

Appendix A

**FISHERIES AND OCEANS
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012
PROJECT EFFECTS DETERMINATION REPORT**

GENERAL INFORMATION

1. Project Title: Wharf Reconstruction, Foxtrap, NL	
2. Proponent: Fisheries and Oceans Canada, Small Craft Harbours (DFO SCH)	
3. Other Contacts (Other Proponent, Consultant or Contractor): Public Works and Government Services Canada	4. Role: OGD Consultant
5. Source of Project Information: Paul Curran, Chief Engineer, DFO – Small Craft Harbours	
6. Project Review Start Date: May 31, 2018	
7. PATH No.: NA	8. PWGSC File No.:
9. TC File No.: NPP# 8200-09-1175 / NEATS: 48085	

BACKGROUND

10. Background about Proposed Development (including a description of the proposed development):

The scope of work includes the demolition and reconfiguration of the existing marginal wharf, and construction of a new concrete launchway at the DFO-SCH facility in Foxtrap, NL (see Appendix A). Portions of the existing marginal wharf will be demolished and replaced in approximately the same location, but will be extended in the northwest section in replacement of the existing slipway.

PROJECT REVIEW

11. DFO's rationale for the project review:

Project is on federal land and;

- DFO is the proponent
- DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit
- DFO to provide financial assistance to another party to enable the project to proceed
- DFO to lease or sell federal land to enable the project to proceed
- Other

12. Fisheries Act Sections (if applicable):

n/a

13. Other Authorities <ul style="list-style-type: none">• Transport Canada – Navigation Protection Program (NPP) and Environmental Affairs and Aboriginal Consultation Unit	14. Other Authorities rationale for involvement: <ul style="list-style-type: none">• <i>Navigation Protection Act</i>
15. Other Jurisdiction: <ul style="list-style-type: none">• Department of Municipal Affairs and Environment , Water Resources Division (NLDMAE WR)• Service NL• Department of Municipal Affairs and Environment, Pollution Prevention Division (NLDMAE PP)	

16. Other Expert Departments Providing Advice: <ul style="list-style-type: none">• Fisheries and Oceans Canada, Fisheries Protection Program (DFO-FPP)	17. Areas of Interest of Expert Departments: <ul style="list-style-type: none">• <i>Fisheries Act</i>
18. Other Contacts and Responses: n/a	

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

Project Description

The project scope of work includes:

- Demolition and removal of existing marginal wharf, slipway and boat storage area
- Construction of new marginal wharf with treated timber cribwork and reinforced concrete decking
- Construction of new concrete launchway with pre-cast concrete panels
- Harbour dredging
- Installation of new electrical

The existing marginal wharf, wooden slipway and concrete slipway will be removed in their entirety (including all underlying cribwork and support posts). There are currently seven floating docks within the project footprint. Five of the existing floating docks will remain in place and the contractor will reinstate the existing gangways to the new marginal wharf. The existing handicap floating dock located on the northwest corner of the marina will be temporarily removed during construction activities and reinstalled on the new wharf. One floating dock located on the southeast corner of the marina will be removed to allocate the area of the new slipway and will be installed on the fisherman's wharf further east.

The marginal wharf reconstruction will see the installation of 31 new 4.87 m wide cribs in total and will be generally placed within the same footprint as the existing marginal wharf, but will be extended in the northwest section in replacement of the existing slipway. The new marginal wharf section will measure 186 meters along the docking edge. The new launchway will be placed at the southeastern end of the new marginal wharf and be constructed of four 6.1 m X 6.1 m cribs (24.4 meters long) and topped with pre-cast concrete panels. To accommodate new cribwork, the footprint of the new marginal wharf and new launchway will be excavated to hard flat bottom (2.55 m below LNT for marginal wharf cribs and 3.05 m below LNT for launchway cribs). Clean rock fill will be utilized as ballast. There will be backfilling of the area behind the new marginal wharf and topped with granulars back to roadway along the southern portion and topped with asphalt in the northwestern portion that will blend into existing paved road.

To provide adequate draft for vessels utilizing the facility, the project will involve the dredging of approximately 2000 m³ of harbour material to an elevation of 2.00 m below LNT. The dredge material will be disposed of as appropriate dependent on the results of the sediment analysis, but likely at an approved landfill site. Construction debris will be disposed of appropriately as per regulatory approvals. Creosote timber is anticipated to be present in some the infrastructure being removed. These materials will be disposed of as appropriate dependent on the results of the timber analysis.

New electrical pedestals will be installed on the existing floating docks. The new electrical wiring will be re-routed thorough concrete encased conduits buried in a new trench running along the new marginal wharf.

Refer to the site plans in Appendix B.

Operation

The Environmental Management System with an integrated Environmental Management Plan for the Harbour Authority of Foxtrap will cover operational aspects of environmental management at the harbour (fuelling, waste disposal, activities on the property and water).

Decommissioning

This facility is not presently planned to be decommissioned. At the time of decommissioning, Small Craft Harbours will develop a site-specific re-use or reclamation plan that is appropriate for the applicable environmental legislation and Fisheries and Oceans Canada policies.

Scheduling

Commencement of this project is subject to DFO SCH operational priorities and funding, as well as regulatory approval, but will likely proceed during the 2018-2019 fiscal year.

20. Location of Project:

The project site is located within the community of Foxtrap in the Town of Conception Bay South, and is accessible via Delaneys Road within the community of Foxtrap from provincial route 60. The approximate coordinates of the project site are 47° 30' 48" N and 52° 59' 56" W.

21. Environment Description:

The project site is located within a commercially and recreationally active harbour owned by the Small Craft Harbours Branch of Fisheries and Oceans Canada. The site is comprised of marginal and finger pier wharves, many floating docks, armour stone breakwater and slipway. An aerial photograph of the project site is included in Appendix A.

Foxtrap is situated in the Maritime Barrens Ecoregion, which extends from the east coast of Newfoundland to the west coast through the south central portion of the island. This Atlantic Ocean-influenced boreal ecoregion extends westward across the southern half of the uplands of Newfoundland to the Long Range Mountains. The ecoregion is marked by foggy, cool summers and short, relatively moderate winters along the coast and colder inland. The mean annual temperature is approximately 5.5°C. The mean summer temperature is 11.5°C and the mean winter temperature is -1°C. The mean annual precipitation ranges 1200 mm to over 1600 mm. This ecoregion is classified as having an oceanic mid-boreal ecoclimate. It is dominated by nearly pure, closed, intermediate stands of balsam fir. Fires have caused widespread destruction of the forests, and the subsequent replacement of fir by stands of sparse black spruce, balsam fir, tamarack, and mixed ericaceous shrubs, along with mosses and lichen. *Kalmia* and sphagnum moss occur on large tracts of blanket and flat bogs. The ecoregion ranges from sea level to about 250 m asl in elevation and is composed predominantly of a mixture of late Precambrian and Palaeozoic sedimentary rocks and granites. Where stream erosion has cut deeply, the uplands are rugged and rocky, but elsewhere they present a rolling terrain of low relief. The surface of the uplands is dominated by rolling to hummocky, sandy morainal deposits and is associated predominantly with Humo-Ferric Podzolic soils. Significant inclusions are acidic rock outcroppings, Ferro-Humic Podzols, peaty Gleysols, and Fibrisols.

Sediment samples were collected from the project site. Results of the analysis are as follows;

- Five of the six samples had exceedance to the met CCME Industrial Soil Quality Guidelines for metals, (Soil Update 7.0: September 2007) and TCLP + leachate was subsequently completed on the samples;
- All six samples tested within *CCME Human health guidelines based on carcinogenic effects of PAH's: Polycyclic Aromatic Hydrocarbons* (2010) Table 1; *SQG based on *incremental lifetime cancer risk (ILCR) of 10⁻⁵*;
- All six samples tested within *CCME Environmental health guidelines for an industrial site: Polycyclic Aromatic Hydrocarbons* (2010);
- Modified Total Petroleum Hydrocarbons (TPH) were detected in some samples but below the 1000mg/kg guideline;
- All samples tested below the CCME Industrial Soil Quality Guidelines for BTEX parameters identified for landfill disposal (Soil Update 7.0: September 2007);
- PCB's were not detected in any of the samples

Species at Risk (Aquatic and Terrestrial)

A Species at Risk search was completed on July 6th. Foxtrap is within the distributional range of the Blue Whale (endangered), North Atlantic Right Whale (endangered), Red Crossbill (endangered), Ivory Gull (endangered), Red Knot (endangered), Boreal Felt Lichen (endangered), Bank Swallow (threatened), Chimney Swift (threatened), Bobolink (threatened), Harlequin Duck (special concern), and Monarch Butterfly (special concern), all placed on Schedule 1 of the *Species at Risk Act* (SARA) by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It is unlikely that the proposed development contains any critical, limiting, or sensitive habitat for any of the listed Species at Risk.

