

APPENDIX 2

CLYDE RIVER HARBOUR CONSTRUCTION

EROSION AND SEDIMENT CONTROL PLAN (rev-03)

Submittals

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 DFO ETO-025-222050

Project No. : 2022-034

Subject : Erosion and Sediment Control Plan rev-03

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Manufacturer :

Description : Erosion and Sediment Control Plan rev-03

Supplier No :

Comments :

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EROSION & SEDIMENT CONTROL PLAN

Clyde River Harbour Development

DFO ET025-222050/A

Submitted to:

Public Services and Procurement Canada

Rev-03: December 2023



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1. INTRODUCTION

The purpose of this document is to present the Erosion and Sediment Control Plan (ESCP) employed to control site runoff and to prevent and mitigate erosion and sedimentation during the construction of the new harbour in Clyde River, Nunavut. In-water construction activities have the potential to temporarily affect marine water quality and increase turbidity and total suspended sediment (TSS) in the harbour. Dredging and the placement of materials can also result in the resuspension of sediment.

The construction project was awarded to Pilitak Enterprises Ltd (PEL) in May 2022 by Public Services and Procurement Canada (PSPC) for the Department of Fisheries and Ocean (DFO). At the end of August 2022, heavy equipment, camp facilities and material were delivered by sealift to Clyde River. The locations of the different sites are indicated on the Figure 1. The project consists mainly of the construction of two large breakwaters, a fixed wharf structure, two lines of float wharf modules, a retrofit of the existing sealift ramp and improvements to the uplands. The new marine infrastructure construction started during the summer 2023 and will be completed during the summers 2024 and 2025.

This ESCP includes the identification of the activities that are susceptible to generate erosion and/or sedimentation, the mitigation measures, the description of the protection equipment to be used and the monitoring and reporting. This ESCP is part of the Environmental Management and Mitigation Measures that are being implemented to protect the environment during construction. These measures will help maintain compliance with the Federal Fisheries Act, especially Sections 34 to 36 of the Act, which prohibits any activities, other than fishing, that results in the death of fish, including the deposition of deleterious substances into waterbodies frequented by fish. This ESCP will allow as well to comply with the conditions detailed within the other applicable permits for the current project:

- Nunavut Water Board Water Licence No: 8BC-CLY2225
- Nunavut Impact Review Board screening decision report No. 21YN032

Figure 1 : Sites locations



1.1 OBJECTIVE AND DEFINITIONS

Erosion and sedimentation are natural processes of loosening and transporting soil through the action of wind, water, and the subsequent movement and deposition of sediment particles. Construction activities can result in increased erosion and sedimentation. The dredging activities will generate important volume runoff water which will require appropriate mitigation measures. The importance of erosion and sedimentation control is primarily to reduce the potential impact that erosion has on watercourses. Soil consists of many components, the majority of which are organic material, sand, silt and clay. It is the silt and clay that are the most damaging to watercourses as they are comprised of small particles that can be carried for long distances while suspended in water. Small silt and clay particles can cloud the water making it difficult for fish to find food, and also block sunlight reaching aquatic plants. When small silt and clay particles settle on the bottom, they can smother fish and amphibian eggs. There is an added risk that eroded soil may carry hard metals, traces of petroleum product or other pollutants from land into a watercourse. The effects of sedimentation in watercourses can be profound enough to be considered deleterious (harmful or damaging) to fish.

Erosion

Occurs when energy (water in this case) is applied to a soil surface causing the detachment, suspension and transfer of soil particles from a stable mass. The objective is to reduce the water flow that could loosen the soil particles.

Sedimentation

The process whereby the energy of water carrying soil particles is reduced down to the point that those suspended particles are allowed to settle out and be deposited, creating a build-up of sediment at that location. The objective is to create a sedimentation low point in order to reduce the energy and have all the size particles deposited before it enters any water bodies, rivers and streams.

Deleterious

The federal Fisheries Act defines it as “Any substance that, if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use of by man of fish that frequent that water” (Canadian Fisheries Act).

Wind can be a mechanism of erosion, particularly for dry, finely textured soils with low organic content that is exposed by construction activities. Wind erosion can influence local air quality on the project site and be a source of sediment for water bodies. Areas of potential wind erosion are mainly roads and stockpiles.

1.2 EXISTING SURFACE AND VEGETATION CONDITIONS

Most of Clyde River's town and airport are built atop thick, terraced, raised marine and glaciomarine sandy sediments that contain saline permafrost. According to the geotechnical investigation done for this project, the native soils at the harbour water lot and at the harbour uplands primarily consist of silty sand to sand with silt and gravel. It is acknowledged that the sediments present on site are susceptible to be easily transported and will need special attention in order to minimise the erosion and sediment processes during the different construction phases.

2. EROSION RISKS IDENTIFICATION AND MITIGATION MEASURES

This section describes the risks and presents the mitigation measures. The following construction activities have been identified as operations that could potentially generate erosion and siltation.

- Quarrying (drilling, blasting, excavation)
- Rock crushing
- Haul road and river crossing upgrades
- Breakwater construction
- Dredging and disposal of dredged material

It is important to understand that sedimentation controls themselves are only employed as a second line of defense. Sedimentation controls are designed to provide a place for water to slow down and allow the particles to be deposited that the primary erosion controls were unable to prevent. Sediment fencing does not “filter” the water but rather are meant to slow down the water and allow fine soil particles or other potentially deleterious materials to settle behind it. Other measures related to sediment control will be implemented when necessary and when possible, as the installation of floating silt curtain in the ocean, culverts, ditches, berm construction, embankment work and grading of the working surface.

2.1 QUARRY ACTIVITIES

For construction of the breakwaters, a large amount of rock will have to be blasted and processed from the existing quarry. As presented in figure 1, the existing quarry is located 600 meters southwest of the Clyde River. The topography of the quarry area slopes toward the Clyde River. The elevation of the bottom of the quarry is about at 20 meters while the river bottom in this area is at an elevation of around 2 meters. The quarry needs to be kept free of standing water. No significant water accumulation at the bottom of the quarry was observed during the summer 2023. At the end of the quarry operations, a drainage ditch and a sedimentation basin will be built at the north end of the quarry, as presented in Figure 2.1.1. The water that will eventually drain out from the quarry will end into a large wet area.

Some dust could be produced during dry days mainly from heavy equipment movements. This will be addressed into a further section. The rock sorting process will not generate a lot of dust since we will mainly be working with mainly blasted rocks. The blasts do create some dust but only for a very short time. The drilling operation does generate dust but it is mitigated by a dust collector.

Figure 2.1.1: Erosion and sediment control measures to be constructed at the quarry



2.2 MATERIAL PROCESSING AREA

The material processing area and the material stockpiles are located about 150 meters northwest from the quarry. The surface water from this area is mainly draining toward a ditch along the west side of the haul road, as presented in Figure 2.2.1. Through a culvert that crosses the road, the water eventually reaches out a wet land that drains toward the Clyde River. Two check dams made with clear stones and straw rolls were installed upstream from the culvert. The ditch was excavated deeper than the culvert invert in order to act as a sedimentation basin.

