



IMPACT ASSESSMENT ACT - SIGNIFICANCE OF ENVIRONMENTAL EFFECTS DETERMINATION (SEED) FORM BASIC OR NON-BASIC PROJECT

The purpose of this form is to summarize and document the significant adverse environmental effects of a project as per s.82 of the *Impact Assessment Act* (IAA). Consult the Basic/Non-Basic Project Requirements (s.3.6 of Departmental Procedure) for details and follow the SEED Guidelines (Entry Instructions & Linkages to PATH Record Keeping and IAA Registry). All completed and signed SEED documents shall be uploaded to PATH and the SCHED drive.

GENERAL INFORMATION

1. Project Title: Wharf Construction, Burin, NL	
2. Proponent: Fisheries and Oceans Canada-Real Property Safety and Security (DFO-RPSS)	
3. Other Contacts: Public Services and Procurement Canada (PSPC)	4. Role of each contact: OGD Consultant
5. Source (Contact): William Duggan, Project Officer, DFO-RPSS	
6. Received Date or Assessment Start Date: May 7, 2021	
7. PATH No(s):	8. DFO File No: 21-HNFL-00416
9. TC File No.: NPP File No: 2021-204809	10. Canadian Impact Assessment Registry Reference No.: 82820

PROJECT DESCRIPTION AND JUSTIFICATION

11. Project Location: The Project site is located on Seaview Drive within the community of Burin, approximately 200 km southwest of the city of St. John's. The project site is located at coordinates 47° 02' 18" N, 55° 09' 43" W and is accessible via Route 221 off the Trans-Canada Highway. A map and photo of the project location are provided in Appendix A. The site DFRP is 80592.
12. Project Summary: The proposed Project involves the construction of a new treated cribwork finger pier wharf at the existing Search and Rescue (SAR) station located in Burin, NL. The wharf will consist of standard treated timber cribwork filled with ballast and seated on a placed rock mattress. Prior to placement of the rock mattress, approximately 4000 cubic meters of hydrocarbon impacted sediment will be excavated from the harbor basin. In order to properly reach the target dredge area, a temporary dredge road or floating barge may be utilized. As part of the proposed project, an existing marginal wharf will be repaired and a new steel sheet pile facing added. The steel sheet piling will be anchored to bedrock and tied into the existing structure to ensure required structural support. Project work and activities will involve the use of heavy equipment such as excavators and dump trucks as well as manual labor. Impacted sediments will be transported from the site and disposed/treated pursuant to applicable provincial/federal regulations.
13. Review of Alternatives: N/A



PROJECT REVIEW

14. Rationale for the Application of Section 82 of IAA:

Project is on federal land and;

- DFO-RPSS is proposing the project, as the proponent
- DFO-RPSS is proposing to issue *Fisheries Act* Authorization, *Species at Risk Act* Permit or other regulatory approval
- DFO- RPSS is proposing to provide financial assistance to another party to enable the project to proceed
- DFO- RPSS is proposing to grant a license or interest in federal land to enable the project to proceed
- Other

15. Primary Authority and Rationale for Involvement: DFO- RPSS is the proponent

16. Other Authorities and Rationale for Involvement: Transport Canada – Navigation Protection Program and Environmental Programs and Indigenous Relations - *Canadian Navigable Waters Act*.

- The project was posted on the CNWA Registry as a notification of work on a non-scheduled waterway, and public notices were posted at the project site.

17. Other Contacts and Nature of Response:

Fisheries and Oceans Canada – Fish and Fish Habitat Protection Program (DFO FFHPP)

- DFO FFHPP reviewed the project and provided advice regarding the Implementation Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat. It was determined that the project is not likely to result in the death of fish and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act* (Appendix B).

Newfoundland and Labrador Department of Environment, Climate Change and Municipalities, Water Resources Management Division (NLDECCM WRMD)

- NLDECCM WRMD issued a Permit to Alter a Body of Water for dredging and infilling components of the project (Appendix B).

18. Nature of Project:

- | | | |
|--|---|---|
| <input type="checkbox"/> Building and Property Development | <input type="checkbox"/> Remediation and conservation | <input type="checkbox"/> Airport and Airfields |
| <input type="checkbox"/> Mines and Minerals | <input type="checkbox"/> Maintenance Activities (fences, walls) | <input type="checkbox"/> Dams and Reservoirs |
| <input checked="" type="checkbox"/> Ports and Harbours | <input type="checkbox"/> Nuclear Energy | <input type="checkbox"/> Railways |
| <input type="checkbox"/> Oil and Gas | <input type="checkbox"/> Bridges | <input type="checkbox"/> Hydroelectric Energy |
| <input type="checkbox"/> Highways and Roads | <input type="checkbox"/> Waste Management | <input type="checkbox"/> Alternative Energy |
| <input type="checkbox"/> Water Management | <input type="checkbox"/> Agriculture | <input type="checkbox"/> Other, not otherwise specified |
| <input type="checkbox"/> Recreation and Tourism | <input type="checkbox"/> Forestry | |



19. Scope of Project and the Assessment (details of the project subject to review):

Project Description

Construction/Installation

The proposed project involves the construction of a new treated cribwork finger pier wharf at the existing Search and Rescue (SAR) station located in Burin, NL. The new finger pier structure will consist of a stem section measuring 6.1 metres wide by 24.4 metres long and a headblock measuring 6.1 metres wide by 15.2 metres long; total wharf length will be 39.6 metres. The wharf will consist of standard treated timber cribwork filled with ballast and seated on a placed rock mattress. Prior to placement of the rock mattress, approximately 4000 cubic metres of hydrocarbon impacted sediment will be excavated from the harbour basin. In order to properly reach the target dredge area, a temporary dredge road or floating barge may be utilized. As part of the proposed project, an existing marginal wharf will be repaired and a new steel sheet pile facing added. The steel sheet piling will be anchored to bedrock and tied into the existing structure to ensure required structural support. Project work and activities will involve the usage of heavy equipment such as excavators and dump trucks as well as manual labour. Impacted sediments will be transported from the site and disposed/treated pursuant to applicable provincial/federal regulations.

Total footprint of projects components below HNT is as follows:

- Total footprint of new steel sheet pile additions below HNT in $m^2 = 25m^2$
- Total footprint dredge area in $m^2 = 1,000m^2$
- Total footprint of rock mattress in $m^2 = 650m^2$

Schedule

The proposed work is expected to commence in April 2022, pending funding and approvals. The work is expected to be completed by May 2023.

Operation / Maintenance

DFO - RPSS's Environmental Management Plan (EMP) and site-specific Emergency Response Plans cover operational aspects of environmental management at Real Property Safety and Security facilities and constitute the basis for the environmentally responsible management of harbour operations (i.e., fuelling, waste disposal, activities at the property and on the water). The proposed physical works will adhere to these environmental management standards established by DFO-RPSS. The proposed project is intended to improve continued operations at the Burin RPSS.

Maintenance of the Real Property Safety and Security infrastructure will be conducted on an as-needed basis and will undergo separate impact assessment and legislative review as future stand-alone project(s).

Environmental effects resulting from the operation and maintenance of the proposed physical works are not considered further in this assessment.

Abandonment / Decommissioning

There is currently no plan to decommission or abandon the Burin RPSS. The very nature of the proposed project is intended to ensure the viability and safety of the harbour facility primarily for commercial fisheries and navigation.

At the time of decommissioning, DFO- RPSS will develop a site specific re-use or reclamation plan that is appropriate for the applicable environmental legislation and DFO policies. The decommissioning of facilities would undergo separate impact assessment and legislative review as future stand-alone project.

Environmental effects resulting from the abandonment or decommissioning of the proposed physical works or the RPSS facility are not considered further in this assessment.

Accidents and Malfunctions

Accidents and malfunctions have the potential to occur when undertaking a physical activity. Potential environmental effects resulting from accidents and malfunctions over the course of the proposed project are, therefore, considered in this assessment.



ENVIRONMENTAL SETTING

20. Environment Description:

Physical Environment

The Project site is located on Seaview Drive within the community of Burin, approximately 200 km southwest of the city of St. John's. The project site is located at coordinates 47° 02' 18" N, 55° 09' 43" W and is accessible via Route 221 off the Trans-Canada Highway. The SAR station in Burin consists of a treated cribwork marginal wharf, floating dock, armourstone and several upland structures such as a storage garage, main SAR office building, fuel storage tanks, parking/service area, etc. Substrate within the project site consists of silt/sand to rubble and cobble with the predominant observed substrate consisting of fine silts and sands with some gravel/cobbles interbedded. A topographic map and site photo are provided in Appendix A.

Sediment sample analysis included but was not limited to petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs) and metals. Ten (10) sediment samples were collected in the vicinity of the existing wharf. Sediments are impacted with PHC's above provincial landfill guidelines, therefore the material will require treatment and disposal at a soil treatment facility.

Canadian Climate Normals (1981-2010) for the Winterland weather station (47° 10'N, 55° 18'W) indicate that the project area receives an average of 1279.1 mm of rain and 199.0 cm of snow annually. Extreme precipitation events of up to 122.0 mm and extreme snow depths of 170 cm have been recorded. Temperatures range from an extreme minimum of -26°C to an extreme maximum of 30.0°C. The daily average temperature for the Winterland weather station is 5.7°C.

Biological Environment

Macrofaunal organisms typical for subtidal marine environments such as the project site, including scallop, mussels, periwinkle, starfish, cunner, crabs and sea anemone. Burin is located within the Eastern Hyper Oceanic Ecoregion. This ecoregion occurs on the extreme south coast of the Avalon and Burin Peninsulas and on the northeast coast near Bay de Verde and Cape Feels. Although this ecoregion is 200m or less in elevation the extreme oceanic climate precludes the development of forest other than Balsam Fir krummholz. The heaths in this area have a close affinity to oceanic parts of Northern Scotland and Southern Norway.

Species at Risk (Aquatic and Terrestrial)

A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted on November 1, 2021 that produced a list of rare / unique species (i.e., plants and animals) observed within a 5 km buffer zone (standard ACCDC procedure) of the site of the proposed work. All species were cross-referenced with schedule 1 of the Species at Risk Act (SARA). Results showed the Common Nighthawk (*Chordeiles minor*) and the Leach's Storm-Petrel (*Oceanodroma leucorhoa*) were observed within this buffer.

A search of the Government of Canada Open Maps database was conducted on October 29, 2021 that produced a list of rare/unique species (i.e., plants and animals) with distribution ranges near the site of the proposed work. All species were cross-referenced with schedule 1 of the Species at Risk Act (SARA). Results showed no Schedule 1 Species at Risk with distribution ranges that are within 5 km of the project site.

A search of the DFO Aquatic Species at Risk database was conducted on October 29, 2021 which produced a list of aquatic species at risk and the presence of their critical habitat potentially found within a 1km buffer (standard NASAR procedure) of the site of the proposed work. Results showed that the project site is within the distribution range of the following aquatic species at risk: Fin Whale (*Balaenoptera physalus*), Blue Whale (*Balaenoptera musculus*), Spotted Wolffish (*Anarhichas minor*), North Atlantic Right Whale (*Eubalaena glacialis*), Leatherback Sea Turtle (*Dermochelys coriacea*), White Shark (*Carcharodon carcharias*) and the Northern Wolffish (*Anarhichas denticulatus*).

Human Environment

Until the early 1990s, the local economy was largely still dependent on the fishing industry. The federally imposed cod moratorium (which was instituted in 1992) had a heavy impact on the fishing industry as a whole. The tourism sector has



grown in the absence of the fishing industry. Museums such as the Heritage House and Old Colony Trust remind people of what life was like in early Burin.