22. Scope of Effects Considered (sections 5(1) and 5(2)):

Table 1: Potential Project / Environment Interactions Matrix

Project Phase / Physical Work/Activity	As per Section 5(1)			Section 5(1c) Aboriginal Interest				Section 5(2)			Due Diligence			
	Fish (Fisheries Act)	Aquatic Species (SARA)	Birds (MBCA)	Health and Socio economic	Physical and cultural heritage	Land use	*HAPA Significance	Health and Socio economic	Physical and cultural heritage	*HAPA Significance	Water (ground, surface drainage, etc)	Terrestrial/Aquatic Species	Soil/Marine Sediments	Air Quality
Harbour development														
Demolition, removal and reconstruction of marginal wharf and launchway	P	-	P	-	-	-	-	P	-	-	P	P	P	P
Dredging	P	-	P	-	-	-	-	P	-	-	P	P	P	P
Dredge spoil disposal	P	-	P	-	-	-	-	P	-	-	P	P	P	P
Operation / Maintenance	P	-	-	-	-	-	-	-	-	-	P	-	-	-
Decommissioning / Abandonment	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

Legend: P = Potential Effect of Project on Environment; '-' = No Interaction

23. Environmental Effects of Project:

In the table above, potential environmental effects were identified. Scoped project activities such as dredging, disposal, wharf construction and infilling have the potential to effect the environment. Each of the potential effects are addressed here:

Fish / Fish Habitat

- Dredging activities could result in the loss of fish habitat.
- Sedimentation as a result of placement of infilling material may negatively impact fish and quality of potential fish habitat.
- Infilling and construction of new wharf may result in destruction of potential fish habitat.

Birds/Bird Habitat

- Any type of hydrocarbon spill could result in bird or bird habitat loss.
- Noise / fumes may result in birds avoiding the site and surrounding area.

Health and Socio economic

- Potential for safety hazards to workers during demolition and construction activities.

Water

- Improper disposal of dredge material could result in contamination of groundwater by placement in areas that may be susceptible to groundwater.
- Improper disposal of dredge material could result in contamination of freshwater (e.g. dredge material placed in or near a waterbody).
- Dredging activities resulting in a sedimentation event within the water column.
- Construction activities taking place near the shoreline may result in run off / erosion.
- Construction of finger pier wharf will result in a loss of flora, fauna, and habitat.
- Sedimentation as a result of infilling may decrease marine water quality at immediate project site.
- Any type of hydrocarbon spill could result in adverse effects on water quality.

Aquatic species

- Sedimentation as a result of removal/reinstatement of cribs and infilling may negatively impact aquatic species near project site.
- Accidental discharge of heavy machinery fuel/fluids may negatively impact aquatic species near project site.

Soil (Surface and Subsurface)/Marine Sediments

- Project activities could potentially result in soil contamination due to improper disposal of dredge material or to some type of mechanical malfunction resulting in a hydrocarbon spill.
- Construction activities at site or natural events (e.g. rainfalls) could result in erosion / sedimentation events.
- Improper disposal of waste material and dredge material could result in contamination of soil.

Air Quality / Noise

- May cause a temporary disturbance to residents and wildlife/marine life.

Navigation

- Environmental effects of the project on navigation are taken into consideration as part of the Project Effects Determination (PED) 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 PED, but any measures necessary to mitigate direct effects will be included as terms and conditions associated with the work approved or permitted pursuant to the *Navigation Protection Act*.

24. Mitigation Measures for Project (including Habitat Compensation):

Work should be scheduled to avoid periods of heavy precipitation. Erosion control structures (temporary matting, geotextile filter fabric) are to be used, as appropriate, to prevent erosion and release of sediment and/or sediment laden water during the construction phase.

As part of this project's pre-planning process, marine sediment samples were collected from the proposed dredge areas and submitted for chemical analysis. The sediment materials will be disposed of at an approved landfill.

The in-water use of heavy equipment is not permitted. The operation of such equipment should be from dry/stable shoreline areas.

Work should be properly timed to avoid potential interference with commercial and/or recreational fisheries.

Appropriate sedimentation control measures (e.g. silt curtains, booms, etc), should be deployed where required.

All wastes should be recycled where possible or otherwise disposed of appropriately. All treated timber should be disposed of in an approved landfill site as per the Service NL letter.

All crib backfill material should be clean and obtained from an approved quarry.

All drainage and wash water from concrete production should be properly contained and should not drain into the marine environment.

There should be no sedimentation events as a result of proposed activities. If required, mitigation measures must be implemented such as installation of a turbidity barrier, construction of sediment ponds, etc.

Machinery should be well muffled and local municipality construction by-laws must be adhered to.

Machinery must be checked for leakage of lubricants or fuel and must be in good working order. Refuelling must be done at least 100m from any water body. Basic petroleum spill clean-up equipment should be on-site. All spills or leaks should be promptly contained, cleaned up and reported to the 24-hour environmental emergencies report system (1-800-563-9089). The proponent should consider developing a contingency plan specific to the proposed undertaking to enable a quick and effective response to a spill event.

Weather conditions should be assessed on a daily basis to determine the potential risk on project activities.

Several environmental approvals / permits have been obtained on behalf of SCH. These include:

1. NLDMAE provided Water Resources Permit to Alter a Water Body Minor Dredging Permit.
2. NLDMAE Pollution Prevention approval to dispose creosote timber.

3. Service NL provided approval to dispose of dredge sediment material to an approved landfill.
4. Transport Canada provided Navigation Protection Permit.
5. Fisheries and Oceans provided Letter of Advice for the project outlining mitigation measures for the protection of fish and fish habitat.

These approvals are attached in Appendix C and all conditions/mitigation measures must be reviewed and implemented by the contractor.

The project is covered under NL DMAE Terms & Conditions, and the conditions associated with Transport Canada's, *Navigation Protection Act* authorization. Fisheries and Oceans Canada, Fisheries Protection Program determined that the project would likely not result in Serious Harm to fish or fish habitat and prescribed several mitigation measures to help mitigate potential environmental impacts (included above).

The proponent should ensure that copies of all regulatory approvals are available on-site during project activities.

Workers in contact with hazardous materials (e.g. wastes) must be provided with and use appropriate personal protective equipment;

Proper safety procedures must be followed during the duration of the project as per applicable municipal, provincial, and federal regulations;

Employees will be trained in health and safety protocols (e.g. safe work practices, emergency response).

25. Significance of Adverse Environmental Effects of project:

Significant adverse environmental effects are unlikely, taking into account mitigation measures.

26, Other Considerations (Public Consultation, Aboriginal Consultation, Follow-up)

Public Consultation

The proposed project will provide more adequate and secure access for vessels utilizing this facility. No negative public concern was received as a result of this project. SCH consulted the local harbor users and Harbour Authority on all aspects of the project to ensure all requirements at the site were considered during design.

Aboriginal Consultation

Aboriginal fishers are not known to utilize the Foxtrap SCH facility, nor are there any known aboriginal groups in the surrounding area. As such, aboriginal consultation was not deemed necessary as part of this determination.

Government Consultation

Federal and provincial authorities likely to have an interest in the project were consulted by Public Works & Government Services Canada, Environmental Services, during the course of this assessment. A project description was distributed to the following authorities:

- Fisheries and Oceans Canada – Fisheries Protection Program (DFO-FPP)
- NL Department of Municipal Affairs and Environment, Water Resources Division (NLDMAE WR)
- Department of Municipal Affairs and Environment, Pollution Prevention Division (NLDMAE PP)
- Service NL

- Transport Canada – Navigation Protection Program (TCNPP) and Environmental Affairs and Aboriginal Consultation Unit (TCEA)

Accuracy and Compliance Monitoring

A follow-up program (as defined in S. 2(1) and as applicable to non-designated projects on federal lands) is a program for determining the effectiveness of any mitigation measures. Site monitoring (accuracy and compliance monitoring) may be conducted to verify whether required mitigation measures were implemented. The proponent must provide site access to Responsible Authority officials and/or its agents upon request.

27. Other Monitoring and Compliance Requirements (e.g. *Fisheries Act* or *Species at Risk Act* requirements)

n/a

CONCLUSION

28. Conclusion on Significance of Adverse Environmental Effects:

The Federal Authorities have evaluated the project in accordance with Section 67 of *Canadian Environmental Assessment Act (CEAA), 2012*. On the basis of this evaluation, the departments have determined that the project is not likely to cause significant adverse environmental effects with mitigation and therefore can proceed as outlined.

