

September 10, 2025

**Deneen Cull**  
**Newfoundland and Labrador Hydro**  
[Deneencull@nlh.nl.ca](mailto:Deneencull@nlh.nl.ca)

**Re: Initial Water Management Plan**  
**Avalon Combustion Turbine – Initial Construction**

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Attached is the Initial Water Management Plan prepared for the Avalon Combustion Turbine – Initial Construction Project.

We trust this to be satisfactory at this time. Please contact us to address any questions you may have.

Thank you,



Nicole Thomas, B.Sc., EP  
Manager, Associate  
Environmental Assessment & Approvals  
[nthomas@strum.com](mailto:nthomas@strum.com)

## **RECORD OF AMENDMENTS**

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Revision	Date	Author	Amendment(s)	Approved By

## TABLE OF CONTENTS

	<i>Page</i>
<b>1.0 PROJECT DESCRIPTION .....</b>	<b>1</b>
1.1 Project Overview .....	1
1.2 Purpose & Regulatory Context.....	1
1.3 Description of Site Activities .....	2
1.4 Timeline of Clearing Activities .....	2
<b>2.0 EROSION &amp; SEDIMENTATION RISK ASSESSMENT .....</b>	<b>2</b>
2.1 Site Features .....	2
2.1.1 Waterbodies .....	2
<b>3.0 EROSION &amp; SEDIMENT CONSIDERATIONS .....</b>	<b>2</b>
3.1 Best Management Practices .....	2
3.2 Clearing and Grubbing .....	3
3.3 Exposed Slopes.....	4
3.4 General Earthworks & Stockpile Areas .....	4
3.5 Access Trail & Hardstand Areas .....	5
3.6 Waterbodies & Wetlands .....	5
<b>4.0 EROSION &amp; SEDIMENT CONTROLS .....</b>	<b>6</b>
4.1 Temporary Cover.....	6
4.2 Silt Fences .....	7
4.3 Straw/Hay Bales .....	7
4.4 Temporary Check Dam .....	8
<b>5.0 EROSION &amp; SEDIMENT CONTROL MONITORING .....</b>	<b>9</b>
5.1 Inspection Requirements.....	9
5.2 Maintenance Requirements .....	10
<b>6.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS.....</b>	<b>11</b>
<b>7.0 REFERENCES.....</b>	<b>12</b>

## LIST OF FIGURES

Figure 4.1: Silt Fence Detail .....	7
Figure 4.2: Example of a check Dam (Sediment Trap) Design .....	8

## LIST OF APPENDICES

Appendix A_Drawing
Appendix B_Alteration to Waterbody Permit
Appendix C_Incident Report Form
Appendix D_Inspection & Monitoring Compliance Checklist, Action Log

## **1.0 PROJECT DESCRIPTION**

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### **1.1 Project Overview**

Newfoundland and Labrador Hydro (NL Hydro) is the primary supplier of electricity in Newfoundland and Labrador and is planning infrastructure upgrades with the installation of an additional combustion turbine, the Avalon Combustion Turbine, in Holyrood, NL. The current work scope encompasses vegetation clearing, developing a new access trail, earthworks and relocation of power lines (the “Project”). The Project is being undertaken to support future construction work associated with the installation of the new combustion turbine.. The Project is to be located within the NL Hydro property at 47.446373, -53.093296 in Holyrood, NL (the “Site”) within a confirmed area (the “Project Footprint”) (Drawing 1, Appendix A). A 30 m buffer around the Project Footprint is shown to illustrate areas where the Project could interact with nearby water features (Drawing 1, Appendix A).

NL Hydro submitted a request for review to the Department of Fisheries and Oceans Canada (DFO) for work near water to support the Project on June 20, 2025. The Project received a response from DFO with stipulated mitigation measures on July 9, 2025. The DFO response requires NL Hydro to develop and implement an Erosion and Sedimentation Control (ESC) Plan for all Project phases. NL Hydro also received a permit to alter a body of water (ALT14516-2025, Appendix B) from Water Resources Management Division with NL Department of Environment and Climate Change (NLECC) on August 26, 2025 with specific conditions including the requirement of sediment and erosion control measures to be installed prior to start of work.

NL Hydro retained Strum Consulting (Strum) to develop an initial Water Management Plan (WMP) (the “Plan”) for the early site preparation work (the “Project”), which outlines the main components in an ESC Plan (ESCP). The initial WMP is intended to cover only those aspects of an ESC Plan for the Project, as discussed with NL Hydro.