Figure 2.2.1: Erosion and sedimentation protection -Material processing area



2.3 RIVER CROSSING

The river crossing is done on the renovated bridge. Following the bridge improvements, approaches on each side were enlarged and slopes were protected with rocks. To prevent erosion on the northeast slope, which is steeper than the other sides, clear rocks and straw roles were installed, as shown on the Picture 2.3.1. To prevent the erosion and avoid sediment to reach out the river, checker dams were installed along the southwest side of the bridge approach, as shown on Picture 2.3.2. A culvert was installed under a small ATV access road and a catchment basin was built between the culvert and the river, as shown on Picture 2.3.3 and Picture 2.3.4. Due to their size and weight, some equipment might have to use the existing Ford crossing for reaching the other side of the river. This operation will have to be done outside of the fish migration period and under the conditions of the applicable permits.

Picture 2.3.1 Erosion and sedimentation protection -Northeast side of Bridge



Picture 2.3.2: Checker dams built along the southwest side of the bridge approach



Picture 2.3.3: Catchment basin construction south side of the bridge

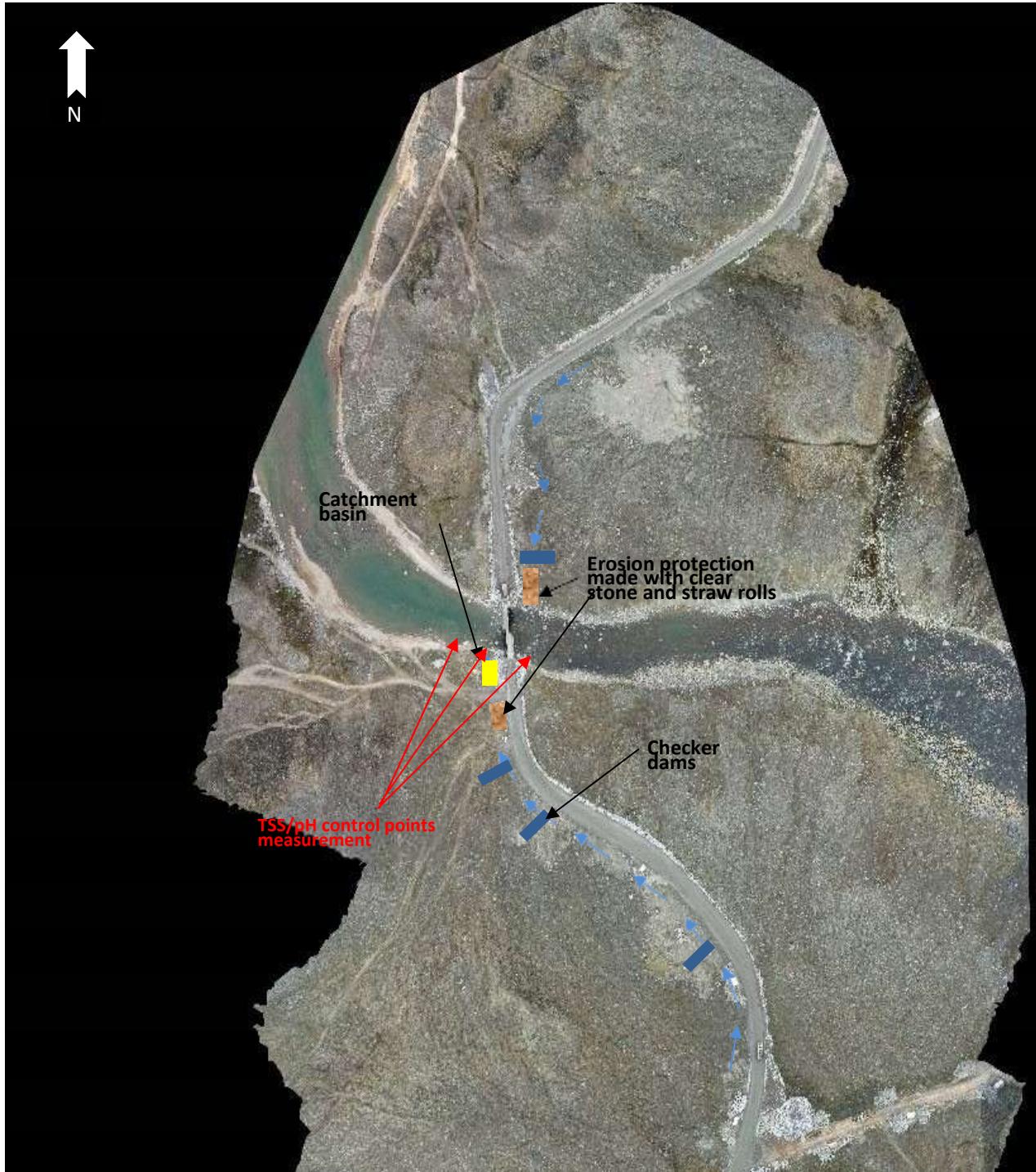


Picture 2.3.4: Catchment basin completed, silt fence was removed later



A control point to measure the variation of the total suspended solids (TSS) was established where the drainage path coming from the haul road meets the Clyde River, as indicated in Figure 2.3.1.

Figure 2.3.1: Erosion protection installed on the northeast side of the bridge approach



2.4 ROAD AND ACCESS ROAD

The existing roads will be used for the transportation of the rocks and granular material required for the construction of the breakwaters and other features of the new harbour. The total drive distance between the quarry and the construction site is about 5 kilometers. Existing culverts are crossing the road at different places. Some of the culverts might have to be replaced. During the process of replacing a culvert, adequate sediment control measures will be installed. Both culvert entry and exit will be protected with clear stones and geotextile. The access road to the quarry were upgraded. Drainage ditches were improved, and road structure was reinforced in order to avoid rutting, gouging and/or erosion of the ground surface. The existing hamlet roads will be frequently graded in order in order to maintain them in good conditions. Additional crushed gravel will be added in some sections of the road where needed.

Regarding the dust control, water and calcium chloride will be added in order to keep the dust down. The use of calcium chloride was discussed and accepted by the SAO and the hamlet Forman. Water will be pumped out from the Clyde River by our water truck which is equipped with a rear spreader bar. The water collection from the Clyde River must be done under the following water licence conditions:

- Withdraw a maximum of 30 cubic meters per day from the river.
- Use a pump with a screened hose to extract water directly from the river. Water will be pumped into a water truck. The pump will have a maximum flow rate of <0.035 m³/s.
- Water for domestic camp purposes shall continue to be supplied by the Hamlet of Clyde River.
- The Licensee is required to record daily volumes of Water withdrawn from Clyde River and report it to the NWB in their Annual Report submission.