29. Prepared by:

Cathy Martin

30. Date: August 24, 2018

31. Name:

Cathy Martin

32. Title:

Environmental Specialist, PWGSC-ES

DECISION

33. Decision Taken

- DFO may exercise its power, duty or function, i.e. may issue the authorization - where the project is not likely to cause significant adverse environmental effects. Confirm below the specific power, duty or function that may be exercised.
- DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit
 - DFO to proceed with project (as proponent)
 - DFO to provide financial assistance for project to proceed
 - DFO to provide federal land for project to proceed
- DFO has decided not to exercise its power, duty or function because the project is likely to cause significant adverse environmental effects.
- DFO to ask the Governor in Council to determine if the significant adverse environmental effects are justified in the circumstances

34. Approved by:

Paul Curran

35. Date:

Aug 27/18

36. Name:

Paul Curran

37. Title:

Regional Engineer, DFO-SCH, NL

38. References:

n/a

39. TRANSPORT CANADA RECOMMENDATION

Project Title:	Wharf Reconstruction, Foxtrap, NL	
TC File No.:	NEATS: 48085	
NPP File No.:	NPP #8200-09-1175	
Environmental Review Decision:	Taking into account the implementation of any mitigation measures that Transport Canada considers appropriate, the project is not likely 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.	
Prepared by:	Melissa Ginn Environmental Officer Environmental Affairs and Aboriginal Consultation Unit	
Signature:		Date:
Mailing Address:	10 Barter's Hill, St. John's, NL	
Tel:	709-772-3088	
Fax:	709-772-3072	
Email:	melissa.ginn@tc.gc.ca	
Recommended by:	J. Jason Flanagan Senior Environmental Assessment Officer Environmental Affairs and Aboriginal Consultation Unit	
Signature:		Date:
Approved by:	Kevin LeBlanc Regional Manager Environmental Affairs and Aboriginal Consultation Unit	
Signature:		Date:

Appendix A FIGURES

- Topo Map
- Aerial Photographs

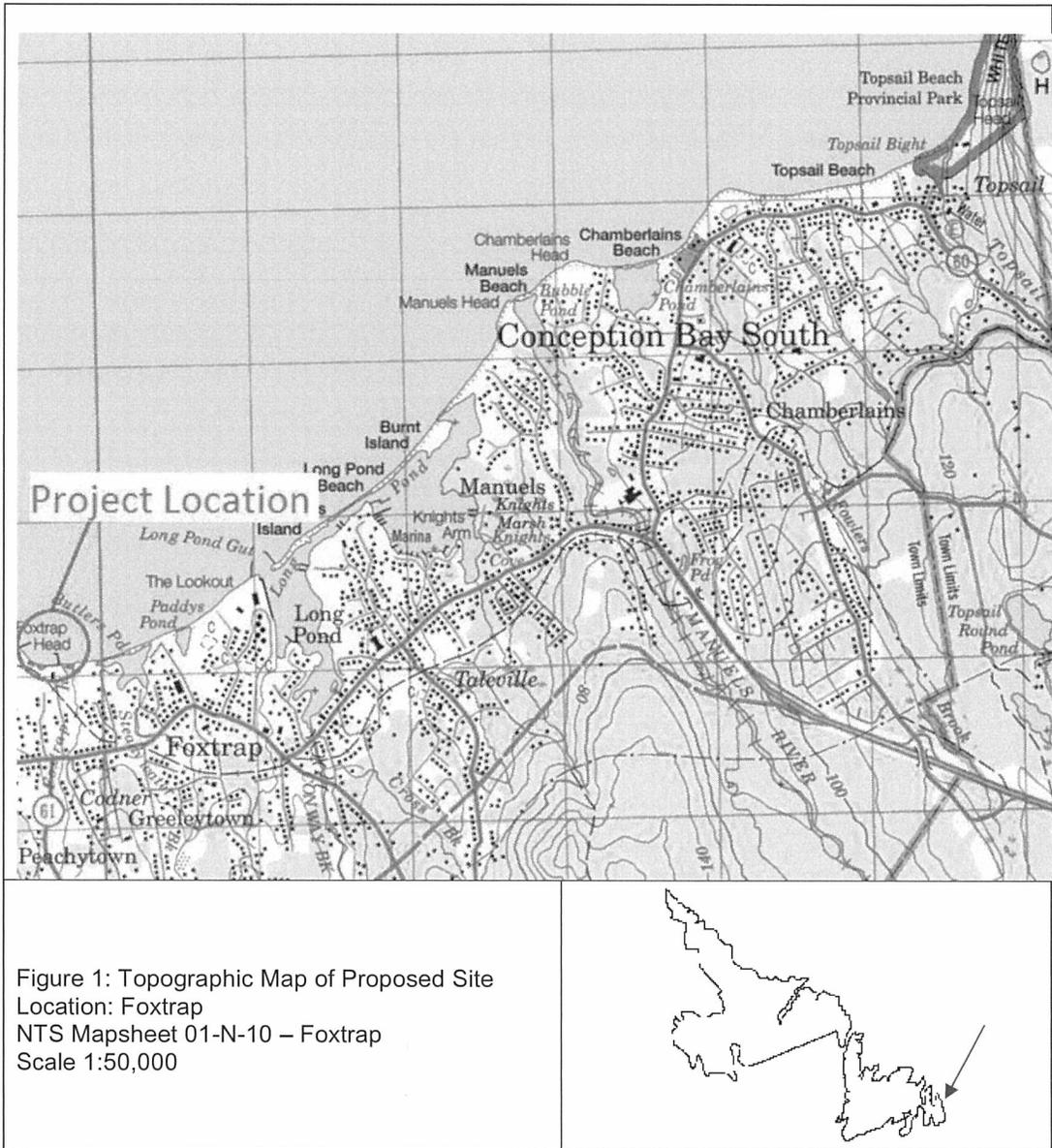


Figure 1: Topographic Map indicating project site.



Figure 2: Location of proposed project (DFO Aerial Photograph 2015).



Figure 3: Approximate footprint of proposed wharf structure and launchway (DFO Aerial Photograph 2015).
**Illustration not to scale.

Appendix B SITE PLANS

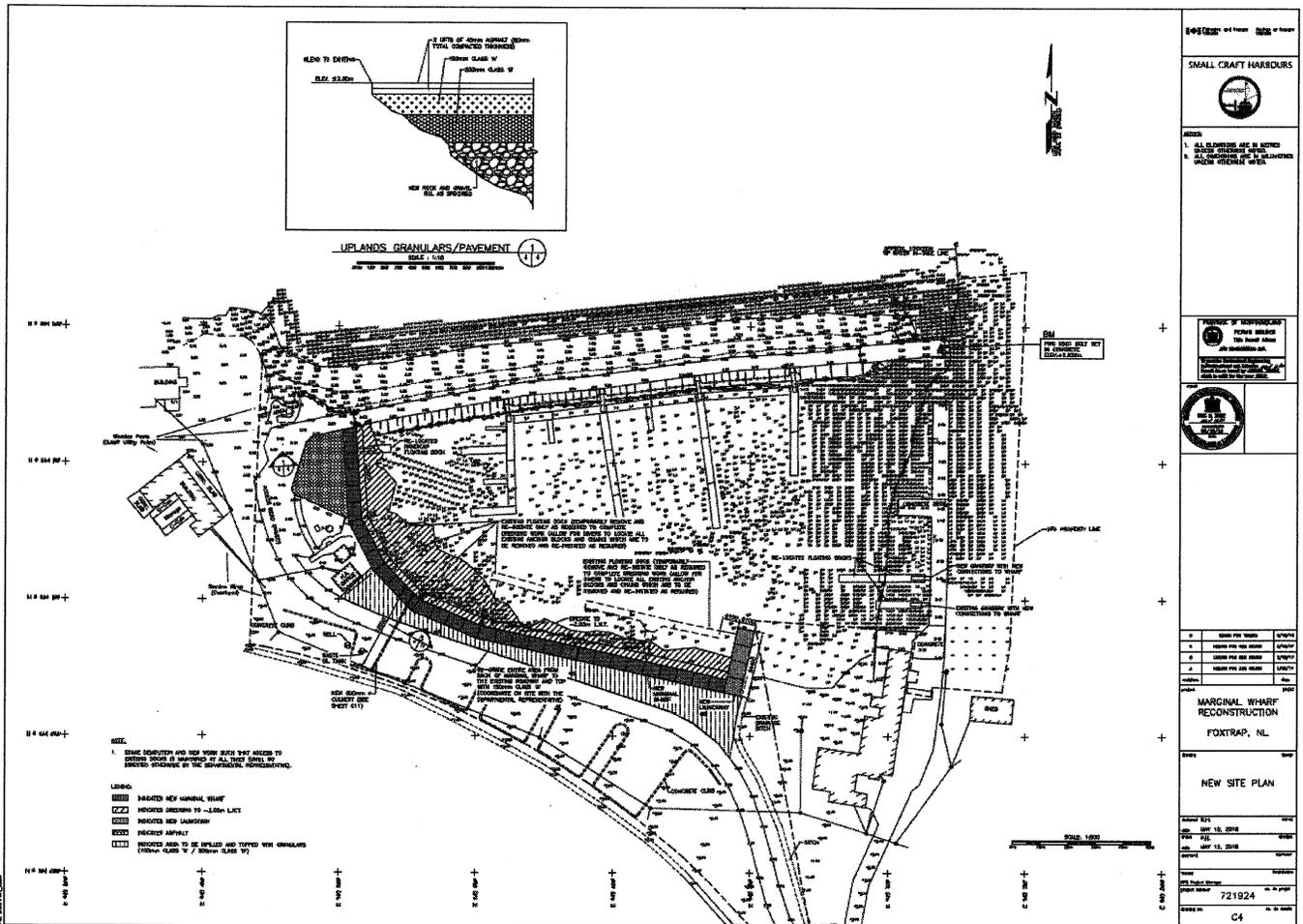


Figure 6: Site Plan of Proposed Marginal Wharf and Launchway Construction.