OTHER CONSIDERATIONS

21. Adverse Impact on the rights of Indigenous People of Canada:

PSPC and Transport Canada carried out an Indigenous Assessment on behalf of DFO- RPSS at Burin RPSS in accordance with DFO- RPSS's Preliminary Duty to Consult Assessment Guide. This Guide is intended to provide basic information to DFO- RPSS and to assist its Program Managers in making informed, prudent decisions that take into account statutory and other legal obligations, as well as policy objectives, related to Indigenous and treaty rights. The Supreme Court of Canada has held that the Crown has a duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Indigenous or treaty rights. While there may be other reasons to undertake consultations (e.g., good governance, policy-based, etc.), three elements are required for a legal duty to consult to arise:

1. There is contemplated or proposed Crown conduct.
2. The Crown has knowledge of potential or established Indigenous or treaty rights.
3. The potential or established Indigenous or treaty rights may be adversely impacted by the Crown.

Based on a preliminary assessment conducted by PSPC, on behalf of DFO- RPSS, and Transport Canada, the legal duty to consult does not exist in this case as; the Crown does not have knowledge of potential or established Indigenous or treaty rights in the Burin area; and there are no potential or established Indigenous or treaty rights that may be adversely impacted by the Crown in completing the Burin project.

22. Indigenous knowledge provided in respect of the project:

Given the small scale, the temporal and spatial bounds and the current environmental setting of the proposed works, Indigenous Knowledge was not sought for this project.

23. Community knowledge provided in respect of the project:

Given the small scale, the temporal and spatial bounds and the current environmental setting of the proposed works, public consultation beyond that already discussed (Section 21) was not deemed warranted. Any available community knowledge is discussed in the applicable Environmental Description setting (Section 20).

24. Summary of public notification:

The project was posted to the public Navigation Protection Project Registry on August 16, 2021, and the public *Impact Assessment Act* Registry on July 22, 2021. Both notices were posted for the required 30-day public comment period.

ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

25. Evaluation of Environmental Effects and Determination of Significance:

Methodology

The environmental effects evaluation methodology used in this form focuses the evaluation of those environmental components of greatest concern. Other concerns identified should also added on to the existing form. The Valued Components (VCs) most likely to be affected by the project as described are indicated in *Table 1: Potential Project/Environment Interactions Matrix*. VCs were selected based on ecological importance to the existing environment, the relative sensitivity of environmental components to project influences and their relative social, cultural or economic importance. The potential impacts resulting from the interactions are also identified in Table 1 as positive or negative in nature.

Gender-based Analysis Plus (GBA+) provides a framework to describe the full scope of potential positive and negative effects under the *Impact Assessment Act*. The application of GBA+ to impact assessment seeks to understand, describe and, where possible, mitigate adverse impacts on diverse populations. GBA+ is an analytical tool that will be utilized during the undertaking of this assessment as per the guidance provided by the IAA on *Gender-based Analysis Plus in Impact Assessment*. As such, the intention is to ensure that, as applicable, multiple community-relevant, diverse subgroups have



been considered and proposed mitigation, where relevant, clearly addresses any issues identified.

The VC interactions identified in Table 1 must be supplemented with a determination of significance for each resulting effect in order to assign adequate measures to mitigate a negative effect if negative and, if possible, enhance a positive effect. The significance of project-related impacts is determined in consideration of the impact's frequency, duration, and geographical extent as well as magnitude relative to natural or background levels, and whether they are reversible in nature. These criteria are described in *Table 2: Assessment Criteria for Determination of Significance*.

A description of each potential effect, its' projected significance and assigned mitigation measures are detailed in Table 3 of Section 26.

The evaluation of effects, the determination of significance of the environmental effects and assignment of mitigation measures are all based on:

- information provided by the proponent;
- a review of project related activities;
- an appraisal of the environmental setting, and identification of resources at risk;
- the identification of potential impacts within the temporal and spatial bounds;
- community / indigenous knowledge;
- professional judgement of the assessor; and
- specialist advice/knowledge from experts.

Scoping

This environmental effects evaluation considers the full range of project / environment interactions and the environmental factors that could be affected by the project as defined above and the significance. The proposed project is anticipated to commence within the aforementioned timeframe; however, this timeline is subject to approvals and funding. As such, the temporal scope for the proposed project cover a 5-year period from the time of this assessment in order to account for this uncertainty. This assessment should, therefore, be considered accurate until October 29, 2026 unless a review of the information presented in this assessment prior to the end of the 5-year period prompts a re-assessment to ensure accuracy (e.g., legislative changes, changes in physical, biological, socio-economic features, input from ongoing Indigenous consultations, etc.).

As previously noted, physical activities such as maintenance, repair, replacement, or decommissioning of the proposed physical works are subject to their own stand-alone assessment at the time of need, therefore, are not considered further in this assessment.

Environmental effects of the project on navigation are taken into consideration as part of the SEED only when the effects are indirect, i.e. resulting from a change in the environment affecting navigation. Direct effects on navigation are not considered in the SEED, but any measures necessary to mitigate direct effects will be included as terms and conditions associated with work approved or permitted pursuant to the *Canadian Navigable Waters Act (CNWA)*.

The coastal environment surrounding this marine based project does not provide the appropriate habitat for the Common Nighthawk, Leach's Storm-Petrel, Fin Whale Blue Whale, Spotted Wolffish, North Atlantic Right Whale, Leatherback Sea Turtle, White Shark and the Northern Wolffish, so there is no negative interaction expected between the species and the project. The effects of the project on these species are not considered further in this assessment.



Table 1: Potential Project / Environment Interactions Matrix

Valued Components (VCs)	Section 7(1)(a) (Environmental Legislation)			Section 7(1)(c) and (d) (Indigenous Interests)				Other Impacts & Due Diligence											
	Fish (Fisheries Act)	SARA	Birds (MBCA)	Physical and Cultural Heritage	Land and Resource Use for Traditional Purposes	Structure, Site, or Thing of HAPA Significance	Health, Social or Economic Conditions	Physical and Cultural Heritage	Structure, Site, or Thing of HAPA Significance	Health, Social or Economic Conditions	Water (marine, ground, surface, drainage, water levels, flow etc.)	Wetlands	Terrestrial Species* and Habitat	Aquatic Species* and Habitat	Terrestrial Soils	Marine Sediments	Air Quality	Sensory Disturbance (air/water, noise and vibration)	Others (i.e. land/landscapes)
Wharf Construction, Burin, NL																			
Construction/Installation	-	-	-				-			-	-			-		-	-	-	
Dredging	-	-	-				-			-	-			-		-	-	-	
Accidents / Malfunctions	-	-	-				-			-	-			-		-			

*Non-Species at Risk

HAPA = Historical, Archaeological, Paleontological or Architectural

N/A = Not Applicable

“+” = potential positive interaction; “-” = potential negative interaction; “+/-” = potential positive and negative interactions.



Table 2: Assessment Criteria for Determination of Significance

Magnitude	Magnitude, in general terms, may vary among issues, but is a factor that accounts for size, intensity, concentration, importance, volume and social or monetary value. It is rated as compared with background conditions, protective standards or normal variability.	
	Small	Relative to natural or background levels
	Moderate	Relative to natural or background levels
	Large	Relative to natural or background levels
Reversibility	Reversible	Effects can be reversed
	Irreversible	Effects are permanent
Geographic Extent	Immediate	Confined to project site
	Local	Effects beyond immediate project site but not regional in scale
	Regional	Effects on a wide scale
Duration	Short-term	Between 0 and 6 months in duration
	Medium-term	Between 6 months and 2 years
	Long-term	Beyond 2 years
Frequency	Once	Occurs only once
	Intermittent	Occurs occasionally at irregular intervals
	Continuous	Occurs on a regular basis and regular intervals



26. Potential Environmental Effects and Mitigation Measures for the Project:

Table 3: Description and Significance of Potential Environmental Effects and Recommended Mitigation Measures

Potential Environmental Effects	Mitigation Measures
Valued Component: Fish	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Sedimentation as a result of construction activities may negatively affect fish and quality of potential fish habitat within the Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent</i> Disturbance of fish species from equipment use in the marine environment. <i>Significance: Moderate, Reversible, Local, Short-term, and Intermittent.</i> Project activities will result in the destruction of potential fish habitat. <i>Significance: Moderate, Reversible, Immediate, Medium-term, and Once.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Sedimentation as a result of construction activities may negatively affect fish and quality of potential fish habitat within the Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent</i> Disturbance of fish species from equipment use in the marine environment. <i>Significance: Moderate, Reversible, Local, Short-term, and Intermittent.</i> Temporary alteration of fish habitat from the removal of benthic sediments within the dredge footprint. <i>Significance: Moderate, Reversible, Immediate, Medium-term, and Once.</i> Project activities will result in the destruction of potential fish habitat. <i>Significance: Moderate, Reversible, Immediate, Medium-term, and Once.</i> <p>Accidents/Malfunctions:</p> <ul style="list-style-type: none"> Release of hazardous materials and/or heavy machinery fuel/fluids into waterway. <i>Significance: Moderate, Reversible, Immediate, Short-term, and Once.</i> 	<ul style="list-style-type: none"> Limit the duration of in-water works to only activity related to the project elements so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating). Conduct in-water undertakings and activities during periods of low tide and low wind/wave conditions. Implement erosion and sedimentation controls as needed to avoid the introduction of sediment into any waterbody during all phases of work <ul style="list-style-type: none"> Install effective erosion and sediment control measures prior to beginning work in order to stabilize all erodible areas; Regularly inspect and maintain the erosion and sediment control measures and structures during all phases of the project; Regularly monitor the watercourse for signs of sedimentation during all phases of the project and take corrective action; Keep the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized; Remove all exposed, non-biodegradable sediment control materials once the site is stabilized; Schedule work to avoid wet, windy, and rainy periods that may result in high flow volumes and/or increase erosion and sedimentation; Minimize the amount of dredged material removed by only dredging to the area and depth required; Dredged or excavated material may be re-used for the laydown area as described, i.e., placed/capped within a rock berm, if analysis results determine it is acceptable. However, any un-used dredge spoils should be disposed of at an approved site. If necessary, adequate sedimentation and erosion control measures should be deployed around stored dredge material; Operate machinery on land in stable, dry areas or from stable floating platforms. All materials placed in or near water should be clean and free of fines or any other deleterious substance and of sufficient size to resist displacement by wave action. Dredge material may be re-used for the laydown area provided it is placed/capped within a rock berm to avoid sedimentation, if analysis results determine it is acceptable. Armour stone should be blocky, angular shape and comprised of mixed gradation so that the smaller rock fill the voids between the larger rock to provide compaction and stability. Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment. When works are completed, shoreline and approaches should be restored to original condition. Be aware of AIS species in the area and take precautions with respect to any vessel traffic and gear movement between affected and unaffected areas to prevent introductions and spread.