Calcium chloride will be added with a 2 tons spreader installed at the back of a pickup truck. The normal rate of application recommended by the manufacturer is one tonne per kilometer, for a 10 meters wide road. Several applications could be done during one summer, depending upon the weather conditions and the volume of the traffic. Based on daily observations, the environmental monitor will be responsible to determine when the dust suppression application is required.

2.5 BREAKWATER CONSTRUCTION

The breakwaters construction involve the placement of large quantities of rocks and granular material at different depths in the water. Even tough the type of material to be used for the construction of the breakwaters contains almost no fine, the placement of the materials could generate suspended solids coming from the seabed and from the residual fines present on rocks. The core material will be dumped and pushed while the rocks will be placed using an excavator. Even placed with care, this operation will create seafloor disturbance and could increase temporarily the water turbidity. This operation will be followed by the environmental monitor. The ocean water quality will be monitored as per described in

section 4. The method used for the material placement could be adjusted to mitigate the impacts. According to sea conditions and the absence of floating ice, a floating silt curtain could be installed around the work area. The floating silt curtain will be available at the site and installed if needed.

2.6 DREDGING AND DISPOSAL OF DREDGED MATERIAL

The dredging operations involve the construction and removal of temporary roads to access the areas to be dredged, the excavation of the seabed, the transportation, and the management of the dredged spoils. The most part of the dredging operations will be carried only once both breakwaters will have been completed. This will allow the reduction of potential impacts generated during this type of activity. This will also render possible the installation of a floating silt curtain that will enclose the work area to reduce the dispersion of suspended solids in water.

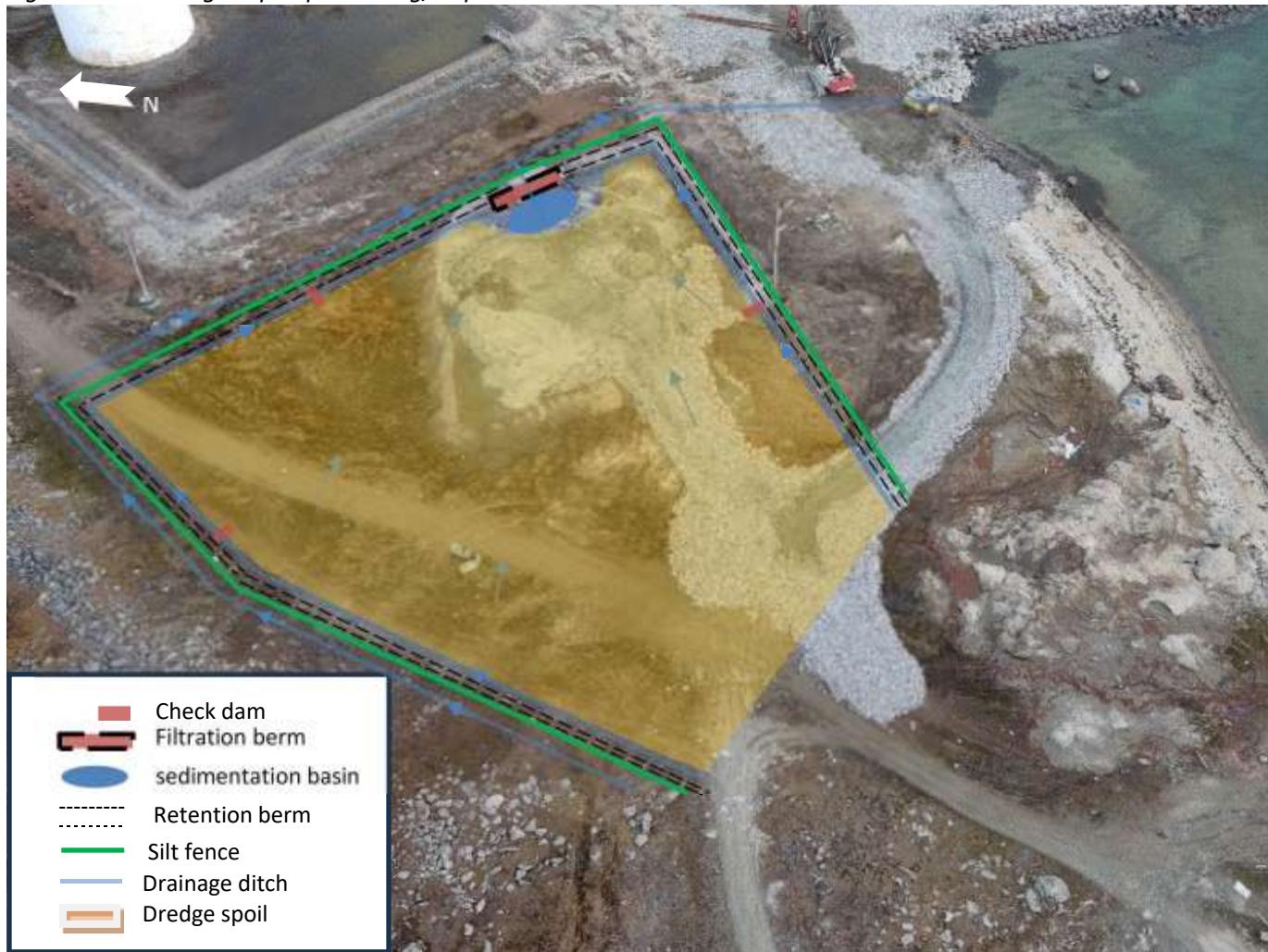
The dredged spoil will be loaded into dump trucks and transported to the dredged spoil disposal area, located on the west side of the tankfarm, as indicated in Figure 2.6.1. The dewatering area was prepared in 2023 to receive a small quantity of dredged material. It will be upgraded as presented in Figure 2.6.2 to receive a larger volume of dredged spoil. A drainage ditch was dug along the west side of the dredged spoil disposal area to intercept the surface water coming from upstream. Retention berms will be constructed around the perimeter of the disposal area and a silt fence will be installed between the drainage ditch and the retention berm. The sedimentation basin and the filtration berm were built during the summer 2023 with clear stones and geotextile, as shown in Picture 2.6.1.

The dredged spoil will be placed to facilitate their drainage. Rocks will be placed in a separate pile and drained material will be either processed for reuse, as per specifications, or spread out and compacted. For the site closing, the top of the placed material will be reshaped to promote a positive drainage. Rocks used for the temporary roads will be placed on the exterior slopes to avoid potential erosion and the silt fences will be removed.

Figure 2.6.1: Dredge spoil disposal area and water sampling point



Figure 2.6.2: Dredged spoil processing/disposal area



Picture 2.6.1: Construction of the sedimentation basin and the filtration berm



3. EROSION PROTECTION DEVICES AND METHODS

The erosion and protection devices will be stored nearby the site office. Their installation will be done under the supervision of the environmental monitor.