Appendix C REGULATORY APPROVALS

PERMIT TO ALTER A BODY OF WATER

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

Date: **MARCH 03, 2017**

File No: **532-02**
Permit No: **ALT8600-2017**

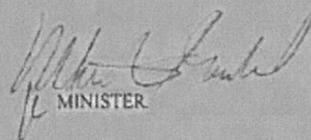
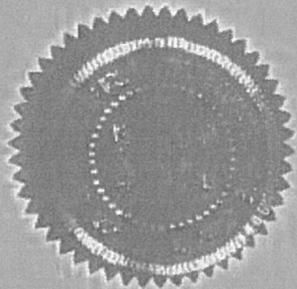
Permit Holder: **Department of Fisheries and Oceans Canada
Small Craft Harbour Branch
John Cabot Building, 10 Barter's Hill
St. John's NL A1C 5X1**

Attention: **Mr. Paul Curran**

Re: **Minor DFO Dredging and Works Projects**

Permission is hereby given for routine dredging or beach grading of 2000 cubic metres or less of primarily sand, gravel, cobble, and boulder material and other associated works in or near bodies of water in order to provide safe navigation at for the Department of Fisheries and Oceans' small craft harbours at various locations and facilities across the Province, in reference to the application received on April 19, 2016 and further information provided on or before March 1, 2017.

- 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 Municipal Affairs and Environment under Section 49 of the *Water Resources Act*.
- Failure to comply with the terms and conditions will render this Permit null and void, place the Permit Holder and their agent (s) in violation of the *Water Resources Act* and make the Permit Holder responsible for taking any remedial measure, as may be prescribed by this Department.



MINISTER

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment

File No: 532-02
Permit No: ALT8608-2017

APPENDIX A
Terms and Conditions for Permit

Dredging

1. 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.
2. 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.
3. 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.

General Alterations

4. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
5. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
6. 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*.
7. 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.
8. 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.
9. All vehicles and equipment must be clean and in good repair, free of mud and oil leaks, or other harmful substances that could impair water quality.
10. 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.
11. 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.
12. Any areas adversely affected by any minor dredging or associated work carried under this Permit 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.
13. The bed, banks and floodplains of watercourses, or other vulnerable areas affected by any minor dredging or associated work carried under this Permit, must be adequately protected from erosion by seeding, sodding or placing of rip-rap.
14. All waste materials resulting from any minor dredging or associated work carried under this Permit, must be disposed of at a site approved by the Department of Service NL.
15. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any body of water. Care must be taken to prevent spillage of pollutants into any body of water.
16. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
17. 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.

18. Fill material must be obtained from an approved quarry and must be of good quality, free of fines or other substances including metals, organics, or chemicals that may be harmful to the receiving waters. It must not be taken from beaches or streams, and must not be dredged from any body of water.
19. The Permit Holder must annually submit a written report to the Department including all completed minor dredging and other associated works along with photos showing the sites prior to and after all minor dredging and other associated works.
20. This Permit is effective January 1, 2016 and shall expire on December 31, 2018 or earlier if modified, suspended or cancelled by the Minister. Also, this Permit may be renewed by the Minister for such renewal term as the Minister deems appropriate, on such terms and conditions as the Minister considers appropriate and in the public interest, provided the Permit Holder applies for the renewal at least ninety (90) days before the expiry of this Permit.
21. All work must be carried out within the Permit Holder's legal property boundaries or with the approval of the upland owner. In case of Crown Lands, all work must comply with all other terms and conditions of the Crown Lands grant, lease or license for occupancy.
22. The Permit Holder acknowledges and agrees that this Permit does not grant any interest in land or any exclusive right in or to use or occupy lands.

Special Conditions

23. The Permit Holder must apply for and obtain a separate permit under the Water Resources Act, SNL 2002 cW-4.01, specifically Section 39 <http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm> for any minor dredging or associated works that may take place within any designated Protected Public Water Supply Area servicing any community as indicated in Water Resources Portal available at <https://maps.gov.nl.ca/water/mapbrowser/Default.aspx>.
24. The Permit Holder may be required to apply for and obtain a separate permit under the Water Resources Act, SNL 2002 cW-4.01, specifically Section 48 <http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm> for any minor dredging or associated works that may take place within any designated flood risk area as indicated at <http://www.env.gov.nl.ca/env/waterres/flooding/frm.html>.
25. Any alteration in or near a freshwater body (including wetlands) requires a separate permit under the Water Resources Act, SNL 2002 cW-4.01, specifically Section 48 <http://assembly.nl.ca/Legislation/sr/statutes/w04-01.htm>. The Permit Holder must avoid work activities in wetlands wherever possible.
26. A water quality monitoring program is not required at this time. However, the Department reserves the right to require that the Permit Holder sample, analyze, 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.
27. Select heavy rocks must be placed along the shoreline to provide slope stability and erosion protection. Dredged materials unsuitable for erosion protection must not be placed along the shoreline.
28. The slopes along the perimeter of infilled areas must be no steeper than two horizontal to one vertical (2H:1V).
29. Infilling must not disrupt the established surface drainage pattern of the area.
30. Suitable booms must be deployed around work 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.
31. Creosote treated wood must not be used in the construction of any structures in or within 15 metre of any body of water.
32. Periodic maintenance such as painting, resurfacing, clearing of debris, or minor repairs, must be carried out without causing any physical disruption of any body of water. Care must be taken to prevent spillage of pollutants into any body of water.
33. If a minor dredging or associated work carried out under this Permit does prohibit, restrict or impede public access along the shoreline reservation then the Permit Holder shall restore the shoreline reservation to the satisfaction of the Minister within sixty (60) days of a written notice.
34. For each minor dredging or associated work carried out under this Permit, the Permit Holder must notify this Department via email to waterinvestigations@gov.nl.ca or facsimile at (709)729-0320 in accordance with a reporting protocol as deemed necessary and appropriate in the opinion of the Minister. Also, each minor dredging or associated work carried out under this Permit shall be subject to the payment of applicable fee by the Permit Holder as stated in the application fee schedules approved by the Minister.
35. The acknowledgment of the receipt of this Permit by the Permit Holder constitutes the acceptance of this Permit and its terms and conditions and requirements stated in Appendices A, B and C.

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment

File No: 332-02
Permit No: ALT8600-2017

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 and/or Ministerial orders and guidelines, as determined by this Department, the Minister may, after providing ten (10) day notice to the Permit Holder, 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: Dr. Abdel-Zaher Kamal Abdel-Razek, Ph. D., P.Eng.
Manager, Water Rights and Investigations Section
Water Resources Management Division
Department of Municipal Affairs and Environment
P.O. Box 8700
4th Floor, West Block, Confederation Building
St. John's, NL A1B 4J6
aabdelrazek@gov.nl.ca
- cc: Mr. Carl Hann (Western)
GSC - Corner Brook, Service NL
Sir Richard Squires Building
Mount Bernard Avenue, P.O. Box 2006
Corner Brook, NL A2H 6J8
chann@gov.nl.ca
- cc: Mr. Guy Perry
Director
GSC - Clarenville, Service NL
8 Myers Avenue, Suite 201
Clarenville, NL A5A 1T5
gperry@gov.nl.ca
- cc: Mr. Ken Russell (Labrador)
Manager of Operations, GSC - Happy Valley-Goose Bay, Service NL
Government Service Centre
2 Tenth Street, P.O. Box 3014, Sta. B
Happy Valley-Goose Bay, NL A0P 1E0
krussell@gov.nl.ca
- cc: Mr. Robert Groves, Regional Manager
GSC - Clarenville, Service NL
8 Myers Avenue, Suite 201
Clarenville, NL A5A 1T5
rgroves@gov.nl.ca
- cc: Mr. Robert Locke
Manager of Operations and Environmental Protection, GSC - Mount Pearl, Service NL
P.O. Box 8700
St. John's, NL A1B 4J6
rlocke@gov.nl.ca
- cc: Mr. Wayne Lynch
Regional Director (Central)
Service NL
P.O. Box 2222
Gander, NL A1V 2N9
waynelynch@gov.nl.ca
- cc: Ms. Sharon Williams, Regional Manager
Environmental Health, GSC - Mount Pearl, Service NL
P.O. Box 8700
St. John's, NL A1B 4J6
williams@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: Mr. Mark McNeil
Environmental Services
Department of Public Works and Government Services Canada
Suite 204, 1 Regent Square
Corner Brook, NL A2H 7K6
mark.mcnail@pwgsc-tpsgc.gc.ca
- cc: Mr. Shawn Kean
Environmental Services
Public Works & Government Services Canada
John Cabot Building, 10 Barter's Hill
P.O. Box 4600
St. John's, NL A1C 5T2
shawn.kean@pwgsc.gc.ca
- cc: Ms. Cathy Martin
Public Works and Government Services Canada, ES
10 Barter's Hill
P.O. Box 4600
St. John's, NL A1C 5T2
cathy.martin@pwgsc-tpsgc.gc.ca