	<ul style="list-style-type: none"> ○ All equipment used in water should be cleaned, drained and dried on land before and after use for the purposes of preventing the introduction or spread of aquatic invasive/non-indigenous species; and ○ Report any AIS and non-indigenous species to DFO at 1-855-862-1815 or AISEAE.XNFL@dfo-mpo.gc.ca. • Cement will be poured and formed away from the shoreline to reduce the potential of runoff or an accidental release of concrete mixture to the marine environment • On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). All spills must be reported. • Dredged material must be transported in water tight trucks, containers or other suitable means to prevent leakage during transport.
<p>Valued Component: SARA</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> • Construction activities at the site or natural events (e.g., rainfall) could result in disruption of endangered species. Significance: Small, Reversible, Immediate, Short-term, and Intermittent. • Project activities may result in the damaging or destruction of the residence of an endangered species. Significance: Moderate, Reversible, Immediate, Medium-term, and Once. 	<ul style="list-style-type: none"> • All work to be conducted in accordance with the <i>Species at Risk Act</i>, which outlines that no protected species, their residence and critical habitat be moved or obstructed during the construction or operation phase of the project. • Species listed under the Species at Risk Act shall not be approached throughout the construction or operation phase of the project. • All construction materials shall be removed from the site upon project completion.
<p>Valued Component: Birds (MBCA)</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> • Construction activities at the site or natural events (e.g., rainfall) could result in disruption of bird species. Significance: Small, Reversible, Immediate, Short-term, and Intermittent. • Project activities may result in the destruction of potential bird habitat. Significance: Moderate, Reversible, Immediate, Medium-term, and Once. 	<ul style="list-style-type: none"> • All work to be conducted in accordance with the Migratory Birds Convention Act, which outlines that no migratory bird nests or eggs will be moved or obstructed during the construction or operation phase of the project. • Concentrations of seabirds, waterfowl, or shorebirds shall not be approached when anchoring equipment, accessing wharves, or ferrying supplies. • All construction materials shall be removed from the site upon project completion.
<p>Valued Component: Health, Social or Economic Conditions</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> • Potential for safety hazards to workers during construction activities. Significance: Small, Reversible, Immediate, Short-term, and Intermittent. <p>Dredging:</p> <ul style="list-style-type: none"> • Potential for safety hazards to workers during dredging. Significance: Small, Reversible, Immediate, Short-term, and Intermittent. 	<ul style="list-style-type: none"> • Site access must be restricted to authorized personnel only. • Project employees will be equipped with the proper Personal Protective Equipment for Project tasks, and work will comply with provincial occupational health and safety regulations. • Develop a response plan that is to be implemented in the event of an accidental sediment release or spill of a deleterious substance and keep an emergency spill kit on site with staff trained in its use. <ul style="list-style-type: none"> ○ On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the



	<p>24-Hour Environmental Emergencies Report System (1-800-565-1633). All spills must be reported.</p> <ul style="list-style-type: none"> Weather conditions are to be assessed on a daily basis to determine the risk of extreme weather in the project area. Avoid work during periods which Environment and Climate Change Canada has issued rainfall or wave warning for the work area. Dredged spoils are to be transported to an approved waste disposal site, or approved soil treatment facility.
<p>Valued Component: Water (marine, ground, surface, drainage, water levels, flow, etc.)</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Sedimentation as a result of construction activities may negatively affect water quality at the immediate Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Construction activities taking place near the shoreline may result in runoff/erosion. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Construction-related refuse may be deposited in the waterbody, decreasing marine water quality. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Disturbance of fish species from equipment use in the marine environment. <i>Significance: Moderate, Reversible, Local, Short-term, and Intermittent.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Sedimentation as a result of dredging may negatively affect water quality at the immediate Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Construction-related refuse may be deposited in the waterbody, decreasing marine water quality. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> <p>Accidents/Malfunctions:</p> <ul style="list-style-type: none"> Release of hazardous materials and/or heavy machinery fuel/fluids into waterway. <i>Significance: Moderate, Reversible, Immediate, Short-term, and Once.</i> 	<ul style="list-style-type: none"> Reduce duration of in-water work wherever possible. Construction activities that involve in-water work will be conducted during periods of low flow, or at low tide, to further reduce the potential for effects on water quality. An Erosion and Sediment Control Plan will be developed by the successful contractor for the site which minimizes risk of sedimentation to the marine environment. Construction material and debris are not to become waterborne. Do not dispose of any materials or waste into marine environment. Cement will be poured and formed away from the shoreline, to reduce the potential of runoff or an accidental release of concrete mixture to the marine environment. Any hazardous materials produced as a result of this project are to be transported off-site for disposal/treatment at an approved waste handling facility, pursuant to applicable provincial and federal regulations/legislation. All equipment to be used in or over the marine environment is to be free from leaks or coating of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks. On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). All spills should be reported. All materials placed in or near water should be clean and free of fines or any other deleterious substance and of sufficient size to resist displacement by wave action. Dredge material may be re-used for the laydown area if analysis results provide to acceptable and provided it is placed/capped within a rock berm to avoid sedimentation. Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment. When works are completed, shoreline and approaches should be restored to original condition. Vessels (including barges) should be compliant with all <i>Canada Shipping Act, 2001</i> requirements for inspection, which includes certification of the vessel and adequate training and appropriate certificate of competency for the operators. Ensure that all vessels will have procedures in place to ensure safeguards against marine pollution: awareness training of all employees, means of retention of waste oil on board and discharge to shore based reception facilities, capacity of responding to and clean-up of accidental spill caused by vessels involved in any particular project. Dredged material must be transported in water tight trucks, containers or other suitable means to prevent leakage during transport.



Valued Component: Aquatic Species and Habitat	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Sedimentation as a result of construction activities may negatively affect aquatic species and quality of potential aquatic habitat within the Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Smothering of sessile and slow-moving benthic species during infilling and placement of armour stone within the project footprint. <i>Significance: Small, Irreversible, Immediate, Short-term, and Intermittent.</i> Disturbance of aquatic species from equipment use in the marine environment. <i>Significance: Moderate, Reversible, Local, Short-term, and Intermittent.</i> Permanent loss of habitat used by aquatic species within the Project area. <i>Significance: Small, Irreversible, Immediate, Long-term, Once.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Sedimentation as a result of dredging activities may negatively affect aquatic species and quality of potential aquatic habitat within the Project site. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Disturbance of aquatic species from equipment use in the marine environment. <i>Significance: Moderate, Reversible, Local, Short-term, and Intermittent.</i> Temporary alteration of aquatic habitat from the removal of benthic sediments within the dredge footprint. <i>Significance: Moderate, Reversible, Immediate, Medium-term, and Once.</i> Permanent loss of habitat used by aquatic species within the Project area. <i>Significance: Small, Irreversible, Immediate, Long-term, Once.</i> <p>Accidents/Malfunctions:</p> <ul style="list-style-type: none"> Release of hazardous materials and/or heavy machinery fuel/fluids into waterway. <i>Significance: Moderate, Reversible, Immediate, Short-term, and Once.</i> 	<ul style="list-style-type: none"> Reduce duration of in-water work wherever possible. Construction activities that involve in-water work will be conducted during periods of low flow, or at low tide, to further reduce the potential for effects on aquatic species and habitat. An Erosion and Sediment Control Plan will be developed for the site that minimizes risk of sedimentation to the marine environment. Construction material and debris are not to become waterborne. Do not dispose of any materials or waste into marine environment. Any hazardous materials produced as a result of this project are to be transported off-site for disposal/treatment at an approved waste handling facility, pursuant to applicable provincial and federal regulations/legislation. Cement will be poured and formed away from the shoreline, to reduce the potential of runoff or an accidental release of concrete mixture to the marine environment. Excess dredged spoils are to be transported to an approved waste disposal site, or acceptable soil treatment facility, dependent upon analysis results. All equipment to be used in or over the marine environment is to be free from leaks or coating of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks. On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). All spills should be reported. All materials placed in or near water should be clean and free of fines or any other deleterious substance and of sufficient size to resist displacement by wave action. Dredge material may be re-used for the laydown area provided it is placed/capped within a rock berm to avoid sedimentation, given the analysis results indicate it is acceptable to do so. Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment. When works are completed, shoreline and approaches should be restored to original condition. Dredged material must be transported in water tight trucks, containers or other suitable means to prevent leakage during transport.
Valued Component: Marine Sediments	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Construction activities at the site or natural events (e.g., rainfall) could result in erosion/sedimentation events. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> Exposed soils may erode. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Dredging activities at the site or natural events (e.g., rainfall) could result in erosion/sedimentation events. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> 	<ul style="list-style-type: none"> Reduce duration of in-water work wherever possible. Construction activities that involve in-water work will be conducted during periods of low flow, or at low tide, to further reduce aggregation of marine sediment. An Erosion and Sediment Control Plan will be developed for the site that minimizes risk of sedimentation to the marine environment. Construction material and debris are not to become waterborne. Do not dispose of any materials or waste into marine environment. Cement will be poured and formed away from the shoreline, to reduce the potential of runoff or an accidental release of concrete mixture to the marine environment.



<ul style="list-style-type: none"> Exposed dredge spoils may erode. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> <p>Accidents/Malfunctions:</p> <ul style="list-style-type: none"> Release of hazardous materials and/or heavy machinery fuel/fluids into waterway. <i>Significance: Moderate, Reversible, Immediate, Short-term, and Once.</i> 	<ul style="list-style-type: none"> Any hazardous materials produced as a result of this project are to be transported off-site for disposal/treatment at an approved waste handling facility, pursuant to applicable provincial and federal regulations/legislation. Excess dredged spoils are to be transported to an approved waste disposal site, or approved soil treatment facility, dependent upon analysis results. All equipment to be used in or over the marine environment is to be free from leaks or coating of hydrocarbon-based fluids and/or lubricants harmful to the environment. Hoses and tanks are to be inspected on a regular basis to prevent fractures and breaks. On site, crews must have emergency spill clean-up equipment adequate for the activity involved, and it must be on site. Spill equipment will include, as a minimum, at least one 250 L (i.e., 55 gallon) overpack spill kit containing items to prevent a spill from spreading; absorbent booms, pillows, and mats; rubber gloves; and plastic disposal bags. All spills or leaks must be promptly contained, cleaned up, and reported to the 24-Hour Environmental Emergencies Report System (1-800-565-1633). All spills should be reported. All materials placed in or near water should be clean and free of fines or any other deleterious substance and of sufficient size to resist displacement by wave action. Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment. When works are completed, shoreline and approaches should be restored to original condition. Dredged material must be transported in water tight trucks, containers or other suitable means to prevent leakage during transport.
<p>Valued Component: Air Quality</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Construction activities may result in nuisance effects due to an increase in dust. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Dredging activities may result in nuisance effects due to an increase in dust. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> 	<ul style="list-style-type: none"> Where feasible, mitigation measures, such as dust suppressors, will be implemented to reduce the potential for increased dust during Project activities. All construction materials shall be removed from the site upon project completion. Construction equipment will be turned off when not in use, where practical, to minimize idling.
<p>Valued Component: Sensory Disturbance (air/water, noise, and/or vibration)</p>	
<p>Construction/Installation:</p> <ul style="list-style-type: none"> Construction activities may result in nuisance effects due to an increase in dust and noise, and the use of heavy equipment. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> <p>Dredging:</p> <ul style="list-style-type: none"> Dredging activities may result in nuisance effects due to an increase in dust and noise, and the use of heavy equipment. <i>Significance: Small, Reversible, Immediate, Short-term, and Intermittent.</i> 	<ul style="list-style-type: none"> Project activities must be carried out during times acceptable to local authorities and smaller, less disruptive equipment will be used where possible. Where feasible, mitigation measures, such as dust suppressors, will be implemented to reduce the potential for increased dust during Project activities. Machinery used for the Project should be well muffled to reduce noise for local residents, and local municipality construction by-laws will be adhered to. All construction materials shall be removed from the site upon project completion. Construction equipment will be turned off when not in use, where practical, to minimize idling.



