capped	x						
Restore all disturbed areas	x						
8. Water usage and surface water monitoring							
Ensure that no deleterious substances enter into water	x						
Water usage TBC		x					
Total water daily consumption shall not exceed To Be Confirmed		x					

PERMITTING CHECK LIST Arctic Bay Small Craft Harbour Development	NIRB	NWB	FAA	TC	EC	Compliance Y: Yes / NC: No NA: not applicable	Additional information
Waste water (sewage) to be collected and disposed at the local sewage lagoon by the hamlet		x					
Water quality monitoring (surface runoff) TSS: 50 mg/L average with 100 mg/l max Oil & grease: no visible sheen pH: between 6.0 and 9.5		x					
Temporary waste disposal: minimum 31m from ordinary High Water Mark (OHWM)		x					
Water withdraw: To be Confirmed Water will be pumped into a water truck. The pump will have a maximum flow rate of <0.035 m3/s. Screen size requirements will be determined as per DFO's 'Interim code of practice: End of pipe fish screens'.		x	x				
Water for domestic camp purposes shall continue to be supplied by the Hamlet of Arctic Bay		x					
Record, in cubic metres, the daily quantities of Water extracted from (To be Confirmerd).		x					
9. In-water works at the harbour site							
Dredging activities shall be scheduled to avoid periods of high wind and wave action that may increase re-suspension of sediment.			x				
A qualified environmental professional(s) shall conduct acoustic monitoring during pile driving to verify water noise levels.			x				
A minimum 500 m marine mammal exclusion zone shall be established around the construction activities (pile driving site) and monitored as outlined in the Arctic Application.			x				
Underwater sound levels and sound pressure levels shall not exceed the threshold of 160 dBRMS re: 1µPa within beyond the marine mammal exclusion zone when conducting pile driving and near-water blasting at the quarry to protect marine.			x				

PERMITTING CHECK LIST Arctic Bay Small Craft Harbour Development	NIRB	NWB	FAA	TC	EC	Compliance Y: Yes / NC: No NA: not applicable	Additional information
If construction is to occur during the iced-season, in-air sound levels shall not exceed the in-air acoustic threshold of 100 dB re 20µPa when pinnipeds are observed on the ice during construction activities			x				
An experienced and qualified marine mammal observer(s) shall be present at all times during pile driving and shall monitor for marine mammals within the exclusion zone for at least 30 minutes prior to the start of pile driving. If a marine mammal enters the exclusion zone, pile driving shall be suspended until the individual has left the exclusion zone or has not been sighted for 30 consecutive minutes.			x				
A soft start procedure where the impact energy is gradually increased over a 10 minute period shall be employed. The soft start procedure shall be used each time there is a break of 30 minutes or more during impact pile driving activities.			x				
Vessels related to the construction of the project shall be operated as outlined in theArctic Bay Application to minimize the potential for negative interactions with marine mammals.			x				
Turbidity sampling should be taken outside the work area according to the Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Aquatic Life.			x				
If dead fishes or marine mammals are observed, works shall be suspended and DFO-FFHPP shall be notified within 48 hours. No work shall be recommenced until approved by DFOFFHPP.			x				
If underwater sound levels exceed the threshold of 160 dBRMS re: 1µPa at 500 m from the source, additional mitigation measures, such as the installation of bubble curtains and/or expansion of marine mammal exclusion zone, shall be implemented and DFO-FFHPP shall be notified.			x				
10. Dedging and disposal at sea							

PERMITTING CHECK LIST Arctic Bay Small Craft Harbour Development	NIRB	NWB	FAA	TC	EC	Compliance Y: Yes / NC: No NA: not applicable	Additional information
Most direct navigational route from the loading sites to the disposal site via hopper scow and/or flat scow.					x		
Disposal will be carried out by bottom dumping and/or end dumping.					x		
Records of all loading and disposal activities aboard any ship involved with the disposal operations. Maintain an up-to-date Register of Disposal at Sea Activities. Register must be kept on board any vessel involved with the disposal operations					x		
At all times, a paper or digital copy of the permit and of documents be available at the Loading site and on all powered ships directly engaged in the loading and disposal operations					x		
11. Navigation signs							
Signs stating Construction Ahead must be legible from a minimum distance of 100 metres, marked with retro-reflective material, visible from all points of marine approach, display black lettering on a yellow or orange background.				x			
Any portion of the work that is partially constructed shall be marked with cautionary buoy(s) and shall be maintained through all tidal ranges. (Replaced with marker signs on breakwater).				x			
Safe navigational access shall be provided for all users to the shoreline and shelter area during construction				x			