Appendix C - Completion Report

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

Date: **MARCH 03, 2017** File No: **532-02**
 Permit No: **ALT8600-2017**

Permit Holder: **Department of Fisheries and Oceans Canada
 Small Craft Harbour Branch
 John Cabot Building, 10 Barter's Hill
 St. John's NL A1C 5X1**

Attention: **Mr. Paul Curran**

Re: **Minor DFO Dredging and Works Projects**

Permission was given for : routine dredging or beach grading of 2000 cubic metres or less of primarily sand, gravel, cobble, and boulder material and other associated works in or near bodies of water in order to provide safe navigation at for the Department of Fisheries and Oceans' small craft harbours at various locations and facilities across the Province, in reference to the application received on April 19, 2016 and further information provided on or before March 1, 2017.

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 Municipal Affairs and Environment 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 Municipal Affairs and Environment
Water Resources Management Division
PO Box 8700
St. John's NL A1B 4J6

August 17, 2018

Public Works and Government Services Canada
C/O Ms. Cathy Martin
Environmental Services
P.O. Box 4800
St. John's, NL. A1C 5T2

Dear Ms. Martin:

**RE: Harbour Development and Dredging (R.049540.054) for Fisheries & Oceans Canada
Small Craft Harbours, Marinal Wharf Reconstruction, Foxtrap, NL.**

With reference to your e-mail of August 16, 2018, regarding the above-noted project, The Government Service Centre (Service NL) would have no objections to the dredged material (~2000m³) being deposited at a waste disposal site provided the following stipulations are met:

1. Sediment must be stock piled on site for a minimum of 24 hours to drain liquid off before being transported in water sealed trucks or containers to prevent leakage.
2. The material may be deposited at an approved waste disposal site with the prior permission of the site owner/operator.
3. All vehicles and heavy equipment must be clean, in good repair and inspected regularly to ensure there are no oil or fuel leaks.
4. In order to ensure that a quick and effective response to a spill event is possible, spill response equipment should be readily available on-site. Response equipment, such as absorbents and open-ended barrels for collection of clean-up debris, should be stored in an accessible location on-site. Personnel working on the project should be knowledgeable about response procedures. The proponent should consider developing a contingency plan specific to the proposed undertaking to enable a quick and effective response to a spill event.
5. Any spill or leak of gasoline or associated product is to be reported immediately to Service NL by calling the Environmental Emergency Telephone line at 772-2083 or 1-800-563-9089.

If you have any questions, please contact the undersigned at 709-729-4342 or at the address below.

Sincerely,



David Niefer, Env. Tech.
Environmental Protection Officer



Fisheries and Oceans Canada Pêches et Océans Canada

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

Your file

Votre référence

AUG 07 2018

Our file

Notre référence
18-HNFL-00372

Paul Curran
Regional Engineer, DFO – Small Craft Harbours
P.O. Box 5667
St. John's, NL A1C 5X1

Subject: Marginal Wharf Reconstruction in Foxtrap, NL – Implementation of Measures to Avoid and Mitigate Serious Harm to Fish and Prohibited Effects on Listed Aquatic Species at Risk

Dear Mr. Curran:

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on June 8, 2018. We understand that you propose to:

- Demolish an existing marginal wharf and slipway;
- Excavate/dredge under new marginal wharf (to -2.55 m LNT) and launchway (to -3.05 m LNT), as well as ~943 m² beyond the existing footprint (to -2.00 m LNT); and
- Build a new marginal wharf, including a northwestern extension (~56 m² beyond current footprint) and southeastern launchway (~104 m² beyond existing footprint).

Our review considered the following information:

- Request for Review received on June 8, 2018;
- Email correspondence with Cathy Martin on June 13, July 10, and July 20, 2018; and
- Full-scale engineer drawings received on June 27, 2018.

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act* unless authorized. Your proposal has also been reviewed to determine whether it is likely to affect 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*, unless authorized.

To avoid and mitigate the potential for serious harm to fish, we recommend implementing the measures listed below:

Canada

- The project should be carried out in a manner that minimizes the release of sediment and/or other project related material into the waters of the Foxtrap Harbour or any other adjacent water body;
- Duration of in-water works should be minimized;
- Machinery should be operated from dry stable locations – e.g. existing shoreline, floating barge;
- To the extent possible, project related activity – e.g., dredging, wharf demolition/construction – should be carried out during low tide and low wind/wave conditions;
- Project related activity should be suspended, and/or additional mitigation measures taken (i.e. deployment of a floating sediment boom/curtain) if wind or tide conditions cause sediment/turbid water to be visible outside the immediate project area;
- Rock material for crib ballast and infill should be clean rock free of fine erodible material;
- Rock material should not be end dumped; rather it should be placed on station using an excavator or similar equipment;
- Dredged or excavated material should be disposed of at an approved site above the high water mark of any waterbody. If necessary, adequate sedimentation and erosion control measures should be deployed around stored dredge material; and
- Shoreline disturbance should be restricted to the immediate work area. Any shoreline areas disturbed by project activities should be stabilized as soon as possible to prevent erosion.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not result in serious harm to fish or prohibited effects on listed aquatic species at risk. As such, an authorization under the *Fisheries Act* or a permit under the *Species at Risk Act* is not required.

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 avoid causing serious harm to fish and avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to <http://www.dfo-mpo.gc.ca/pnw-ppe/violation-infraction/index-eng.html>.

Please notify this office at least 10 days before starting your project. A copy of this letter should 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 respect to this letter, please contact me by phone (709.772.2583), fax (709.772.5562), or email (Kimberley.Keats@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Kimberley Keats
A/Senior Biologist – Coastal, Marine, Oil & Gas Development
Fisheries Protection Program – Regulatory Reviews
Ecosystems Management Branch, NL Region

Cc. Cathy Martin – Public Works and Government Services Canada, St. John's

FILE

MESSAGE



Fri 24/08/2018 12:35 PM

Hann, Joan <joanhann@gov.nl.ca>

FW: Permission for Timber Disposal - Foxtrap, NL

To: Cathy Martin

Attachments: B8G1074VZR-R2018-07-25_11-45-15_R006.pdf, Hann Timber disposal ltr Foxtrap.pdf

Hello Cathy

Based upon results provided above this waste can be disposed of at RHB landfill. Please ensure disposal documents (quantity of waste) are provided to the department.

Regards

Joan Hann
Environmental Scientist
Pollution Prevention Division
Department of Municipal Affairs and Environment
4th Floor, Confederation Building, West Block
P.O. Box 8700
St. John's, NL, Canada A1B 4J6
Email: Joanhann@gov.nl.ca
Phone: 709-729-1771

From: Cathy Martin [<mailto:Cathy.Martin@pwgsc-tpsgc.gc.ca>]
Sent: Friday, August 24, 2018 11:49 AM
To: Hann, Joan
Subject: Permission for Timber Disposal - Foxtrap, NL

Good Morning Joan,

Please see the attached request.

Thanks in advance,
Cathy

Cathy Martin

Appendix D LAB ANALYSIS RESULTS

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Parameter ID		HC8802		
Sampling Date		2018/06/26		
QC Number		D33461		
	UNITS	556	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/kg	ND	0.025	5608881
Toluene	mg/kg	ND	0.025	5608881
Ethylbenzene	mg/kg	ND	0.025	5608881
Total Xylenes	mg/kg	ND	0.050	5608881
C6 - C10 (less BTEX)	mg/kg	ND	2.5	5608881
>C10-C16 Hydrocarbons	mg/kg	ND	10	5613231
>C16-C21 Hydrocarbons	mg/kg	33	10	5613231
>C21-C32 Hydrocarbons	mg/kg	87	15	5613231
Modified TPH (Tier1)	mg/kg	120	15	5605678
Reached Baseline at C32	mg/kg	Yes	N/A	5613231
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5613231
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	109		5613231
n-Detrizocotane - Extractable	%	95		5613231
Isobutylbenzene - Volatile	%	121		5608881
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected N/A = Not Applicable (1) Unidentified compound(s) in fuel / tube range. Possible tube oil fraction.				