27. Description of any Significant Adverse Environmental Effects of the project (after considering the application of mitigation measures):

Although the potential exists for short-term and/or medium-term environmental effects during the project, with the implementation of recommended mitigation measures no significant adverse effects are anticipated.

28. Cumulative Effects:

The proposed project under assessment is not projected to have any cumulative effects taking into consideration past and potential likely future projects. There are no other predicated effects that may result from the proposed activities. Project specific mitigation outlined in this assessment (Section 26) will be followed as well as proper safety procedures as per applicable municipal, provincial and federal regulations.

29. Climate Change/Sustainability:

Weather conditions should be assessed on a daily basis to determine the potential risks on the project activities. The Contractor is encouraged to consult Environment Canada's local forecast so that the construction work can be scheduled accordingly.

30. Fisheries Act, Species at Risk Act and/or Migratory Birds Convention Act permits or authorizations and general follow-up of the Mitigation Measures :

N/A

REFERENCES

31. References:

Environment and Climate Change Canada (ECCC). 2021. Canadian Climate Normals 1981-2010. Winterland Climate Station, Newfoundland and Labrador. Accessed November 1, 2021. [Canadian Climate Normals 1981-2010 Station Data - Climate - Environment and Climate Change Canada \(weather.gc.ca\)](#)

Important Bird Areas Canada (2020) Map Viewer. Accessed November 1, 2021. <http://www.ibacanada.ca/mapviewer.jsp?lang=en>

Wikipedia. Burin (2021) Accessed on November 1, 2021. [Burin - Wikipedia](#)



DECISION

33. Fisheries and Oceans Canada – Real Property Safety and Security (DFO-RPSS)

- The project is not likely to cause significant adverse environmental effects, and DFO- RPSS may exercise its power, duty or function.**
- The project is likely to cause significant adverse environmental effects, and DFO- RPSS has decided not to exercise its power, duty or function.**
- The project is likely to cause significant adverse environmental effects, and DFO- RPSS will refer the project to the Governor in Council to determine if the significant adverse environmental effects are justified in the circumstances**

Approved by: _____

Date: _____

Name: Margo Edison

Title: Regional Director, DFO – Real Property Safety and Security (DFO-RPSS)



34. Transport Canada

Project Title:	Wharf Construction – Burin, Newfoundland	
TC File No.:		
NPP File No.:	2021-204809	
Environmental Review Decision:	Taking into account the implementation of any mitigation measures that Transport Canada considers appropriate, the project is <i>not likely</i> to cause significant adverse environmental effects and, as such, Transport Canada may exercise any power or perform any duty or function that would permit the project to be carried out in whole or in part.	
Reviewed by:	Melissa Ginn <i>Regional Environmental Advisor</i> <i>Environmental Programs and Indigenous Relations</i>	
Signature:		Date:
Mailing Address:	10 Barter's Hill, St. John's, NL	
Tel:	709-351-3200	
Fax:	709-772-3072	
Email:	melissa.ginn@tc.gc.ca	
Approved By:	Kevin LeBlanc <i>Regional Manager</i> <i>Environmental Programs and Indigenous Relations</i>	
Signature:		Date:



APPENDIX A

Map & Aerial Photograph of Project Location

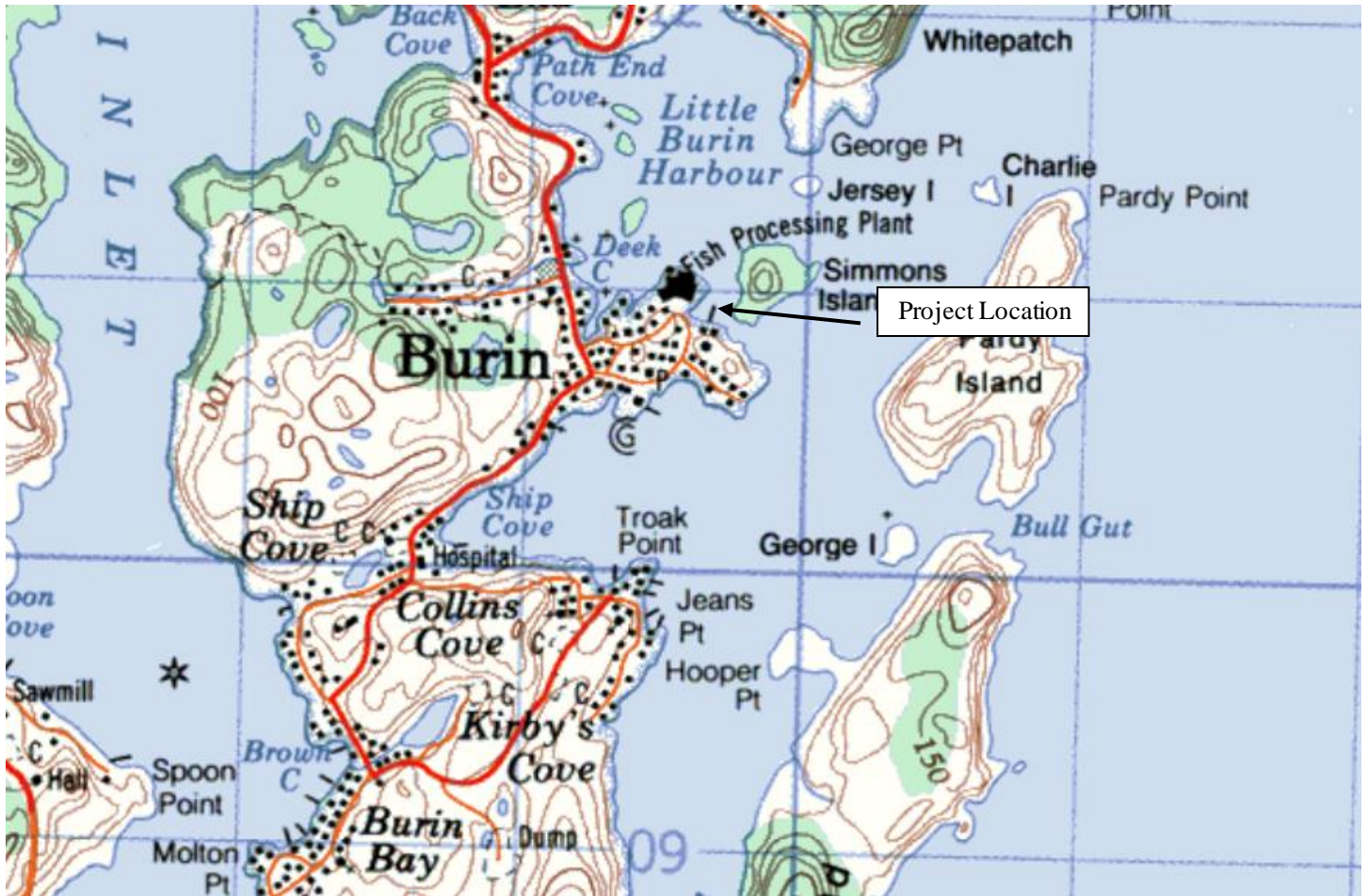


Figure 1 Topo Map of Project Location.



Figure 2 Site Photograph of Project Location in Burin, NL.



APPENDIX B Regulatory Approvals



Fisheries and Oceans Pêches et Océans
Canada Canada

P.O. Box 5667
St. John's, NL A1C 5X1

August 6, 2021

Your file *Votre référence*

Our file *Notre référence*

21-HNFL-00416

Real Property Safety and Security
Fisheries and Oceans Canada
10 Barters Hill
St. John's, NL A1C 5X1

Attention: Mr. William Duggan

Subject: Finger Pier Construction, Repairs and Dredging, Burin Search and Rescue Station – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

Dear Mr. Duggan:

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on July 26, 2021. We understand that you propose to:

- Dredge a 1000m² area of contaminated sediments out of the harbour basin near the Search and Rescue station,
- Install a new 650m² timber crib finger pier with rock mattress, and
- Stabilize the face of the existing marginal wharf with 25m² of new steel sheet pile

Our review considered the following information:

- A request for review form with associated site photos and schematics, and
- Additional information received August 6, 2021

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*. ; and

Canada

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21-HNFL-00416

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- The introduction of aquatic species into regions or bodies of water frequented by fish where they are not indigenous, which is prohibited under section 10 of the *Aquatic Invasive Species Regulations*.

The aforementioned outcomes are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:

- All materials placed in or near water should be clean, free of fines, concrete or any other deleterious substance and of sufficient size to resist displacement by wave action
- Armour stone should be blocky, angular shape and comprised of mixed gradation so that the smaller rock fill the voids between the larger rock to provide compaction and stability
- Rock material should not be end dumped; rather, it should be placed on station using an excavator or similar equipment
- Material used to fill a timber crib structure should never be removed directly from any watercourse or shoreline to be used as ballast
- Operate machinery on land in stable dry areas, or from stable floating platforms
- Minimize the amount of dredged material removed by only dredging the area and depth required
- Dredged material should be deposited on land at approved disposal sites for contaminated sediments
- Limit the duration of in-water works, undertakings and activities so that it does not diminish the ability of fish to carry out one or more of their life processes (spawning, rearing, feeding, migrating)
- Conduct in-water undertakings and activities during periods of low tide
- Extra care is to be taken to avoid sedimentation as sediments in the area are likely to be contaminated; install and maintain effective erosion and sedimentation controls during all phases of work
 - Install effective erosion and sediment control measures prior to beginning work in order to stabilize all erodible areas
 - Regularly inspect and maintain the erosion and sediment control measures and structures during all phases of the project
 - Regularly monitor the area for signs of sedimentation during all phases of the project and take corrective action
 - Keep the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized
 - Remove all exposed, non-biodegradable sediment control materials once the site is stabilized

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- Dispose of, and stabilize, all excavated materials above the high water mark of any waterbodies and ensure sediment re-entry into a watercourse is prevented
 - Schedule work to avoid wet, windy, and rainy periods that may result in high wave action and/or increase in sedimentation
- When works are completed, shoreline and approaches should be restored to original condition
- Be aware of AIS species in the area and take precautions with respect to any vessel traffic and gear movement between affected and unaffected areas to prevent introductions and spread (<https://www.dfo-mpo.gc.ca/species-especes/ais-eae/index-eng.html>)
 - All equipment used in water should be cleaned, drained and dried on land before and after use for the purposes of preventing the introduction or spread of aquatic invasive/non-indigenous species
 - Report any AIS and non-indigenous species to DFO at 1-855-862-1815 or AISEAE.XNFL@dfo-mpo.gc.ca

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations*.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/contact-eng.html>).