3.1 SILT FENCES

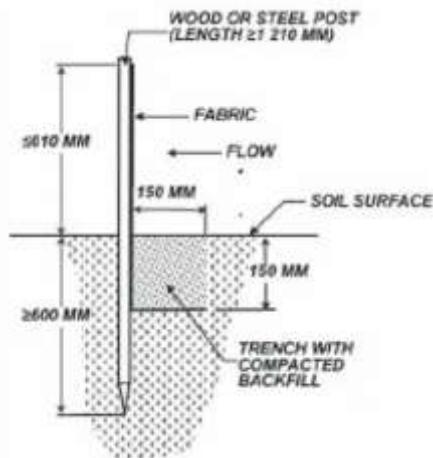
Silt fences are made with permeable geotextile fabric installed vertically and supported by posts with the bottom of the fabric buried in a trench. They are designed to prevent transport of sediment off site. It acts as an above ground settling pond to provide an area of catchment where water can remain still and allow sediment to settle out. Sediment fencing requires frequent monitoring and maintenance to remain effective.

Application

- Flat Ground
- Anywhere low flow runoff and retention of sediment are a concern
- Sloping Ground
- Stockpiles
- Ditches

Implementation

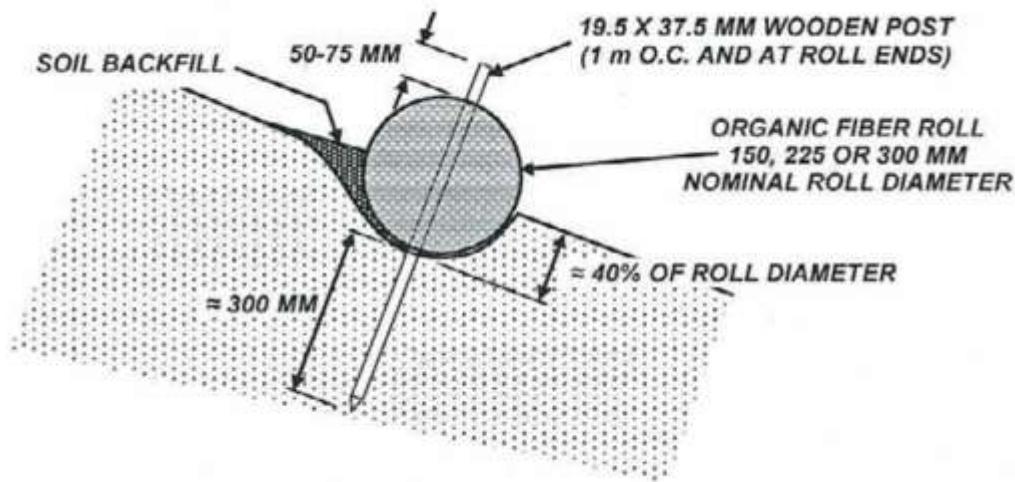
It is important to note that the correct installation of this sediment control measure is crucial to its effectiveness and the level of maintenance it will require. It should be installed downslope from construction activities, and used with other control measures (such as straw wattles/roles, or sediment catch basin). Silt fences should follow the contour of the slope with sides going upslope making the shape of a "U" to trap water. The amount of joints in the fabric should be minimized. Regular inspections of the fence should occur, especially after rain events.



3.2 ORGANIC FIBRES ROLLS

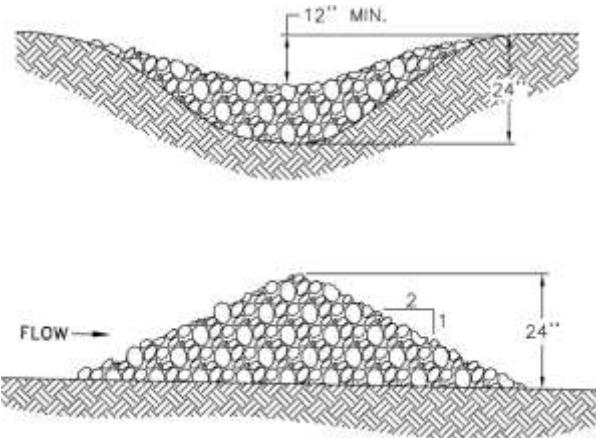
Organic fibres (straw) are encased in a photodegradable plastic net casing that form a roll used primarily for erosion control but also for sediment control as a secondary use. Installed perpendicularly across a slope it reduces erosion by shortening the slope length and by providing grade breaks. They are also effective at slowing flow velocity of overland flow and retaining sediment that accumulates behind the roll instead of migrating down slope.

Organic fibre rolls will be used where slopes are steeper, where the surface has been disturbed and at a risk of erosion. The rolls cannot be installed across ditches, swales or natural water flow paths.



3.3 CHECK DAMS

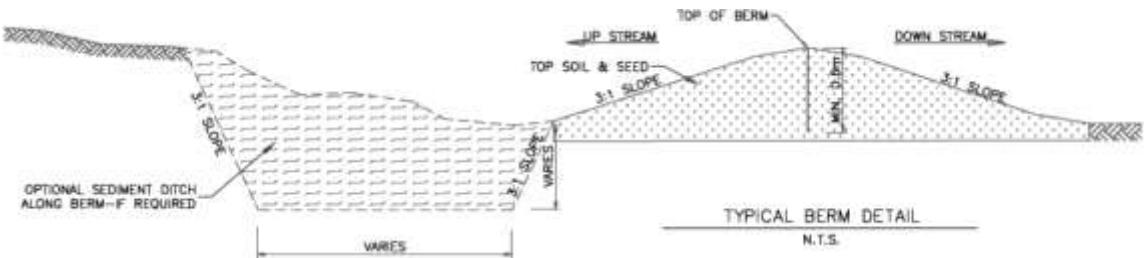
A check dam is a small barrier or dam constructed across a swale, drainage ditch or other area of concentrated flow for the purpose of reducing channel erosion. Channel erosion is reduced because check dams flatten the gradient of the flow channel and slow the velocity of channel flow. Most check dams are constructed of rock, but hay bales, logs and other materials may be acceptable.



Typical rock check dam

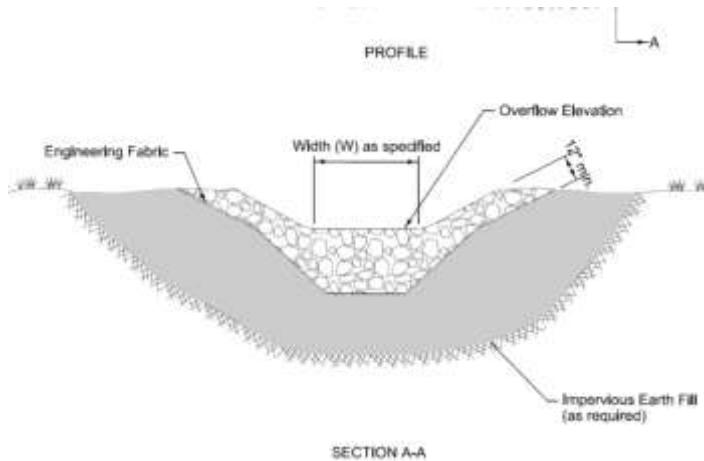
3.4 DITCHING AND BERMS

Ditching and berms will be mainly used at the dredged spoil disposal area in order to manage the water runoff from the saturated soils. Berms will be constructed with available material and compacted. Ditches will be dug and collected to catchment basins where fine sediment will settle downwards.