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		HCB797	HCB798	HCB799	HCB800	HCB801		
Sampling Date		2018/06/26 10:05	2018/06/26 10:30	2018/06/26 11:00	2018/06/26 11:30	2018/06/26 12:00		
QC Number		D33461	D33461	D33461	D33461	D33461		
	UMITS	SS1	SS2	SS3	SS4	SS5	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/kg	ND	ND	ND	ND	ND	0.025	5608881
Toluene	mg/kg	ND	ND	ND	ND	ND	0.025	5608881
Ethylbenzene	mg/kg	ND	ND	ND	ND	ND	0.025	5608881
Total Xylenes	mg/kg	ND	ND	ND	ND	ND	0.050	5608881
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	ND	ND	2.5	5608881
>C10-C16 Hydrocarbons	mg/kg	ND	ND	ND	ND	ND	10	5613231
>C16-C21 Hydrocarbons	mg/kg	21	43	23	66	28	10	5613231
>C21-<C32 Hydrocarbons	mg/kg	68	97	95	170	62	15	5613231
Modified TPH (Tier 1)	mg/kg	89	140	120	230	90	15	5605678
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	Yes	Yes	N/A	5613231
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	COMMENT (1)	COMMENT (3)	COMMENT (3)	N/A	5613231
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	105	108	106	102	105		5613231
n-Dodecane - Extractable	%	93 (4)	95	97	85	94		5613231
Isobutylbenzene - Volatile	%	95	95	102	116	103		5608881
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected N/A = Not Applicable (1) Possible lube oil fraction. (2) One product in fuel / lube range. Possible lube oil fraction. (3) Unidentified compound(s) in fuel / lube range. Possible lube oil fraction. (4) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.								

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID	HCB800			HCB801			HCB802			HCB803		
Sampling Date	2018/06/26 11:30			2018/06/26 12:00			2018/06/26 12:30			2018/06/26 14:00		
QC Number	D33461			D33461			D33461			D33461		
	UNITS	SS4	SS5	SS6	RDL	QC Batch	TIMBER SAMPLE 1	RDL	QC Batch			
Leachable D5-Nitrobenzene	%						71				5626136	
Leachable D5-Phenol	%						25				5626136	
D10-Anthracene	%	95	96	94		5615710						
D14-Terphenyl	%	94	90	85		5615710						
D8-Acenaphthylene	%	101	99	90		5615710						

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID	HCB804			
Sampling Date	2018/06/26 14:30			
QC Number	D33461			
	UNITS	TIMBER SAMPLE 2	RDL	QC Batch
Semi-volatile Organics				
Leachable Benzo(a)pyrene	ug/L	6.8	0.80	5626136
Leachable m/p-Cresol	ug/L	1300	20	5626136
Leachable o-Cresol	ug/L	710	20	5626136
Leachable Cresol Total	ug/L	2000	20	5626136
Leachable Pentachlorophenol	ug/L	ND	20	5626136
Surrogate Recovery (%)				
Leachable 2,4,6-Tribromophenol	%	89		5626136
Leachable 2-Fluorobiphenyl	%	75		5626136
Leachable 2-Fluorophenol	%	55		5626136
Leachable D14-Terphenyl (F5)	%	91		5626136
Leachable D5-Nitrobenzene	%	70		5626136
Leachable D5-Phenol	%	26		5626136

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

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		HCB00	HCB01	HCB02			HCB03		
Sampling Date		2018/06/26 11:30	2018/06/26 12:00	2018/06/26 12:20			2018/06/26 14:00		
CCC Number		D33461	D33461	D33461			D33461		
	UNITS	SS4	SS5	SS6	RDL	QC Batch	TIMBER SAMPLE 1	RDL	QC Batch
Semi-volatile Organics									
Leachable Benzo(a)pyrene	ug/L						1.5	0.80	5626136
Leachable m/p-Cresol	ug/L						1600	20	5626136
Leachable o-Cresol	ug/L						900	20	5626136
Leachable Cresol Total	ug/L						2500	20	5626136
Leachable Pentachlorophenol	ug/L						ND	20	5626136
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	ND	ND	ND	0.0050	5615710			
2-Methylnaphthalene	mg/kg	0.021	ND	ND	0.0050	5615710			
Acenaphthene	mg/kg	0.017	0.0098	0.010	0.0050	5615710			
Acenaphthylene	mg/kg	0.050	0.024	0.035	0.0050	5615710			
Anthracene	mg/kg	0.18	0.12	0.16	0.0050	5615710			
Benzo(a)anthracene	mg/kg	0.75	0.33	0.52	0.0050	5615710			
Benzo(a)pyrene	mg/kg	0.58	0.26	0.40	0.0050	5615710			
Benzo(b)fluoranthene	mg/kg	0.91	0.42	0.62	0.0050	5615710			
Benzo(k)fluoranthene	mg/kg	1.3	0.59	0.87	0.010	5605726			
Benzo(g,h,i)perylene	mg/kg	0.29	0.14	0.19	0.0050	5615710			
Benzo(j)fluoranthene	mg/kg	0.37	0.17	0.25	0.0050	5615710			
Benzo(k)fluoranthene	mg/kg	0.46	0.19	0.29	0.0050	5615710			
Chrysene	mg/kg	0.67	0.38	0.48	0.0050	5615710			
Dibenz(a,h)anthracene	mg/kg	0.062	0.030	0.042	0.0050	5615710			
Fluoranthene	mg/kg	0.55	0.34	0.37	0.0050	5615710			
Fluorene	mg/kg	0.061	0.038	0.038	0.0050	5615710			
Indeno[1,2,3-cd]pyrene	mg/kg	0.25	0.12	0.17	0.0050	5615710			
Naphthalene	mg/kg	0.015	0.0078	ND	0.0050	5615710			
Perylene	mg/kg	0.23	0.093	0.14	0.0050	5615710			
Phenanthrene	mg/kg	0.21	0.15	0.14	0.0050	5615710			
Pyrene	mg/kg	0.39	0.23	0.30	0.0050	5615710			
Surrogate Recovery (%)									
Leachable 2,4,6-Tribromophenol	%						85		5626136
Leachable 2-Fluorobiphenyl	%						73		5626136
Leachable 2-Fluorophenol	%						58		5626136
Leachable D14-Terphenyl (F5)	%						93		5626136
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not detected									

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Assessment ID	HCB797				HCB798				HCB799			
	UNITS	SS1	RDL	QC Batch	SS1 Lab-Dup	RDL	QC Batch	SS2	SS3	RDL	QC Batch	
Sampling Date	2018/06/26 10:05				2018/06/26 10:05				2018/06/26 11:00			
COC Number	D33461				D33461				D33461			
Polyaromatic Hydrocarbons												
1-Methylnaphthalene	mg/kg	ND	0.0050	5615710	ND	0.0050	5615710	ND	0.014	0.0050	5615710	
2-Methylnaphthalene	mg/kg	ND	0.0050	5615710	ND	0.0050	5615710	ND	0.039	0.0050	5615710	
Acenaphthene	mg/kg	ND	0.0050	5615710	ND	0.0050	5615710	ND	0.011	0.0050	5615710	
Acenaphthylene	mg/kg	0.020	0.0050	5615710	0.017	0.0050	5615710	0.048	0.018	0.0050	5615710	
Anthracene	mg/kg	0.071	0.0050	5615710	0.059	0.0050	5615710	0.15	0.044	0.0050	5615710	
Benzo(a)anthracene	mg/kg	0.20	0.0050	5615710	0.16	0.0050	5615710	0.37	0.15	0.0050	5615710	
Benzo(a)pyrene	mg/kg	0.15	0.0050	5615710	0.13	0.0050	5615710	0.31	0.11	0.0050	5615710	
Benzo(b)fluoranthene	mg/kg	0.25	0.0050	5615710	0.22	0.0050	5615710	0.56	0.17	0.0050	5615710	
Benzo(b)fluoranthene	mg/kg	0.35	0.010	5605726				0.79	0.24	0.010	5605726	
Benzo(g,h)perylene	mg/kg	0.088	0.0050	5615710	0.077	0.0050	5615710	0.19	0.059	0.0050	5615710	
Benzo(j)fluoranthene	mg/kg	0.10	0.0050	5615710	0.091	0.0050	5615710	0.23	0.075	0.0050	5615710	
Benzo(k)fluoranthene	mg/kg	0.11	0.0050	5615710	0.098	0.0050	5615710	0.28	0.078	0.0050	5615710	
Chrysene	mg/kg	0.20	0.0050	5615710	0.19	0.0050	5615710	0.43	0.13	0.0050	5615710	
Dibenz(a,h)anthracene	mg/kg	0.018	0.0050	5615710	0.016	0.0050	5615710	0.043	0.011	0.0050	5615710	
Fluoranthene	mg/kg	0.20	0.0050	5615710	0.18	0.0050	5615710	0.52	0.25	0.0050	5615710	
Fluorene	mg/kg	0.016	0.0050	5615710	0.012	0.0050	5615710	0.020	0.029	0.0050	5615710	
Indeno(1,2,3-cd)pyrene	mg/kg	0.074	0.0050	5615710	0.066	0.0050	5615710	0.17	0.048	0.0050	5615710	
Naphthalene	mg/kg	ND	0.0050	5615710	ND	0.0050	5615710	ND	0.015	0.0050	5615710	
Perylene	mg/kg	0.051	0.0050	5615710	0.043	0.0050	5615710	0.10	0.069	0.0050	5615710	
Phenanthrene	mg/kg	0.068	0.0050	5615710	0.046	0.0050	5615710	0.085	0.078	0.0050	5615710	
Pyrene	mg/kg	0.12	0.0050	5615710	0.11	0.0050	5615710	0.27	0.25	0.0050	5615710	
Surrogate Recovery (%)												
D10-Anthracene	%	94		5615710	98		5615710	97	90		5615710	
D14-Terphenyl	%	93		5615710	91		5615710	94	87		5615710	
D8-Acenaphthylene	%	97		5615710	100		5615710	99	99		5615710	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected												