We recommend that you notify this office as well as the nearest Conservation and Protection (C&P) office at least 10 days before starting your project and that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact Jack O'Rourke by cell at (709) 725-1286, by fax at (709) 772-5562, or by email at John.ORourke@dfo-

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mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Digitally signed by
O'Rourke, John
Date: 2021.08.06
15:21:48 -02'30'

John O'Rourke
Senior Biologist – Hydro, Flows & Linear Development
Regulatory Review, Fish and Fish Habitat Protection program

Cc: Mark McNeil, Public Services and Procurement Canada



PERMIT TO ALTER A BODY OF WATER

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JANUARY 25, 2022** File No: **524**
Permit No: **ALT12294-2022**

Permit Holder: **Fisheries and Oceans Canada, Real Property Safety & Security**
NAFC, 80 East White Hills Road
St. John's, NL
A1C 5X1
william.duggan@dfo-mpo.gc.ca

Attention: **William Duggan**

Re: **Town of Burin - Little Burin Harbour - Wharf Development**

Permission is hereby given for : **the removal of approximately 4,000 cubic metres of organic matter and the infilling of approximately 4,000 cubic metres of quarry run rock for the construction of a rock mattress and the construction of a new treated cribwork finger pier wharf with an area of approximately 242 square metres within the waters of Little Burin Harbour within the Town of Burin, in reference to the application received on September 21, 2021, and additional information received on November 22, 2021, November 26, 2021, December 15, 2021, and on January 14, 2022.**

- This Permit does not release the Permit Holder from the obligation to obtain appropriate approvals from other concerned municipal, provincial and federal agencies.
- The Permit Holder must obtain the approval of the Crown Lands Administration Division if the project is being carried out on Crown Land.
- This Permit is subject to the terms and conditions indicated in Appendices A and B (attached).
- It should be noted that prior to any significant changes in the design or installation of the proposed works, or in event of changes in ownership or management of the project, an amendment to this Permit must be obtained from the Department of Environment and Climate Change under Section 49 of the *Water Resources Act*.

(for) MINISTER

APPENDIX A
Terms and Conditions for Permit

Dredging/Debris Removal

1. Alteration of the natural minimum streamflow is not permitted in order to preserve aquatic life.
2. The natural course of any stream must not be altered.
3. Dredging activity must only be carried out during periods when wind, wave and tide conditions minimize the dispersion of silt and sediment from the work site.
4. A water quality monitoring program is not required at this time. However, the Department reserves the right to require that the Permit Holder sample, analyse, and submit results of water quality tests, for the purpose of ensuring that the water quality is maintained within acceptable guidelines. All analyses must be undertaken by a CALA accredited laboratory.
5. The area to be dredged must be enclosed and isolated from the rest of the body of water through the use of a filter fabric curtain or similar method.
6. Dredged material must be disposed of in accordance with the regional Service NL Centre of the Department of Service NL. The Department of Service NL may require samples to be submitted for testing and analysis.
7. Dredged material must be disposed of in accordance with the regional Service NL Centre of the Department of Service NL. The Department of Service NL may require samples to be submitted for testing and analysis. Only suitable, rocky material dredged may be used for breakwater construction as it will not be susceptible to erosion.

Infilling

8. The constructed works must be inspected regularly so that action can be taken to undertake repairs as required.
9. Fill material must be obtained from an approved quarry site. It must not be taken from beaches or streams, and must not be dredged from a body of water.
10. Infilling must not cause increased water elevation upstream or increase flow velocity downstream of the site. Reduction of the natural cross sectional area of any watercourse is not permitted.
11. Infilling must not disrupt the established surface drainage pattern of the area.
12. Infilling must not cause increased water elevation upstream or increase flow velocity downstream of the site.
13. Before infilling, any vegetation and topsoil must be completely removed and under no circumstances shall it be used as fill material. Topsoil must be stored and reused in final landscaping of the infilled area.

14. Select heavy rocks must be placed along the toe of any infilling to provide slope stability and erosion protection.

Wharf/Slipway

15. Armour stone must be placed around cribbing, where required, to prevent erosion.
16. Suitable booms must be deployed around construction sites to contain any floating debris that might otherwise be carried away. All booms must be properly maintained and remain in place until all work is completed.
17. The constructed works must comply with all other terms and conditions provided in the Crown Lands grant, lease, or license for occupancy.
18. The Permit Holder must consult with the Department of Fisheries and Oceans should the total combined footprint of the dock exceed 15 metres squared (15m²) and/or it is made of concrete or steel sheeting or any other skirting that isolates the inside of the crib from the rest of the water.
19. The wharf / dock must be constructed in accordance with this department's *Environmental Guidelines for Construction and Maintenance of Wharves, Breakwaters, Slipways and Boathouses* located on the departmental website:
http://www.env.gov.nl.ca/env/waterres/regulations/appforms/Guidelines_for_Wharves.pdf

General Alterations

20. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
21. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
22. Water pumped from excavations or work areas, or any runoff or effluent directed out of work sites, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to a body of water. Effluent discharged into receiving waters must comply with the *Environmental Control Water and Sewage Regulations, 2003*.
23. All operations must be carried out in a manner that prevents damage to land, vegetation, and watercourses, and which prevents pollution of bodies of water.
24. The use of heavy equipment in streams or bodies of water is not permitted. The operation of heavy equipment must be confined to dry stable areas.
25. All vehicles and equipment must be clean and in good repair, free of mud and oil, or other harmful substances that could impair water quality.
26. During the construction of concrete components, formwork must be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
27. Wood preservatives such as penta, CCA or other such chemicals must not be applied to timber near a body of water. All treated wood or timber must be thoroughly dry before being brought to any work site and installed.

28. Any areas adversely affected by this project must be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if considered necessary in the opinion of this Department.
29. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by this project, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
30. All waste materials resulting from this project must be disposed of at a site approved by the Department of Digital Government and Service NL.
31. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any watercourse. Care must be taken to prevent spillage of pollutants into the water.
32. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
33. Sediment and erosion control measures must be installed before starting work. All control measures must be inspected regularly and any necessary repairs made if damage is discovered.
34. Fill material must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters.
35. The attached Completion Report (Appendix C) for Permit No. 12294 must be completed and returned to this Department upon completion of the approved works. Pictures must be submitted along with the completion report, showing the project site prior to and after development.
36. This Permit is valid for two years from the date of issue. Work must be completed by that date or the application and approval procedure must be repeated.
37. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.

APPENDIX B
Special Terms and Conditions for Permit

1. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall keep all systems and works in good condition and repair and in accordance with all laws, by-laws, directions, rules and regulations of any governmental authority. The Permit Holder or its agent(s), subcontractor(s), or consultant(s) shall immediately notify the Minister if any problem arises which may threaten the structural stability of the systems and works, endanger public safety and/or the environment or adversely affect others and/or any body of water either in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for all damages suffered by the Minister and Government resulting from any defect in the systems and works, operational deficiencies/inadequacies, or structural failure.
2. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall operate the said Project and its systems and works in a manner which does not cause any water related and/or environmental problems, including but not limited to problems of erosion, deposition, flooding, and deterioration of water quality and groundwater depletion, in or outside the said Project areas. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) shall be responsible for any and all damages associated with these problems caused as a result of changes, deficiencies, and inadequacies in the operational procedures by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
3. If the Permit Holder or its agent(s), subcontractor(s), or consultant(s) fails to perform, fulfil, or observe any of the terms and conditions, or provisions of this Permit, as determined by this Department, the Minister may, without notice, amend, modify, suspend or cancel this Permit in accordance with the *Water Resources Act*.
4. The Permit Holder and its agent(s), subcontractor(s), and consultant(s) indemnify and hold the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from granting this Permit, systems and works in or outside the said Project areas, or any act or omission of the Permit Holder or its agent(s), subcontractor(s), or consultant(s) in or outside the said Project areas, or arising out of a breach or non-performance of any of the terms and conditions, or provisions of this Permit by the Permit Holder or its agent(s), subcontractor(s), or consultant(s).
5. This Permit is subject to all provisions of the *Water Resources Act* and any regulations in effect either at the date of this Permit or hereafter made pursuant thereto or any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
6. This Permit shall be construed and interpreted in accordance with the laws of the Province of Newfoundland and Labrador.

- cc: Amir Ali Khan, Ph.D., P.Eng.
Manager, Water Rights, Investigations and Modelling Section
Water Resources Management Division
Department of Environment and Climate Change
P.O. Box 8700
4th Floor, West Block, Confederation Building
St. John's, NL A1B 4J6
akhan@gov.nl.ca
- cc: Frank Norman (Eastern)
Land Management Specialist
Crown Lands Administration
Department of Fisheries, Forestry and Agriculture
Howley Building
St. John's
franknorman@gov.nl.ca
- cc: Fisheries Protection Division
Ecosystem Management Branch
Fisheries and Oceans Canada
P.O. Box 5667
St. John's, NL A1C 5X1
FPP-NL@dfo-mpo.gc.ca
- cc: Marine Safety
Transport Canada, Atlantic Regional Headquarters
Airports, Harbours and Ports, and Environmental Services
95 Foundry St.
P.O. Box 42
Moncton, NB E1C 8K6
NPPATL-PPNATL@tc.gc.ca
- cc: Town of Burin
Ms. Joanne Jackman
P.O. Box 370
Burin, NL A0E 1E0
townofburin@eastlink.ca



Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 48

Date: **JANUARY 25, 2022**

File No: **524**

Permit No: **ALT12294-2022**

Permit Holder: **Fisheries and Oceans Canada, Real Property Safety & Security**
NAFC, 80 East White Hills Road
St. John's, NL
A1C 5X1
william.duggan@dfo-mpo.gc.ca

Attention: **William Duggan**

Re: **Town of Burin - Little Burin Harbour - Wharf Development**

Permission was given for : **the removal of approximately 4,000 cubic metres of organic matter and the infilling of approximately 4,000 cubic metres of quarry run rock for the construction of a rock mattress and the construction of a new treated cribwork finger pier wharf with an area of approximately 242 square metres within the waters of Little Burin Harbour within the Town of Burin, in reference to the application received on September 21, 2021, and additional information received on November 22, 2021, November 26, 2021, December 15, 2021, and on January 14, 2022.**

I (the Permit Holder named above or agent authorized to represent the Permit Holder) do hereby certify that the project described above was completed in accordance with the plans and specifications submitted to the Department of Environment and Climate Change and that the work was carried out in strict compliance with the terms and conditions of the Permit issued for this project.

Date: _____ Signature: _____

This completion report must be completed and forwarded to the following address upon completion of the approved work.

Department of Environment and Climate Change
Water Resources Management Division
PO Box 8700
St. John's NL A1B 4J6

APPENDIX D
Location Map for Permit





APPENDIX C

Analytical Results



Your P.O. #: 700585603
 Your Project #: R.116548.001
 Site Location: Burin Site Dredging, NL
 Your C.O.C. #: 47690

Attention: Matt Maloney

MDI Contracting
 37 Deborah Lynn Heights
 Paradise, NL
 Canada A1L 3E6

Report Date: 2021/07/12
 Report #: R6715196
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5911

Received: 2021/06/25, 09:16

Sample Matrix: Sediment
 # Samples Received: 30

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Benzo(b/j)fluoranthene Sum (leachates)	8	N/A	2021/07/12	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (leachates)	4	N/A	2021/07/09	N/A	Auto Calc.
Metals Leach TCLP/CGSB extraction	18	2021/07/06	2021/07/07	ATL SOP 00058	EPA 6020B R2 m
Metals Leach TCLP/CGSB extraction	4	2021/07/07	2021/07/09	ATL SOP 00058	EPA 6020B R2 m
Metals Leach TCLP/CGSB extraction	7	2021/07/08	2021/07/09	ATL SOP 00058	EPA 6020B R2 m
Metals Leach TCLP/CGSB extraction	1	2021/07/09	2021/07/09	ATL SOP 00058	EPA 6020B R2 m
PAH in Leachate by GC/MS (SIM)	4	2021/07/08	2021/07/08	ATL SOP 00103	EPA 8270E R6 m
PAH in Leachate by GC/MS (SIM)	8	2021/07/09	2021/07/09	ATL SOP 00103	EPA 8270E R6 m
TCLP Inorganic extraction - pH	18	N/A	2021/07/06	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - pH	4	N/A	2021/07/07	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - pH	8	N/A	2021/07/08	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - Weight	18	N/A	2021/07/06	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - Weight	4	N/A	2021/07/07	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - Weight	8	N/A	2021/07/08	ATL SOP 00035	EPA 1311 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.