3.5 CATCHMENT BASINS

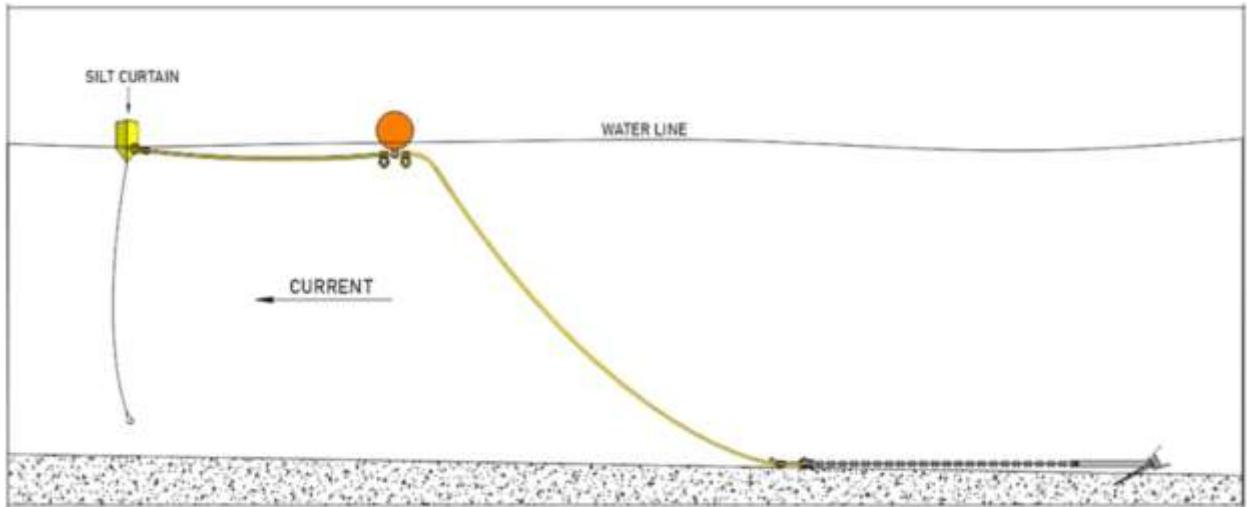
Catchment basins will be installed to collect the sediments from the drainage ditches before they reach out to the existing water courses. The basin sizes will be adjusted to the area drained by the ditches. Each basin will be excavated, lined with geotextile and protected with clear stones.



3.6 FLOATING SILT CURTAINS

The floating silt curtains are designed to help prevent particulate materials from leaving the immediate area of construction in the water. Type 2 silt curtains for moderate current conditions will be available for works to be carried out at the harbour site. Type 3 silt curtains for high current conditions will be available for the river crossing site.

Typical installation of a type 2 floating silt curtain



Typical installation of type 3 floating silt curtain



4. MONITORING AND REPORTING

Monitoring, inspection and adaptive management are necessary to ensure the effectiveness of this plan. It provides confirmation of proper implementation and effectiveness of erosion and sediment control measures. The effects of wet weather during construction activities can have a significant impact on ground conditions and can change otherwise stable soils into soils that are affected by erosion and sedimentation. Freeze thaw cycles at the beginning and at the end of construction seasons can also expose stable soils to an unstable condition overnight and throughout the day.

4.1 EROSION AND SEDIMENT CONTROL MONITORING AND MAINTENANCE

Monitoring will take place until the concern of erosion and sedimentation no longer exists. 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 monitor daily routine. These inspections and repairs will be reported.

Sediment control measures may require accumulated sediment to be removed in order to function properly or to not overload the structure. The removed sediment will be transported to the dredge spoil disposal area.

4.2 WATER QUALITY MONITORING

Marine and land construction activities will be monitored for their potential impact on water quality and marine habitat. The specific purpose of ESCP is to first identify any activities that could increase the potential of sediment erosion by implementing mitigation measures in order to reduce or eliminate soil particulate transport into the existing water bodies (river, stream or ocean). Second, in the case of any event of potentially impacted water reaching the water bodies, direct measurement of the water quality will be carried out for the total suspended solids (TSS) and the turbidity. If needed, on-site corrective measures will be immediately implemented in order to reduce the load of sediment in the runoff water. In any case of measured quality remaining above the guideline criteria of the CCME guidelines, the EM has the authority to shut down any related construction activities and have corrective measures implemented until guideline criteria are met. For that specific case, immediate communication will be forwarded to the CBCL and DFO representative for further discussion and correction of the issue. The following section of the plan is detailing the monitoring and reporting actions related to erosion related issues of on-site activities.

All monitoring activities of the ESCP will be documented in a daily report that will include the following elements (see appendix X for a preliminary version of the report sheet).

- Contact information of the sites supervisors and the environmental monitor.
- Identification and location of the work activities causing erosion that could affect water quality.
- Sediment control measures or correction actions to minimize or eliminate the source of sediment transport will be documented in the daily report. These measures could include but are not limited to silt fencing, culvert installation, water channel and berm construction, embankment work and grading of the working surface, etc. On-site modification to the plan and actions could be adapted accordingly as needed and in order to efficiently resolve any impact of water quality issue (s) related to erosion.
- When visual monitoring identifies sediment run-off in the natural water bodies, the direct monitoring of the turbidity and the total suspended solids (TSS) of the water quality will be conducted and documented. The measured parameters (TDS and turbidity) are directly related to the presence of small solid particulates that are suspended in the water and that could affect its quality. These particulates will originate from the washout and leachate of inorganic manipulated soil material, and should not affect the chemical balance of the water. However, according to the water licence conditions, the pH will be measured and recorded. The TSS measurement will be conducted on site with a Hatch portable meter HATSSMETER that measure 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 monitoring program will measure the background values before work begins and at different periods of activities based on visual monitoring and potential effect of the work on the water quality. The location of measurement with the probe will be made at around 1 to 2 meters from the point of entry of potentially impacted water into the water bodies. The monitoring distance can be adjusted based on context, results and visual observations. The measured total suspended solids (TSS) and turbidity are compared to the Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life which can be found; (<https://ccme.ca/en/res/total-particulate-matter-en-canadian-water-quality-guidelines-for-the-protection-of-aquatic-life.pdf>). A resume of these guideline is provided below:
- For TSS:
 - For clear flow, maximum increase of $25 \text{ mg}\cdot\text{L}^{-1}$ from background levels for any short-term exposure (e.g., 24-h period). Maximum average increase of $5 \text{ mg}\cdot\text{L}^{-1}$ from background levels for longer term exposures (e.g., inputs lasting between 24 h and 30 d).
 - For high flow, maximum increase of $25 \text{ mg}\cdot\text{L}^{-1}$ from background levels at any time when background levels are between 25 and $250 \text{ mg}\cdot\text{L}^{-1}$. It should not increase more than 10% of background levels when background is $>250 \text{ mg}\cdot\text{L}^{-1}$.