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID	HC8801			HC8802			
Sampling Date	2018/06/26 12:00			2018/06/26 12:30			
COC Number	D93461			D93461			
	UNITS	SS5 Lab-Dup	RDL	QC Batch	SS6	RDL	QC Batch
Inorganics							
Chromium (VI)	ug/g			ND	0.2	5613216	
Metals							
Acid Extractable Aluminum (Al)	mg/kg	7100	10	5608861	8400	10	5608861
Acid Extractable Antimony (Sb)	mg/kg	ND	2.0	5608861	ND	2.0	5608861
Acid Extractable Arsenic (As)	mg/kg	12	2.0	5608861	19	2.0	5608861
Acid Extractable Barium (Ba)	mg/kg	45	5.0	5608861	72	5.0	5608861
Acid Extractable Beryllium (Be)	mg/kg	ND	2.0	5608861	ND	2.0	5608861
Acid Extractable Bismuth (Bi)	mg/kg	ND	2.0	5608861	ND	2.0	5608861
Acid Extractable Boron (B)	mg/kg	ND	50	5608861	ND	50	5608861
Acid Extractable Cadmium (Cd)	mg/kg	ND	0.30	5608861	ND	0.30	5608861
Acid Extractable Chromium (Cr)	mg/kg	15	2.0	5608861	19	2.0	5608861
Acid Extractable Cobalt (Co)	mg/kg	6.5	1.0	5608861	8.4	1.0	5608861
Acid Extractable Copper (Cu)	mg/kg	35	2.0	5608861	55	2.0	5608861
Acid Extractable Iron (Fe)	mg/kg	21000	50	5608861	26000	50	5608861
Acid Extractable Lead (Pb)	mg/kg	12	0.50	5608861	19	0.50	5608861
Acid Extractable Lithium (Li)	mg/kg	16	2.0	5608861	19	2.0	5608861
Acid Extractable Manganese (Mn)	mg/kg	410	2.0	5608861	400	2.0	5608861
Acid Extractable Mercury (Hg)	mg/kg	ND	0.10	5608861	ND	0.10	5608861
Acid Extractable Molybdenum (Mo)	mg/kg	3.1	2.0	5608861	4.6	2.0	5608861
Acid Extractable Nickel (Ni)	mg/kg	14	2.0	5608861	17	2.0	5608861
Acid Extractable Rubidium (Rb)	mg/kg	3.3	2.0	5608861	4.9	2.0	5608861
Acid Extractable Selenium (Se)	mg/kg	ND	1.0	5608861	ND	1.0	5608861
Acid Extractable Silver (Ag)	mg/kg	ND	0.50	5608861	ND	0.50	5608861
Acid Extractable Strontium (Sr)	mg/kg	17	5.0	5608861	36	5.0	5608861
Acid Extractable Thallium (Tl)	mg/kg	ND	0.10	5608861	0.11	0.10	5608861
Acid Extractable Tin (Sn)	mg/kg	ND	2.0	5608861	ND	2.0	5608861
Acid Extractable Uranium (U)	mg/kg	1.1	0.10	5608861	1.6	0.10	5608861
Acid Extractable Vanadium (V)	mg/kg	25	2.0	5608861	33	2.0	5608861
Acid Extractable Zinc (Zn)	mg/kg	72	5.0	5608861	100	5.0	5608861
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected							

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maximum ID		HC8797	HC8798	HC8799	HC8800	HC8801		
Sampling Date		2018/06/26 10:05	2018/06/26 10:30	2018/06/26 11:00	2018/06/26 11:30	2018/06/26 12:00		
QOC Number		D33461	D33461	D33461	D33461	D33461		
	UNITS	SS1	SS2	SS3	SS4	SS5	RDL	QC Batch
Inorganics								
Chromium (VI)	ug/g	ND	ND	ND	ND	ND	0.2	5613216
Metals								
Acid Extractable Aluminum (Al)	mg/kg	8200	9000	12000	11000	7200	10	5608861
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	5608861
Acid Extractable Arsenic (As)	mg/kg	28	22	23	26	11	2.0	5608861
Acid Extractable Barium (Ba)	mg/kg	39	40	140	93	52	5.0	5608861
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	5608861
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	5608861
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	5608861
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	0.44	ND	0.30	5608861
Acid Extractable Chromium (Cr)	mg/kg	39	27	23	28	14	2.0	5608861
Acid Extractable Cobalt (Co)	mg/kg	7.3	8.5	13	10	6.6	1.0	5608861
Acid Extractable Copper (Cu)	mg/kg	59	58	57	85	35	2.0	5608861
Acid Extractable Iron (Fe)	mg/kg	25000	29000	37000	35000	21000	50	5608861
Acid Extractable Lead (Pb)	mg/kg	16	15	36	30	12	0.50	5608861
Acid Extractable Lithium (Li)	mg/kg	20	25	28	28	16	2.0	5608861
Acid Extractable Manganese (Mn)	mg/kg	410	530	1000	600	420	2.0	5608861
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	0.10	5608861
Acid Extractable Molybdenum (Mo)	mg/kg	3.2	3.1	6.7	8.4	3.1	2.0	5608861
Acid Extractable Nickel (Ni)	mg/kg	16	17	26	23	14	2.0	5608861
Acid Extractable Rubidium (Rb)	mg/kg	4.4	4.4	7.5	7.4	3.7	2.0	5608861
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	1.0	ND	1.0	5608861
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	5608861
Acid Extractable Strontium (Sr)	mg/kg	21	22	35	58	16	5.0	5608861
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	0.15	0.19	ND	0.10	5608861
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	2.1	ND	2.0	5608861
Acid Extractable Uranium (U)	mg/kg	1.1	1.2	2.0	2.3	1.2	0.10	5608861
Acid Extractable Vanadium (V)	mg/kg	29	30	34	52	25	2.0	5608861
Acid Extractable Zinc (Zn)	mg/kg	100	120	98	170	73	5.0	5608861
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
ND = Not detected								

ELEMENTS BY ICP/MS (SEDIMENT)

Maxxam ID	HCB800				HCB801				HCB802			
	UNITS	SS4	RDL	QC Batch	SS5	SS5 Lab-Dup	RDL	QC Batch	SS6	RDL	QC Batch	
Sampling Date	2018/06/26 11:30				2018/06/26 12:00				2018/06/26 12:20			
COC Number	D33461				D33461				D33461			
Metals												
Soluble (Hot Water) Boron (B)	mg/kg	25	3.0	5610676	9.8	9.7	3.0	5610676	14	3.0	5610676	
Leachable Aluminum (Al)	ug/L	1000	100	5639016					780	100	5639016	
Leachable Antimony (Sb)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Arsenic (As)	ug/L	22	20	5639016					39	20	5639016	
Leachable Barium (Ba)	ug/L	98	50	5639016					110	50	5639016	
Leachable Beryllium (Be)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Boron (B)	ug/L	640	500	5639016					550	500	5639016	
Leachable Cadmium (Cd)	ug/L	ND	3.0	5639016					ND	3.0	5639016	
Leachable Calcium (Ca)	ug/L	34000	1000	5639016					32000	1000	5639016	
Leachable Chromium (Cr)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Cobalt (Co)	ug/L	ND	10	5639016					ND	10	5639016	
Leachable Copper (Cu)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Iron (Fe)	ug/L	25000	500	5639016					46000	500	5639016	
Leachable Lead (Pb)	ug/L	11	5.0	5639016					8.4	5.0	5639016	
Leachable Lithium (Li)	ug/L	48	20	5639016					45	20	5639016	
Leachable Magnesium (Mg)	ug/L	52000	1000	5639016					40000	1000	5639016	
Leachable Manganese (Mn)	ug/L	1300	20	5639016					1200	20	5639016	
Leachable Molybdenum (Mo)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Nickel (Ni)	ug/L	ND	20	5639016					22	20	5639016	
Leachable Potassium (K)	ug/L	20000	1000	5639016					16000	1000	5639016	
Leachable Selenium (Se)	ug/L	ND	10	5639016					ND	10	5639016	
Leachable Silver (Ag)	ug/L	ND	5.0	5639016					ND	5.0	5639016	
Leachable Strontium (Sr)	ug/L	520	50	5639016					470	50	5639016	
Leachable Thallium (Tl)	ug/L	ND	1.0	5639016					ND	1.0	5639016	
Leachable Tin (Sn)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Uranium (U)	ug/L	3.3	1.0	5639016					2.6	1.0	5639016	
Leachable Vanadium (V)	ug/L	ND	20	5639016					ND	20	5639016	
Leachable Zinc (Zn)	ug/L	930	50	5639016					480	50	5639016	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected												