Your P.O. #: 700585603
Your Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your C.O.C. #: 47690

Attention: Matt Maloney

MDI Contracting
37 Deborah Lynn Heights
Paradise, NL
Canada A1L 3E6

Report Date: 2021/07/12
Report #: R6715196
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5911

Received: 2021/06/25, 09:16

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Atena Georgescu, Project Manager II

Email: Atena.Georgescu@bureauveritas.com

Phone# (902)420-0203 Ext:239

=====

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

RESULTS OF ANALYSES OF SEDIMENT

BV Labs ID		PYI094	PYI094	PYI104		PYI105	PYI106	PYI107	PYI108	
Sampling Date		2021/04/20 11:50	2021/04/20 11:50	2021/05/20 12:00		2021/05/20 12:10	2021/05/20 12:20	2021/05/20 12:30	2021/05/20 12:40	
COC Number		47690	47690	47690		47690	47690	47690	47690	
	UNITS	SED 10 T	SED 10 T Lab-Dup	SED 10 M	QC Batch	SED 10 B	SED 9 T	SED 9 M	SED 9 B	QC Batch

Inorganics										
Sample Weight (as received)	g	100	100	100	7448783	100	100	100	100	7446755
Initial pH	N/A	5.0	5.0	5.0	7448787	5.0	5.0	5.0	5.0	7446781
Final pH	N/A	5.3	5.3	5.5	7448787	5.5	5.8	5.9	5.9	7446781

QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		PYI109	PYI109	PYI110	PYI111		PYI112		PYI113	
Sampling Date		2021/05/20 12:50	2021/05/20 12:50	2021/05/20 13:00	2021/05/20 13:10		2021/05/20 13:20		2021/05/20 15:30	
COC Number		47690	47690	47690	47690		47690		47690	
	UNITS	SED 8 T	SED 8 T Lab-Dup	SED 8 M	SED 8 B	QC Batch	SED 7 T	QC Batch	SED 7 M	QC Batch

Inorganics										
Sample Weight (as received)	g	100	100	100	100	7446755	100	7448783	100	7446755
Initial pH	N/A	5.0	5.0	5.0	5.0	7446781	5.0	7448787	5.0	7446781
Final pH	N/A	5.6	5.8	5.5	6.2	7446781	5.2	7448787	5.5	7446781

QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		PYI114		PYI115		PYI116	PYI117	PYI118	PYI119	
Sampling Date		2021/05/20 13:40		2021/05/20 13:50		2021/05/20 14:00	2021/05/20 14:10	2021/05/20 16:00	2021/05/20 16:30	
COC Number		47690		47690		47690	47690	47690	47690	
	UNITS	SED 7 B	QC Batch	SED 6 T	QC Batch	SED 6 M	SED 6 B	SED 5 T	SED 5 M	QC Batch

Inorganics										
Sample Weight (as received)	g	100	7446755	100	7448783	100	100	100	100	7446755
Initial pH	N/A	4.9	7446781	5.0	7448787	5.0	5.0	5.0	5.0	7446781
Final pH	N/A	5.3	7446781	5.2	7448787	5.1	5.6	6.0	5.9	7446781

QC Batch = Quality Control Batch



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

RESULTS OF ANALYSES OF SEDIMENT

BV Labs ID		PYI120	PYI120	PYI121	PYI122		PYI123	PYI124	
Sampling Date		2021/05/21 08:00	2021/05/21 08:00	2021/05/21 08:30	2021/05/21 09:00		2021/05/21 10:00	2021/05/21 10:30	
COC Number		47690	47690	47690	47690		47690	47690	
	UNITS	SED 4 T	SED 4 T Lab-Dup	SED 4 M	SED 4 B	QC Batch	SED 3 T	SED 3 M	QC Batch

Inorganics									
Sample Weight (as received)	g	100	100	100	100	7452065	100	100	7446755
Initial pH	N/A	5.0	5.0	5.0	5.0	7452066	5.0	5.0	7446781
Final pH	N/A	5.6	5.7	5.7	6.0	7452066	5.5	5.6	7446781
QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

BV Labs ID		PYI125		PYI126		PYI127	PYI128	PYI129	PYI130	
Sampling Date		2021/05/21 11:00		2021/05/21 11:15		2021/05/21 11:25	2021/05/21 11:40	2021/05/21 11:55	2021/05/21 12:15	
COC Number		47690		47690		47690	47690	47690	47690	
	UNITS	SED 3 B	QC Batch	SED 2 T	QC Batch	SED 2 M	SED 2 B	SED 1 T	SED 1 M	QC Batch

Inorganics										
Sample Weight (as received)	g	100	7452065	100	7446755	100	100	100	100	7452065
Initial pH	N/A	5.0	7452066	5.0	7446781	5.0	5.0	5.0	5.0	7452066
Final pH	N/A	5.9	7452066	5.5	7446781	5.3	5.3	5.2	5.3	7452066
QC Batch = Quality Control Batch										

BV Labs ID		PYI131	PYJ025	
Sampling Date		2021/05/21 12:25	2021/05/20 16:30	
COC Number		47690	47690	
	UNITS	SED 1 B	SED 5 B	QC Batch

Inorganics				
Sample Weight (as received)	g	100	100	7446755
Initial pH	N/A	5.0	5.0	7446781
Final pH	N/A	5.4	6.1	7446781
QC Batch = Quality Control Batch				



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PYI094	PYI094	PYI104		PYI105	PYI106	PYI107		
Sampling Date		2021/04/20 11:50	2021/04/20 11:50	2021/05/20 12:00		2021/05/20 12:10	2021/05/20 12:20	2021/05/20 12:30		
COC Number		47690	47690	47690		47690	47690	47690		
	UNITS	SED 10 T	SED 10 T Lab-Dup	SED 10 M	QC Batch	SED 10 B	SED 9 T	SED 9 M	RDL	QC Batch

Metals										
Leachable Aluminum (Al)	ug/L	ND	ND	ND	7448311	ND	ND	ND	100	7445916
Leachable Antimony (Sb)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Arsenic (As)	ug/L	25	24	ND	7448311	ND	ND	ND	20	7445916
Leachable Barium (Ba)	ug/L	160	120	54	7448311	160	ND	79	50	7445916
Leachable Beryllium (Be)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Boron (B)	ug/L	1700	1800	1500	7448311	1700	1200	1300	500	7445916
Leachable Cadmium (Cd)	ug/L	ND	ND	ND	7448311	ND	ND	ND	3.0	7445916
Leachable Calcium (Ca)	ug/L	290000	330000	400000	7448311	380000	460000	530000	1000	7445916
Leachable Chromium (Cr)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Cobalt (Co)	ug/L	ND	ND	ND	7448311	ND	ND	ND	10	7445916
Leachable Copper (Cu)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Iron (Fe)	ug/L	2000	2200	3500	7448311	4300	6300	1100	500	7445916
Leachable Lead (Pb)	ug/L	ND	ND	ND	7448311	ND	ND	ND	5.0	7445916
Leachable Lithium (Li)	ug/L	24	25	24	7448311	ND	ND	ND	20	7445916
Leachable Magnesium (Mg)	ug/L	80000	80000	85000	7448311	91000	89000	100000	1000	7445916
Leachable Manganese (Mn)	ug/L	55	54	85	7448311	78	48	38	20	7445916
Leachable Molybdenum (Mo)	ug/L	ND	ND	ND	7448311	ND	ND	26	20	7445916
Leachable Nickel (Ni)	ug/L	23	21	25	7448311	ND	ND	ND	20	7445916
Leachable Potassium (K)	ug/L	18000	17000	15000	7448311	18000	16000	16000	1000	7445916
Leachable Selenium (Se)	ug/L	ND	ND	ND	7448311	ND	ND	ND	10	7445916
Leachable Silver (Ag)	ug/L	ND	ND	ND	7448311	ND	ND	ND	5.0	7445916
Leachable Strontium (Sr)	ug/L	2700	3000	3600	7448311	3500	4100	5000	50	7445916
Leachable Thallium (Tl)	ug/L	ND	ND	ND	7448311	ND	ND	ND	1.0	7445916
Leachable Tin (Sn)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Uranium (U)	ug/L	ND	ND	ND	7448311	ND	ND	ND	1.0	7445916
Leachable Vanadium (V)	ug/L	ND	ND	ND	7448311	ND	ND	ND	20	7445916
Leachable Zinc (Zn)	ug/L	57	51	71	7448311	60	ND	ND	50	7445916

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PYI108	PYI109	PYI109	PYI110	PYI111		PYI112		
Sampling Date		2021/05/20 12:40	2021/05/20 12:50	2021/05/20 12:50	2021/05/20 13:00	2021/05/20 13:10		2021/05/20 13:20		
COC Number		47690	47690	47690	47690	47690		47690		
	UNITS	SED 9 B	SED 8 T	SED 8 T Lab-Dup	SED 8 M	SED 8 B	QC Batch	SED 7 T	RDL	QC Batch

Metals										
Leachable Aluminum (Al)	ug/L	ND	ND	ND	130	ND	7445916	320	100	7448311
Leachable Antimony (Sb)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Arsenic (As)	ug/L	ND	23	ND	52	ND	7445916	23	20	7448311
Leachable Barium (Ba)	ug/L	ND	57	69	140	ND	7445916	130	50	7448311
Leachable Beryllium (Be)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Boron (B)	ug/L	1300	1500	1900	2000	1600	7445916	2800	500	7448311
Leachable Cadmium (Cd)	ug/L	ND	ND	ND	ND	ND	7445916	ND	3.0	7448311
Leachable Calcium (Ca)	ug/L	490000	380000	450000	270000	610000	7445916	210000	1000	7448311
Leachable Chromium (Cr)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Cobalt (Co)	ug/L	ND	ND	ND	ND	ND	7445916	ND	10	7448311
Leachable Copper (Cu)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Iron (Fe)	ug/L	11000	11000	ND (1)	7500	5500	7445916	890	500	7448311
Leachable Lead (Pb)	ug/L	ND	ND	ND	ND	ND	7445916	ND	5.0	7448311
Leachable Lithium (Li)	ug/L	ND	ND	ND	ND	ND	7445916	22	20	7448311
Leachable Magnesium (Mg)	ug/L	92000	86000	110000	110000	96000	7445916	78000	1000	7448311
Leachable Manganese (Mn)	ug/L	66	380	480	210	230	7445916	130	20	7448311
Leachable Molybdenum (Mo)	ug/L	ND	ND	ND	ND	36	7445916	ND	20	7448311
Leachable Nickel (Ni)	ug/L	ND	ND	ND	ND	26	7445916	ND	20	7448311
Leachable Potassium (K)	ug/L	15000	15000	16000	20000	15000	7445916	19000	1000	7448311
Leachable Selenium (Se)	ug/L	ND	ND	ND	ND	ND	7445916	ND	10	7448311
Leachable Silver (Ag)	ug/L	ND	ND	ND	ND	ND	7445916	ND	5.0	7448311
Leachable Strontium (Sr)	ug/L	4500	2700	3000	2700	4000	7445916	1700	50	7448311
Leachable Thallium (Tl)	ug/L	ND	ND	ND	ND	ND	7445916	ND	1.0	7448311
Leachable Tin (Sn)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Uranium (U)	ug/L	ND	ND	ND	ND	2.9	7445916	ND	1.0	7448311
Leachable Vanadium (V)	ug/L	ND	ND	ND	ND	ND	7445916	ND	20	7448311
Leachable Zinc (Zn)	ug/L	ND	120	ND	ND	ND	7445916	150	50	7448311

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 ND = Not detected
 (1) Poor RPD due to sample inhomogeneity.