- *For turbidity:*
 - For clear flow, maximum increase of 8 NTUs from background levels for a short-term exposure (e.g., 24-h period). Maximum average increase of 2 NTUs from background levels for a longer term exposure (e.g., 30-d period).
 - For high flow or turbid waters, maximum increase of 8 NTUs from background levels at any one time when background levels are between 8 and 80 NTUs. It should not increase more than 10% of background levels when background is >80 NTUs.
- Photographs of “before and after” work/events will be documented and provided as needed, and also included in the reports.
- At the end of each season, a synthesis of the daily reports (see appendix 1) will be compiled with a focus on presenting the important events that have occurred during the working period. This compilation will be included in the yearly report.

APPENDIX 1
CLYDE RIVER HARBOUR CONSTRUCTION

APPENDIX 1
ESCP DAILY MONITORING SHEET

Environmental Monitoring Daily Report
Clyde River Small Craft Harbour Development

Date	Year/Month/Day		
Day	Day		
Tide	Tide		
EM	Name Environmental Monitor		
MMO	Name Marine Mammal observer		
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)		
Activities	Drilling (number) / Blasting		
	From Quarry to screen (loads)		
	Transport contract (loads)		
	transport outside contract (loads)		
	Dredging		
	Infilling		
	Construction		
	Sieving test on rocks		
Wildlife	Wildlife Observation (Nb animals)		
	Wild life Mitigation (refer to daily wildlife monitoring)		
Waterbody 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		

Environmental Monitoring Daily Report Clyde River Small Craft Harbour Development			
Hydroacoustic monitoring	Hydroacoustic monitoring. Underwater sound level threshold 160 dBRMS re: 1µPa within the exclusion zone and 30 kPa at 10 meters		
Dust control	Dust Control Calcium Chloride (Quantity) and area		
	Water consumption from river (30 m³/day) max as licence		
	Water consumption from hamlet Once a month only, other than dust control (m³/month)		
Water consumption	Water usage Once a month only (other than dust control)		
	Water at camp (delivered by hamlet) Once a month only (m³/month)		
	Water for other construction activities (m³/day)		
Spill / Unauthorized discharge	Spill / Unauthorized discharge. Use NU spill line if grater than 100L		
Ford crossing	Ford crossing Avoidance during Fish migration: -Upstream: 2 weeks following ice free river -Downstream: ± Aug 7 to Sept 15		
Stop Work Order	Stop Work Order. Describe nature and duration		
Explosive	nearby fisheries waters Not including blasting at the quarry		
	Explosive at the quarry. Blast and Vibration monitoring		
Vessels presence	Vessels presence		
Inuit Land use nearby project	Inuit Land use nearby project. Anyone who is crossing the working area to access territory need to be registered (nb personnes)		
Waste management Sunday report only	Waste management Sunday report only		
Waste	Waste volume sent to the local facility (m³)		
	Hazardous waste		
	Salvaged material		

APPENDIX 3

CLYDE RIVER HARBOUR CONSTRUCTION

APPENDIX 3

Spill reports and spill and contaminated soil disposal documents

Submittals

No.: 77

Rev.: 00

Date : November 29, 2023

Project: CLYDE RIVER HARBOUR DEVELOPMENT Project No.: 2022-034

DFO ETO-025-222050

Subject: 2023 waste sent on sealift for recycling, reusing or disposal

Submitted to : CBCL Limited
1505 Barrington St
Halifax, NS, B3J 3K5
David Parsons
davidp@cbcl.ca
506-633-6650 ext3233

Copy to : Kenton Thiessen
PSPC
kenton.thiessen@pwgsc-psqc.gc.ca
204-229-6375

Speciality : environment	Submitted for : Information
Specification section :	Revision required by : December 9, 2023
Drawing reference :	Color choice required:
Submitted as : information	Total Page incl. cover: 7

Subcontractor**or supplier :****Manufacturer :****Description :** 2023 waste sent on sealift for recycling, reusing or disposal**Supplier No :****Comments:** Includes the contaminated soil manifest from the disposal facility**Revised and submitted by :**


Fran9ois Bourassa, P.Eng.

Pilitak Enterprises Ltd.

1519 Federal Road

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418-781-6114 ext 213

fbourassa@pilitak.biz**Review by the consultant or the client :****Shop Drawing Review**

This review is intended to assist the contractor in complying with the requirements of the Contract Documents and does not relieve him of his responsibilities under the contract.

7 reviewed
reviewed as noted F revise and resubmit
not required for review

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PER
CBCL LIMITED

--- PROJECT DATE

Waste shipped on the 2023 sealift to southern facilities for recycling, re-using or disposal

Type of Waste	Hazardous	Quantity & type	Disposal	Volume (m3)
Battery	yes	5 4D	Collected by <i>Camion International Elite</i> for recycling: 265, Etienne-Dubreuil Quebec (Quebec) GIM4A6	0.2
Battery	yes	1 8D		
Battery	yes	1 Groupe 31		
Battery	yes	1 151R-Bolt		
Battery	yes	1 BC178		
Battery	yes	1 VSV78DT		
Used Oil	no	2 1000 L tote tank	Collected by <i>Environnement Sanivac</i> for recycling: 1660, av. de l'Energie, Alma (Quebec), G8C 1M6	2.6
Used Oil	no	1 205 L drum		
Used Oil	no	20 20 L pale		
Tire	no	1 Loadertire	Collected by <i>Pneu Belisle</i> for recycling: 6250 Bd Wilfrid-Hamel, L'Ancienne-Lorette, QCG2E 2H8	4.5
Tire	no	2 Skytrak tire		
heavy Equipment/vehicle parts	no	6 Starter (2), accumulator (1), motor (1), gear box (2)	Sent to dealers for retrofit/ recycling	2
Contaminated soils with diesel and hydraulic oil	no	3 Quatrex 27	Sent to <i>Solneuf</i> for disposal: 1304, chemin du site, Neuville (Qc), GOA 2R0	1.1
Scrap metal	no	various metals	Sent to <i>Recuperation Fer et Metaux</i> for recycling: 460, rue Bleriot, QC GIP 4N2	3
Empty gas cylinders	yes	2 Argoshield	Collected by <i>Messer Canada</i> for re-using	3
	yes	12 Oxygen		
	yes	3 Acetylene		

REÇU DE CARGAISON/ CARGO RECEIPT

[a3]- 00092

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NEAS

ESPACE RTSERVE A1 'INFORMATIQUE/ SPACE RESERVED FOR DATA PROCESSING

N ° RESERVATION
BOOKING NO.

N° REI;UPROVISOIRE
TEMPORARY RECEIPT NO.