ELEMENTS BY ICP/MS (SEDIMENT)

Maxxam ID	HCB797		HCB798		HCB798		HCB799				
	2018/06/26 10:05		2018/06/26 10:30		2018/06/26 10:30		2018/06/26 11:00				
Sampling Date	D33461		D33461		D33461		D33461				
QC Number	UNITS	SS1	SS2	RDL	QC Batch	SS2 Lab-Dup	RDL	QC Batch			
Metals											
Soluble (Hot Water) Boron (B)	mg/kg	9.6	10	3.0	5610676			12	3.0	5610676	
Leachable Aluminum (Al)	ug/L	1100	980	100	5639016	1100	100	5639016	1100	100	5639016
Leachable Antimony (Sb)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Arsenic (As)	ug/L	30	26	20	5639016	26	20	5639016	21	20	5639016
Leachable Barium (Ba)	ug/L	100	130	50	5639016	140	50	5639016	340	50	5639016
Leachable Beryllium (Be)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Boron (B)	ug/L	ND	ND	500	5639016	ND	500	5639016	ND	500	5639016
Leachable Cadmium (Cd)	ug/L	ND	ND	3.0	5639016	ND	3.0	5639016	ND	3.0	5639016
Leachable Calcium (Ca)	ug/L	45000	79000	1000	5639016	64000	1000	5639016	30000	1000	5639016
Leachable Chromium (Cr)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Cobalt (Co)	ug/L	ND	13	10	5639016	15	10	5639016	18	10	5639016
Leachable Copper (Cu)	ug/L	67	93	20	5639016	100	20	5639016	ND	20	5639016
Leachable Iron (Fe)	ug/L	3900	2100	500	5639016	2100	500	5639016	28000	500	5639016
Leachable Lead (Pb)	ug/L	9.1	7.6	5.0	5639016	8.4	5.0	5639016	320	5.0	5639016
Leachable Lithium (Li)	ug/L	41	36	20	5639016	39	20	5639016	49	20	5639016
Leachable Magnesium (Mg)	ug/L	28000	28000	1000	5639016	28000	1000	5639016	34000	1000	5639016
Leachable Manganese (Mn)	ug/L	950	2200	20	5639016	2300	20	5639016	5300	20	5639016
Leachable Molybdenum (Mo)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Nickel (Ni)	ug/L	ND	ND	20	5639016	23	20	5639016	27	20	5639016
Leachable Potassium (K)	ug/L	14000	13000	1000	5639016	13000	1000	5639016	17000	1000	5639016
Leachable Selenium (Se)	ug/L	ND	ND	10	5639016	ND	10	5639016	ND	10	5639016
Leachable Silver (Ag)	ug/L	ND	ND	5.0	5639016	ND	5.0	5639016	ND	5.0	5639016
Leachable Strontium (Sr)	ug/L	410	520	50	5639016	520	50	5639016	470	50	5639016
Leachable Thallium (Tl)	ug/L	ND	ND	1.0	5639016	ND	1.0	5639016	ND	1.0	5639016
Leachable Tin (Sn)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Uranium (U)	ug/L	3.5	2.9	1.0	5639016	2.8	1.0	5639016	4.4	1.0	5639016
Leachable Vanadium (V)	ug/L	ND	ND	20	5639016	ND	20	5639016	ND	20	5639016
Leachable Zinc (Zn)	ug/L	660	1500	50	5639016	1400	50	5639016	530	50	5639016

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

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		HC8803	HC8804		
Sampling Date		2018/06/26 14:00	2018/06/26 14:30		
QC Number		D33461	D33461		
	UNITS	TIMBER SAMPLE 1	TIMBER SAMPLE 2	RDL	QC Batch
Inorganics					
Final pH	pH	4.80	4.81		5621566
Initial pH	pH	5.69	5.72		5621566
TCLP - % Solids	%	100	100	0.2	5621561
TCLP Extraction Fluid	N/A	FLUID 1	FLUID 1		5621565
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID	HC8797				HC8797				HC8798				HC8798			
	Sampling Date		2018/06/26 10:05		2018/06/26 10:05		2018/06/26 10:30		2018/06/26 10:30		2018/06/26 10:30		2018/06/26 10:30			
COC Number	D33461				D33461				D33461				D33461			
	UNITS	SS1	RDL	QC Batch	SS1	RDL	QC Batch	SS2	RDL	QC Batch	SS2	RDL	QC Batch	SS2	QC Batch	
Inorganics																
Moisture	%	28	1.0	5605508				31	1.0	5605508						
Sample Weight (as received)	g	100	N/A	5637392				100	N/A	5637392	100	5637392				
Total Cyanide (CN)	mg/kg	ND	0.50	5624348	ND	0.50	5624348	ND	0.50	5624348						
Initial pH	N/A	5.0		5637391				4.9		5637391	4.9	5637391				
WAD Cyanide (Free)	mg/kg	ND	0.50	5624347	ND	0.50	5624347	ND	0.50	5624347						
Final pH	N/A	5.0		5637391				5.0		5637391	5.0	5637391				
Physical Testing																
Moisture-Subcontracted	%w/w	67	0.50	5624314				50	0.50	5624314						
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable ND = Not detected																

Maxxam ID	HC8799				HC8800				HC8801				HC8802			
	Sampling Date		2018/06/26 11:00		2018/06/26 11:30		2018/06/26 12:00		2018/06/26 12:20		2018/06/26 12:20		2018/06/26 12:20			
COC Number	D33461				D33461				D33461				D33461			
	UNITS	SS3	SS4	RDL	QC Batch	SS5	RDL	QC Batch	SS6	RDL	QC Batch	SS6	RDL	QC Batch		
Inorganics																
Moisture	%	39	67	1.0	5605508	33	1.0	5605508	44	1.0	5605508					
Sample Weight (as received)	g	100	71	N/A	5637392				100	N/A	5637392					
Total Cyanide (CN)	mg/kg	ND	ND	0.50	5624348	ND	0.50	5624348	ND	0.50	5624348					
Initial pH	N/A	4.9	5.0		5637391				4.9		5637391					
WAD Cyanide (Free)	mg/kg	ND	ND	0.50	5624347	ND	0.50	5624347	ND	0.50	5624347					
Final pH	N/A	5.0	5.0		5637391				5.0		5637391					
Physical Testing																
Moisture-Subcontracted	%w/w	47	49	0.50	5624314	30	0.50	5624314	41	0.50	5624314					
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable ND = Not detected																

Your P.O. #: 700413660
Your Project #: RD49540.054
Site Location: Foxtrap, NL
Your C.O.C. #: B33461

Attention: Cathy Martin

Public Works & Government Services Canada
PO Box 4600
10 Barter's Hill
St. John's, NL
CANADA A1C 5T2

Report Date: 2018/07/25
Report #: RS316570
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: 88G1024

Received: 2018/06/28, 09:20

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.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam 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 Maxxam, unless otherwise agreed in writing.

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.

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

Reference Method suffix "RV" 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.

[1] This test was performed by Maxxam Analytics Mississauga

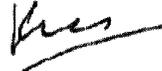
[2] This test was performed by Bedford To Montreal Office

[3] Soils are reported on a dry weight basis unless otherwise specified.

[4] Offsite analysis requires that subcontracted moisture be reported.

[5] No lab extraction date is given for CE-C30/STEX and VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.

Encryption Key



Maryse Comeau
Project Manager, Assiniboia
21 Jun 2018 11:50:53

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

Maryse Comeau, Project Manager

Email: M.Comeau@maxxam.ca

Phone: (902) 420-0203

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 3.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total Cover Pages : 2
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