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PYI113	PYI114		PYI115		PYI116	PYI117		
Sampling Date		2021/05/20 15:30	2021/05/20 13:40		2021/05/20 13:50		2021/05/20 14:00	2021/05/20 14:10		
COC Number		47690	47690		47690		47690	47690		
	UNITS	SED 7 M	SED 7 B	QC Batch	SED 6 T	QC Batch	SED 6 M	SED 6 B	RDL	QC Batch

Metals										
Leachable Aluminum (Al)	ug/L	ND	250	7445916	300	7448311	440	120	100	7445916
Leachable Antimony (Sb)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Arsenic (As)	ug/L	ND	ND	7445916	25	7448311	ND	ND	20	7445916
Leachable Barium (Ba)	ug/L	200	210	7445916	160	7448311	170	220	50	7445916
Leachable Beryllium (Be)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Boron (B)	ug/L	1800	2500	7445916	2600	7448311	2600	1700	500	7445916
Leachable Cadmium (Cd)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	3.0	7445916
Leachable Calcium (Ca)	ug/L	360000	240000	7445916	210000	7448311	130000	300000	1000	7445916
Leachable Chromium (Cr)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Cobalt (Co)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	10	7445916
Leachable Copper (Cu)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Iron (Fe)	ug/L	9400	ND	7445916	1300	7448311	1200	21000	500	7445916
Leachable Lead (Pb)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	5.0	7445916
Leachable Lithium (Li)	ug/L	ND	ND	7445916	24	7448311	ND	ND	20	7445916
Leachable Magnesium (Mg)	ug/L	81000	76000	7445916	73000	7448311	71000	87000	1000	7445916
Leachable Manganese (Mn)	ug/L	100	58	7445916	100	7448311	83	260	20	7445916
Leachable Molybdenum (Mo)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Nickel (Ni)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Potassium (K)	ug/L	18000	18000	7445916	19000	7448311	19000	18000	1000	7445916
Leachable Selenium (Se)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	10	7445916
Leachable Silver (Ag)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	5.0	7445916
Leachable Strontium (Sr)	ug/L	2800	1800	7445916	1800	7448311	1200	2400	50	7445916
Leachable Thallium (Tl)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	1.0	7445916
Leachable Tin (Sn)	ug/L	ND	ND	7445916	ND	7448311	ND	ND	20	7445916
Leachable Uranium (U)	ug/L	ND	1.0	7445916	ND	7448311	ND	ND	1.0	7445916
Leachable Vanadium (V)	ug/L	ND	ND	7445916	20	7448311	24	ND	20	7445916
Leachable Zinc (Zn)	ug/L	200	84	7445916	120	7448311	67	55	50	7445916

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PYI118	PYI119		PYI120	PYI120	PYI121	PYI122		
Sampling Date		2021/05/20 16:00	2021/05/20 16:30		2021/05/21 08:00	2021/05/21 08:00	2021/05/21 08:30	2021/05/21 09:00		
COC Number		47690	47690		47690	47690	47690	47690		
	UNITS	SED 5 T	SED 5 M	QC Batch	SED 4 T	SED 4 T Lab-Dup	SED 4 M	SED 4 B	RDL	QC Batch

Metals										
Leachable Aluminum (Al)	ug/L	ND	ND	7445916	130	100	150	ND	100	7450811
Leachable Antimony (Sb)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Arsenic (As)	ug/L	ND	ND	7445916	ND	ND	20	ND	20	7450811
Leachable Barium (Ba)	ug/L	ND	67	7445916	150	110	170	110	50	7450811
Leachable Beryllium (Be)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Boron (B)	ug/L	1500	1500	7445916	1500	1300	1500	1500	500	7450811
Leachable Cadmium (Cd)	ug/L	ND	ND	7445916	ND	ND	ND	ND	3.0	7450811
Leachable Calcium (Ca)	ug/L	530000	450000	7445916	340000	490000 (1)	510000	630000	1000	7450811
Leachable Chromium (Cr)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Cobalt (Co)	ug/L	ND	ND	7445916	ND	ND	13	ND	10	7450811
Leachable Copper (Cu)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Iron (Fe)	ug/L	ND	6700	7445916	40000	34000	47000	2400	500	7450811
Leachable Lead (Pb)	ug/L	ND	ND	7445916	ND	ND	ND	ND	5.0	7450811
Leachable Lithium (Li)	ug/L	ND	ND	7445916	33	35	48	25	20	7450811
Leachable Magnesium (Mg)	ug/L	96000	86000	7445916	72000	65000	76000	75000	1000	7450811
Leachable Manganese (Mn)	ug/L	150	390	7445916	620	880 (1)	1800	130	20	7450811
Leachable Molybdenum (Mo)	ug/L	ND	ND	7445916	26	30	32	46	20	7450811
Leachable Nickel (Ni)	ug/L	ND	ND	7445916	ND	23	23	33	20	7450811
Leachable Potassium (K)	ug/L	17000	16000	7445916	18000	16000	20000	19000	1000	7450811
Leachable Selenium (Se)	ug/L	ND	ND	7445916	ND	ND	ND	ND	10	7450811
Leachable Silver (Ag)	ug/L	ND	ND	7445916	ND	ND	ND	ND	5.0	7450811
Leachable Strontium (Sr)	ug/L	3900	3200	7445916	2100	2600	2400	3400	50	7450811
Leachable Thallium (Tl)	ug/L	ND	ND	7445916	ND	ND	ND	ND	1.0	7450811
Leachable Tin (Sn)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Uranium (U)	ug/L	ND	ND	7445916	ND	1.9	2.6	3.6	1.0	7450811
Leachable Vanadium (V)	ug/L	ND	ND	7445916	ND	ND	ND	ND	20	7450811
Leachable Zinc (Zn)	ug/L	ND	ND	7445916	51	250 (1)	99	86	50	7450811

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

ND = Not detected

(1) Poor RPD due to sample inhomogeneity. Insufficient sample for repeat analysis.



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PY1123	PY1124		PY1125		PY1126		
Sampling Date		2021/05/21 10:00	2021/05/21 10:30		2021/05/21 11:00		2021/05/21 11:15		
COC Number		47690	47690		47690		47690		
	UNITS	SED 3 T	SED 3 M	QC Batch	SED 3 B	QC Batch	SED 2 T	RDL	QC Batch

Metals									
Leachable Aluminum (Al)	ug/L	ND	ND	7445916	ND	7450811	220	100	7445916
Leachable Antimony (Sb)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Arsenic (As)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Barium (Ba)	ug/L	160	140	7445916	120	7450811	120	50	7445916
Leachable Beryllium (Be)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Boron (B)	ug/L	1700	1400	7445916	1700	7450811	1700	500	7445916
Leachable Cadmium (Cd)	ug/L	ND	ND	7445916	ND	7450811	ND	3.0	7445916
Leachable Calcium (Ca)	ug/L	330000	380000	7445916	540000	7450811	330000	1000	7445916
Leachable Chromium (Cr)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Cobalt (Co)	ug/L	ND	ND	7445916	ND	7450811	ND	10	7445916
Leachable Copper (Cu)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Iron (Fe)	ug/L	14000	13000	7445916	7800	7450811	15000	500	7445916
Leachable Lead (Pb)	ug/L	ND	ND	7445916	ND	7450811	ND	5.0	7445916
Leachable Lithium (Li)	ug/L	ND	ND	7445916	27	7450811	ND	20	7445916
Leachable Magnesium (Mg)	ug/L	83000	89000	7445916	84000	7450811	88000	1000	7445916
Leachable Manganese (Mn)	ug/L	150	120	7445916	210	7450811	840	20	7445916
Leachable Molybdenum (Mo)	ug/L	ND	ND	7445916	41	7450811	ND	20	7445916
Leachable Nickel (Ni)	ug/L	ND	ND	7445916	ND	7450811	37	20	7445916
Leachable Potassium (K)	ug/L	17000	18000	7445916	18000	7450811	15000	1000	7445916
Leachable Selenium (Se)	ug/L	ND	ND	7445916	ND	7450811	ND	10	7445916
Leachable Silver (Ag)	ug/L	ND	ND	7445916	ND	7450811	ND	5.0	7445916
Leachable Strontium (Sr)	ug/L	2700	3400	7445916	3500	7450811	2200	50	7445916
Leachable Thallium (Tl)	ug/L	ND	ND	7445916	ND	7450811	ND	1.0	7445916
Leachable Tin (Sn)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Uranium (U)	ug/L	ND	ND	7445916	2.7	7450811	ND	1.0	7445916
Leachable Vanadium (V)	ug/L	ND	ND	7445916	ND	7450811	ND	20	7445916
Leachable Zinc (Zn)	ug/L	50	ND	7445916	58	7450811	130	50	7445916

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1H5911

Report Date: 2021/07/12

MDI Contracting

Client Project #: R.116548.001

Site Location: Burin Site Dredging, NL

Your P.O. #: 700585603

ELEMENTS BY ICP/MS (SEDIMENT)

BV Labs ID		PYI127	PYI128	PYI129	PYI130		PYI131	PYJ025		
Sampling Date		2021/05/21 11:25	2021/05/21 11:40	2021/05/21 11:55	2021/05/21 12:15		2021/05/21 12:25	2021/05/20 16:30		
COC Number		47690	47690	47690	47690		47690	47690		
	UNITS	SED 2 M	SED 2 B	SED 1 T	SED 1 M	QC Batch	SED 1 B	SED 5 B	RDL	QC Batch

Metals										
Leachable Aluminum (Al)	ug/L	180	180	210	330	7450811	200	ND	100	7445916
Leachable Antimony (Sb)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Arsenic (As)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Barium (Ba)	ug/L	140	140	170	140	7450811	180	ND	50	7445916
Leachable Beryllium (Be)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Boron (B)	ug/L	1600	1600	1900	2400	7450811	1700	620	500	7445916
Leachable Cadmium (Cd)	ug/L	ND	ND	ND	ND	7450811	ND	ND	3.0	7445916
Leachable Calcium (Ca)	ug/L	270000	280000	220000	260000	7450811	240000	640000	1000	7445916
Leachable Chromium (Cr)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Cobalt (Co)	ug/L	ND	ND	ND	ND	7450811	ND	ND	10	7445916
Leachable Copper (Cu)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Iron (Fe)	ug/L	21000	17000	19000	20000	7450811	48000	ND	500	7445916
Leachable Lead (Pb)	ug/L	ND	ND	ND	ND	7450811	ND	ND	5.0	7445916
Leachable Lithium (Li)	ug/L	27	26	32	31	7450811	ND	ND	20	7445916
Leachable Magnesium (Mg)	ug/L	69000	73000	74000	100000	7450811	79000	43000	1000	7445916
Leachable Manganese (Mn)	ug/L	660	510	370	620	7450811	480	210	20	7445916
Leachable Molybdenum (Mo)	ug/L	ND	ND	ND	ND	7450811	ND	33	20	7445916
Leachable Nickel (Ni)	ug/L	ND	65	ND	ND	7450811	ND	ND	20	7445916
Leachable Potassium (K)	ug/L	18000	18000	19000	19000	7450811	19000	8000	1000	7445916
Leachable Selenium (Se)	ug/L	ND	ND	ND	ND	7450811	ND	ND	10	7445916
Leachable Silver (Ag)	ug/L	ND	ND	ND	ND	7450811	ND	ND	5.0	7445916
Leachable Strontium (Sr)	ug/L	2000	2200	1600	1900	7450811	1700	3700	50	7445916
Leachable Thallium (Tl)	ug/L	ND	ND	ND	ND	7450811	ND	ND	1.0	7445916
Leachable Tin (Sn)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Uranium (U)	ug/L	ND	ND	ND	ND	7450811	ND	1.4	1.0	7445916
Leachable Vanadium (V)	ug/L	ND	ND	ND	ND	7450811	ND	ND	20	7445916
Leachable Zinc (Zn)	ug/L	ND	100	ND	ND	7450811	ND	61	50	7445916