RETROGRADE

LATERAL
LATERAL

PORT DECHARGEMENT *LOADING PORT*

**PORT DE CHARGEMENT
UNLOADING PORT**

DATE/DATE

t'''A-ntJ''' ::1

N° VOY T:5' °\

Cette u dechargaison) est emis conformement et sujet aux termes et conditions du contrat de transport applicable à la cargaison à être transportée et dont il est fait référence au présent document.
This cargo receipt is issued in accordance with the terms and conditions of the contract of carriage applicable to the cargo to be carried and which is referred to herein.

Les marchandises transportées en ponte le sont aux risques du Marchand.
Goods carried on deck are done so at the Merchant's risks.

... !1-- & LLB:...+ a. ; - r.t. (C. L. a. t. +

'Q...;1 1 .

N° COLIS PACK NO.	OTE QTY	DESCRIPTION	DIMENSIONS LONGUEUR X LARGEUR X HAUTEUR LENGTH X WIDTH X HEIGHT	POIDS WEIGHT KG/LB	CONTENEUR CONTAINER		TRANSPORT	N° LIV. DEL.NO.
					PLEIN FULL	VIDE EMPTY		
17178		open CRATE CYL. CL2.1 UN1001	0,80x0,72x1,39					
17179		open CRATE CYL CL22 UN1956	1,72x0,58x0,45					
17180		open CRATE CYL CL22(51) UN1072	1,23x0,87x1,65					
CF042118041		20'						
FXL1187601-5		20'						
MBEU1520868-3		20'						
MBEU1520862-1		20'						
MBEU1520870-3		20'						
FXL11840645-6		..:JA ..						
17186		matériel Construction, Soil CRATE CL UN Batteries	1,00x1,05x0,70					

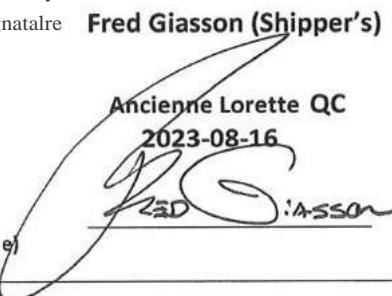
CHARGEMENT / LOADING	REMARQUES / REMARKS	DECHARGEMENT / UNLOADING
	j () 1 111, C, "Y, roM-	Lateral r u le Lateral received on
Representant M. Iltrianc / Merchant Representative 	Wq t - Q" T. L. - - - F. -	Representant Marchand / Merchant Representative
19/01/2011 Representant Transporteur / Carrier Representative 	d	Representant Transporteur / carrier Representative

SHIPPER'S DECLARATION FOR DANEROUS GOODS
DECLARATION DE L'EXPEDITEUR POUR MARCHANDISES DANGEREUSES

Shipper Expediteur ?{} 1tc{k		Waybill No. Node LT.A.	Page Page	1 of 1 Pages Pages																																																		
Consignee Destinataire Construction		Carrier Transporteur Gely Construction Itd																																																				
Two completed and signed copies of this declaration must be handed to the operator. Deux copies de cette declaration doivent etre remplies et signees, doivent etre remises a l'exploitant. Additional Handling information/Renseignements complémentaires NUMERO 24H CANUTEC 613.996-6666		Warning Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. Avertissement Le non-respect sur quelque point que ce soit de la Regulation sur le transport des marchandises dangereuses peut constituer une infraction aux lois en vigueur, punissable par la loi.																																																				
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SHIPPER'S DECLARATION FOR DANGEROUS GOODS

DECLARATION DE L'EXPEDITEUR POUR MARCHANDISES DANGEREUSES

Shipper Expediteur	PILITAK ENTERPRISE LTD CLYDE RIVER (2022-034) Nunavut XOA OHO Telephone: 1-866.781-0704	Waybill No. No de L.T.A. Page Page Shipper's Reference Number (optional) N° de référence de l'expéditeur (facultatif)	1 of de Pages			
Consignee Destinataire	GELYCONSTRUCTION 1781 Route de l'aéroport Québec G2E 2PS Telephone: 1-418-871-3368	Carrier Transporteur	GELY Construction Ltd			
Two completed and signed copies of this declaration must be handed to the operator. Deux copies de cette déclaration doivent être remplies et signées, doivent être remises à l'exploitant.		Warning Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. Avertissement Le non-respect sur quelque point que ce soit de la réglementation sur le transport des marchandises dangereuses peut constituer une infraction aux lois en vigueur, punissable par la loi.				
Additional Handling information/Renseignements complémentaires NUM RO 24H CANUTEC 613.996-6666						
NATURE AND QUANTITY OF DANGEROUS GOODS NATURE ET QUANTITE DE MARCHANDISES DANGEREUSES						
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UN 1956	GAZ COMPRIME N,S,A (Argoshield)	2.2		2 X 73 kg	P200	
UN 1072	OXVGENE COMPRIME	2.2 (5.1)		12 X 63 kg	P200	
UN 1001	ACETYLENE DISSOUS	2.1		3 x 80 kg	P200	
N° identification n° conteneur / boîte	Seal n° / N° de scelle	Dimensions conteneur/boîte	Tare (kg)	Masse brute totale (kg)		
Caisson # 1,-11 \\1,\\1 It\\o			1142 kg	Kg		
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CENTRE DE TRAITEMENT POUR LES SOLS SOUILLES
AUX HYDROCARBURES LEGERS

SolNeuf

www.solneuf.com

Administration

1990, rue Cyrille-Ouquet, bur. 210
Quebec (Qc) G1N 4K8
418.871.8001
418.872.5626

Lieu d'enfouissement de Neuville
1304, chemin du Site
Neuville (Qc) GOA 2R0
418.876.2714
418.876.3624

CLIENT: PILITAK ENTREPRISES

ADRESSE: 1519c, Federal Road
Iqualuit, Nunavut

X0A0H0

Entree 2023.10.20 03:36:34PM

Depart 2023.10.20 03:52:08 PM

Contrat:

Vehicules: 4-087CONTRUCTION GI:LY

Produit: TERRE AANALYSER

Destination :

Source: Clyde river, Nunavut

POIDS BRUT: 13030 kg

POIDS VIDE: 11080 kg

POIDS NET: **1950kg**

Tonnage **1.95tm**

NUMERO DE MANIFESTE :

Marc Rousseau

Commis : MASTER

VALERIE

BILLET: 0000015723

Signature du client :

CONDIBONS : Net 30 jours. Frais d'administration de 2 % par mois, 24 % par annee sur tout compte passe du.

TPS : B45427590RT0001 - TVQ : 1213021253TQ0001



CENTRE DE TRAITEMENT POUR LES SOLS SOUILLES
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**SolNeuf**C1:oire di; ir, itemr.ni !Hillrs ;otssQuiUes
auxM 1Inrlrhurns i6l 1rs**MANIFESTE DE TRANSPORT DES SOLS**

Pour reception : 418 871-8001

Cellulaire : 418 554-4281

Courriel : Info@solneuf.com

N° de projet: _____

A. Origine (a remplir par l'expéditeur)		B. Destination (a remplir par le destinataire)																			
Date: <u>20</u> / <u>La</u> / <u>2-07-2000</u> Heure: <u>4:00</u>		Date <u>J1:1 j, IQ</u> / <u>2,0</u> Heure: _____																			
1. Client Nom: <u>UJL; f4k-fu.).lu, L'ili2</u> Adresse: <u>!U_L & E&, 9--</u>		1. Lieu d'élimination SolNeuf inc. Lieu d'enfouissementsanitaire de Neuville 1314, chemin du Site Neuville (Québec) GOA 2R0																			
Ville: <u>CL. IJ.1. R/ t..</u> Code postal : Tel. : () _____ Telec. : (<u>JifJ... 0850</u>		2. Sols résus <table border="1"> <thead> <tr> <th>Conforme</th> <th>Non-conforme</th> <th>Remarques</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Quantité : _____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>Etat physique : D Sec</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Type de sols : m Gresseux la Sableux <input type="checkbox"/> Argileux</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>D Silteux fii:l Coilloux-blocs <input type="checkbox"/> Debris divers</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Contamination : A-B 0 B-C 0 BTEX 0 >RESC</td> </tr> </tbody> </table>		Conforme	Non-conforme	Remarques	<input type="checkbox"/>	<input type="checkbox"/>	Quantité : _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Etat physique : D Sec	<input type="checkbox"/>	<input type="checkbox"/>	Type de sols : m Gresseux la Sableux <input type="checkbox"/> Argileux	<input type="checkbox"/>	<input type="checkbox"/>	D Silteux fii:l Coilloux-blocs <input type="checkbox"/> Debris divers	<input type="checkbox"/>	<input type="checkbox"/>	Contamination : A-B 0 B-C 0 BTEX 0 >RESC
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<input type="checkbox"/>	<input type="checkbox"/>	Contamination : A-B 0 B-C 0 BTEX 0 >RESC																			
N° d'échantillon : _____		Transport: D <input type="checkbox"/>																			
3. Nature des sols recueillis Quantité : <u>3</u> <u>1</u> <u>3</u> tonne(s) Etat physique : li (J Sec D Humide D Boueux Type de sols : m Gresseux la Sableux <input type="checkbox"/> Argileux D Silteux fii:l Coilloux-blocs <input type="checkbox"/> Debris divers Contamination : A-B 0 B-C 0 BTEX 0 >RESC		3. Peso <u>13a?d</u> Brut : _____ Tare : <u>1-/fl&</u> Net : <u>11.2 j.</u> D'après le coupon de peso n°																			
Autre spécifier : <u>Y/l; < i,f,J..</u> <u>r Nu/1 I-/[Af&vtf,..</u> <input type="checkbox"/> A caractériser à la réception		4. Acceptation au site <u>WLE</u> (L. 12 Q) époussetage : _____ Signature : _____																			
4. Transport Transporteur : <u>C o/Y?t1 ll.vc.rleft? G,rl:t.</u> Immatriculation : <u>L 7L 1 C</u> 1111 roues D 12 roues		5. Echantillonnage à la réception <input type="checkbox"/> Oui <input type="checkbox"/> Non No _____																			
D Semi-remorque : ble 0 Conteneur n° Chauffeur : <u>W</u> Signature : <u>C..</u>		6. Facturation D Client D Autre, préciser : _____																			
5. Superviseur - Expédition Enlèvement : <u>P1'LLLf+le &J:t(ft14S 1'D)</u> Responsable _____ Signature : <u>0</u> Tel. : () _____ - Cell. : <u>(11.1.J.J....2Jo.- 08.Q)</u>		7. Renseignements supplémentaires S. V.P. retourner la copie blanche à SolNeuf inc. 1990, rue Cyrille-Duguay, bureau 210 Québec (Québec) G1 N 4K8 Tel.: 418 871-8001 Telec.: 418 872-5626																			

Copie blanche : SolNeuf

Copie jaune : expéditeur

APPENDIX 4

CLYDE RIVER HARBOUR CONSTRUCTION

APPENDIX 4

NWB Annual Reporting Form

NWB20 Annual Report

Year being reported: 2023

License No: 8BC-CLY2225

Issued Date: January 20, 2022

Expiry Date: October 31, 2025

Project Name: CLYDE RIVER SMALL CRAFT HARBOUR DEVELOPMENT

Licensee: FISHERIES AND OCEAN CANADA

Mailing Address: Fisheries and Oceans Canada – Small Craft Harbours
501 University Crescent
Winnipeg, Manitoba R3T 2N6

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

General Contractor: Pilitak Enterprises Ltd
P.O. Box 727, 1519 Federal Road,
Iqaluit, Nu. X0A 0H0

General Background Information on the Project (*optional):

Construction of a small craft harbour

Licence Requirements: the licensee must provide the following information in accordance with

Part B Item 1

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Hamlet water for camp	
Water Quantity:	6 m ³ /day	Quantity Allowable Domestic (cu.m)
	2.4 m ³ /day	Actual Quantity Used Domestic (cu.m)

Water Source(s):	Clyde River for dust control	
Water Quantity:	30 m ³ /day	Quantity Allowable (cu.m)
	Total for season: 190 m ³	Actual Quantity Used (cu.m)
	Max per day: 30 m ³	

Waste Management and/or Disposal

- Solid Waste Disposal
- Sewage
- Drill Waste
- Greywater
- Hazardous
- Other:

Additional Details:

Domestic water supplied by hamlet, total 304 m3 for the construction season
 Water for dust control: Withdrawn from Clyde River, south side of bridge to Cape Christian, 70 29 21.14 N 68 29 30.64 W
 Sewage collected by the hamlet sewage truck
 Solide waste: Transported to the hamlet solide waste facility
 Hazrdous waste: shipped off-site to a licenced disposal facility

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: 2 & 5 (as reported to the Spill Hot-line)

Date of Spill: July 4 and September 14th

Date of Notification to an Inspector: July 5 and Sept 14th

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

All spills were under 100L. For the two spills happened nearby the water, the Nunavut spill line was contacted. No corrective action was instructed by the Nunavut Spill Line authorities.

Rewvisions to the Spill Contingency Plan

Other: (see additional details) ▼

Additional Details:

The revision 1 was attached to the 2022's annual report. The rev-02 was issued to address the board's comments

Rewvisions to the Abandonment and Restoration Plan

Other: (see additional details) ▼

Additional Details:

Not applicable, refer to the following section

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

A reclamation plan for the quarry was included in the Quarry Development Plan submitted within the last year's report. No modification to this plan was done. The reclamation works will starts in 2025.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details described below ▼

Additional Details:

Monitoring station 01: Southwest side of the bridge to quarry
70 28 29.6 N 68 31 59.22 W
Monitoring station 02: Construction site
70 28 5.39 N 68 36 0.52 W
Runoff water monitored for TSS, pH and visible hydrocarbon sheen
No exceedance of these parameters was observed during the monitoring

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Not Applicable (N/A)



Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board



Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board



Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC



Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

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Date Submitted:

December 5, 2023

Submitted/Prepared by:

François Bourassa

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