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1H5911

Report Date: 2021/07/12

MDI Contracting

Client Project #: R.116548.001

Site Location: Burin Site Dredging, NL

Your P.O. #: 700585603

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

BV Labs ID		PYI094			PYI094			PYI104	PYI112			
Sampling Date		2021/04/20 11:50			2021/04/20 11:50			2021/05/20 12:00	2021/05/20 13:20			
COC Number		47690			47690			47690	47690			
	UNITS	SED 10 T	RDL	QC Batch	SED 10 T Lab-Dup	RDL	QC Batch	SED 10 M	SED 7 T	RDL	QC Batch	

Polyaromatic Hydrocarbons											
Leachable 1-Methylnaphthalene	ug/L	ND	0.50	7450561	ND	0.50	7450561	ND	ND	0.50	7450561
Leachable 2-Methylnaphthalene	ug/L	ND	0.50	7450561	ND	0.50	7450561	ND	ND	0.50	7450561
Leachable Acenaphthene	ug/L	0.24	0.10	7450561	0.24	0.10	7450561	0.11	ND	0.10	7450561
Leachable Acenaphthylene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Anthracene	ug/L	0.28	0.10	7450561	0.27	0.10	7450561	0.23	ND	0.10	7450561
Leachable Benzo(a)anthracene	ug/L	0.15	0.10	7450561	0.12	0.10	7450561	ND	ND	0.10	7450561
Leachable Benzo(a)pyrene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Benzo(b)fluoranthene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Benzo(b,j)fluoranthene	ug/L	ND	0.20	7432368				ND	ND	0.20	7432368
Leachable Benzo(g,h,i)perylene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Benzo(j)fluoranthene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Benzo(k)fluoranthene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Chrysene	ug/L	0.13	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Dibenzo(a,h)anthracene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Fluoranthene	ug/L	6.4	0.10	7450561	6.4	0.10	7450561	5.2	1.5	0.10	7450561
Leachable Fluorene	ug/L	0.55	0.10	7450561	0.56	0.10	7450561	0.45	ND	0.10	7450561
Leachable Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Naphthalene	ug/L	2.0	2.0	7450561	2.0	2.0	7450561	ND	ND	2.0	7450561
Leachable Perylene	ug/L	ND	0.10	7450561	ND	0.10	7450561	ND	ND	0.10	7450561
Leachable Phenanthrene	ug/L	0.21	0.10	7450561	0.21	0.10	7450561	0.24	ND	0.10	7450561
Leachable Pyrene	ug/L	2.9	0.10	7450561	2.9	0.10	7450561	2.2	0.60	0.10	7450561

Surrogate Recovery (%)											
Leachable D10-Anthracene	%	91		7450561	87		7450561	79	80		7450561
Leachable D14-Terphenyl	%	95		7450561	92		7450561	72	77		7450561
Leachable D8-Acenaphthylene	%	90		7450561	89		7450561	90	81		7450561

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

BV Labs ID		PY115		PY120			PY120		
Sampling Date		2021/05/20 13:50		2021/05/21 08:00			2021/05/21 08:00		
COC Number		47690		47690			47690		
	UNITS	SED 6 T	QC Batch	SED 4 T	RDL	QC Batch	SED 4 T Lab-Dup	RDL	QC Batch
Polyaromatic Hydrocarbons									
Leachable 1-Methylnaphthalene	ug/L	ND	7450561	ND	0.50	7453230	ND	0.50	7453230
Leachable 2-Methylnaphthalene	ug/L	ND	7450561	ND	0.50	7453230	ND	0.50	7453230
Leachable Acenaphthene	ug/L	ND	7450561	0.32	0.10	7453230	0.82 (1)	0.10	7453230
Leachable Acenaphthylene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Anthracene	ug/L	ND	7450561	0.46	0.10	7453230	0.42	0.10	7453230
Leachable Benzo(a)anthracene	ug/L	ND	7450561	0.25	0.10	7453230	0.18	0.10	7453230
Leachable Benzo(a)pyrene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Benzo(b)fluoranthene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Benzo(b,j)fluoranthene	ug/L	ND	7432368	ND	0.20	7432368			
Leachable Benzo(g,h,i)perylene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Benzo(j)fluoranthene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Benzo(k)fluoranthene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Chrysene	ug/L	ND	7450561	0.21	0.10	7453230	0.16	0.10	7453230
Leachable Dibenzo(a,h)anthracene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Fluoranthene	ug/L	1.7	7450561	11	0.10	7453230	10	0.10	7453230
Leachable Fluorene	ug/L	0.10	7450561	1.0	0.10	7453230	0.97	0.10	7453230
Leachable Indeno(1,2,3-cd)pyrene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Naphthalene	ug/L	ND	7450561	2.2	2.0	7453230	2.0	2.0	7453230
Leachable Perylene	ug/L	ND	7450561	ND	0.10	7453230	ND	0.10	7453230
Leachable Phenanthrene	ug/L	ND	7450561	0.27	0.10	7453230	0.25	0.10	7453230
Leachable Pyrene	ug/L	0.85	7450561	5.5	0.10	7453230	4.7	0.10	7453230
Surrogate Recovery (%)									
Leachable D10-Anthracene	%	82	7450561	75		7453230	70		7453230
Leachable D14-Terphenyl	%	81	7450561	83		7453230	70		7453230
Leachable D8-Acenaphthylene	%	85	7450561	85		7453230	80		7453230
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected (1) Duplicate: results are outside acceptance limit due to possible sample in-homogeneity. Insufficient sample for repeat analysis									



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

BV Labs ID		PYI121	PYI122	PYI125	PYI127		PYI128		PYI129		
Sampling Date		2021/05/21 08:30	2021/05/21 09:00	2021/05/21 11:00	2021/05/21 11:25		2021/05/21 11:40		2021/05/21 11:55		
COC Number		47690	47690	47690	47690		47690		47690		
	UNITS	SED 4 M	SED 4 B	SED 3 B	SED 2 M	RDL	SED 2 B	RDL	SED 1 T	RDL	QC Batch
Polyaromatic Hydrocarbons											
Leachable 1-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.50	ND	0.50	ND	0.50	7453230
Leachable 2-Methylnaphthalene	ug/L	ND	ND	ND	ND	0.50	ND	0.50	ND	0.50	7453230
Leachable Acenaphthene	ug/L	0.15	4.2	2.0	0.47	0.10	ND	0.10	ND	0.10	7453230
Leachable Acenaphthylene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Anthracene	ug/L	0.39	0.33	0.30	0.25	0.10	ND (1)	0.16	ND (1)	0.18	7453230
Leachable Benzo(a)anthracene	ug/L	0.11	ND	ND	ND	0.10	0.12	0.10	ND	0.10	7453230
Leachable Benzo(a)pyrene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Benzo(b)fluoranthene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Benzo(b/j)fluoranthene	ug/L	ND	ND	ND	ND	0.20	ND	0.20	ND	0.20	7432368
Leachable Benzo(g,h,i)perylene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Benzo(j)fluoranthene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Benzo(k)fluoranthene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Chrysene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Dibenzo(a,h)anthracene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Fluoranthene	ug/L	6.4	4.0	3.7	3.9	0.10	6.0	0.10	5.0	0.10	7453230
Leachable Fluorene	ug/L	0.59	2.4	1.6	0.33	0.10	0.16	0.10	ND (1)	0.13	7453230
Leachable Indeno(1,2,3-cd)pyrene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Naphthalene	ug/L	ND	ND	ND	ND	2.0	ND	2.0	ND	2.0	7453230
Leachable Perylene	ug/L	ND	ND	ND	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Phenanthrene	ug/L	0.14	0.12	0.11	ND	0.10	ND	0.10	ND	0.10	7453230
Leachable Pyrene	ug/L	2.9	1.6	1.4	1.5	0.10	2.7	0.10	2.3	0.10	7453230
Surrogate Recovery (%)											
Leachable D10-Anthracene	%	71	80	76	67		68		57		7453230
Leachable D14-Terphenyl	%	76	77	70	78		98		74		7453230
Leachable D8-Acenaphthylene	%	82	86	89	82		84		83		7453230
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected (1) Elevated PAH RDL(s) due to matrix / co-extractive interference.											



BUREAU
VERITAS

BV Labs Job #: C1H5911
Report Date: 2021/07/12

MDI Contracting
Client Project #: R.116548.001
Site Location: Burin Site Dredging, NL
Your P.O. #: 700585603

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

BV Labs ID		PY1130		
Sampling Date		2021/05/21 12:15		
COC Number		47690		
	UNITS	SED 1 M	RDL	QC Batch
Polyaromatic Hydrocarbons				
Leachable 1-Methylnaphthalene	ug/L	ND	0.50	7453230
Leachable 2-Methylnaphthalene	ug/L	ND	0.50	7453230
Leachable Acenaphthene	ug/L	ND	0.10	7453230
Leachable Acenaphthylene	ug/L	ND	0.10	7453230
Leachable Anthracene	ug/L	ND (1)	0.23	7453230
Leachable Benzo(a)anthracene	ug/L	ND	0.10	7453230
Leachable Benzo(a)pyrene	ug/L	ND	0.10	7453230
Leachable Benzo(b)fluoranthene	ug/L	ND	0.10	7453230
Leachable Benzo(b/j)fluoranthene	ug/L	ND	0.20	7432368
Leachable Benzo(g,h,i)perylene	ug/L	ND	0.10	7453230
Leachable Benzo(j)fluoranthene	ug/L	ND	0.10	7453230
Leachable Benzo(k)fluoranthene	ug/L	ND	0.10	7453230
Leachable Chrysene	ug/L	ND	0.10	7453230
Leachable Dibenzo(a,h)anthracene	ug/L	ND	0.10	7453230
Leachable Fluoranthene	ug/L	4.7	0.10	7453230
Leachable Fluorene	ug/L	ND (1)	0.12	7453230
Leachable Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	7453230
Leachable Naphthalene	ug/L	ND	2.0	7453230
Leachable Perylene	ug/L	ND	0.10	7453230
Leachable Phenanthrene	ug/L	ND	0.10	7453230
Leachable Pyrene	ug/L	2.2	0.10	7453230
Surrogate Recovery (%)				
Leachable D10-Anthracene	%	66		7453230
Leachable D14-Terphenyl	%	75		7453230
Leachable D8-Acenaphthylene	%	85		7453230
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected (1) Elevated PAH RDL(s) due to matrix / co-extractive interference.				



BUREAU
VERITAS

BV Labs Job #: C1H5911
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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.2°C
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Results relate only to the items tested.