The Plan reflects the recommendations by DFO and Water Resources Management Division

### **1.2 Purpose & Regulatory Context**

The Plan aims to manage and control sediment associated with the Project and was developed in compliance with the following procedures and regulations:

- *Canadian Environmental Protection Act*, S.C. 1999, c.33.
- *Fisheries Act*, R.S.C., 1985, c.F-14.
- *Environmental Protection Act*, S.N.L. 2002 c. E-14.2.
  - *Water Resources Management Plan approval prior to construction as a condition of Environmental Assessment (EA) release (EA2350, NLECC, n.d.)*
- *Water Resources Act*, S.N.L. 2002 c. W-4.01.
  - Best Management Practices for the Protection of Freshwater Fish Habitat in Newfoundland and Labrador (DFO, 2022).
  - Guidelines to Prepare Water Management Plan (NLECC, n.d.)

### **1.3 Description of Site Activities**

The Plan outlines clearing, grubbing, earthwork activities, and power line relocation (the “Activities”) as required by the Project. Activities will be undertaken using mobile equipment, including bucket trucks, excavators, and chainsaws.

The Plan is designed to accommodate the work required for the Project,. Prior to construction in 2026 ,the Plan will be reviewed and updated accordingly with the appropriate control measures.

### **1.4 Timeline of Clearing Activities**

This Plan applies to the Activities proposed for the Project, which will occur during the Fall of 2025.

## **2.0 EROSION & SEDIMENTATION RISK ASSESSMENT**

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An initial risk assessment for erosion and sedimentation potential within the Project Footprint was completed as part of this Plan’s development. The erosion risk assessment findings were used to identify potential areas of high risk for erosion and sources of sedimentation. To complete the assessment, a Site mapping exercise was carried out through a high-level desktop review of available resources.

### **2.1 Site Features**

The following features were identified as part of the mapping exercise:

- Existing land use and vegetation.
- Location of waterbodies, including lakes, ponds, rivers, streams, and wetlands.

Consideration of these features contributed to this Plan’s development for the Activities.

#### **2.1.1 Waterbodies**

A review of the CANVEC Portal and the Newfoundland Forest Resource Inventory identified several named and unnamed waterbodies and wetlands within and near the Project Footprint that interact with the Project Footprint and buffer (Drawing 1, Appendix A). (Canada, N.R. nd; NLFFA, 2023).. Quarry Brook and a series of wetlands are located approximately 15-100 meters (m) east of the Project Footprint at the closest and furthest point of the Project Footprint boundary. The southern tip of Indian Pond is approximately 200 m from the edge of the northern boundary of the Project Footprint but the connecting waterbody between Quarry Brook and Indian Pond is within 15 m of the planned Activities. As well, two wetlands (approximately 100 m wide) are located in the southern half of the Project Footprint but not found on the CANVEC 1:50,000 topographic map.

## **3.0 EROSION & SEDIMENT CONSIDERATIONS**

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### **3.1 Best Management Practices**

To facilitate the maintenance and inspection of installed controls, it is recommended that an ESC site map be developed and maintained by the Project’s Inspectors/Monitors. This map will allow for easy inspection of pre- and post-weather events and ensure that no ESC areas are overlooked or neglected if the Project expands. The following best management practices are recommended for

the Project:

- Assess each work area prior to performing any Activities. ESCs will be installed prior to or in tandem with Activities to minimize erosion and sediment loss.
- Buffer natural waterbodies by 15 m where feasible and follow advice as directed by DFO. NL Hydro does have an alteration to waterbody permit for work within 15 m at two locations within the Project. Suspend Activities if forecasting suggests any of the following rainfall amounts are likely to occur:
  - >10 mm/hr.
  - ≥25 mm in 24 hours.
- Regularly observe the waterbody(ies) for signs of sediment during all phases of the Project and take corrective action when and where required.
- Operate machinery on land in stable areas.
- Use biodegradable and clean materials for ESC whenever possible.
- Construct roads, access points, and approaches perpendicular to the waterbody(ies) if a new access point is required to reach the waterbody(ies).
- Limit disturbance of fish habitat features (e.g., aquatic plants, rocks, woody material) to the areas required within the Project Footprint.
- Restore the bed and banks, gradient, and contour affected by the Project.
- Limit vegetation removal, pruning, and grubbing to the areas required.
- Limit impacts on riparian vegetation to areas approved for clearing.

Prior to suspending the Activities, an inspection of all installed ESCs is recommended to ensure their functionality ahead of any significant weather/storm events (as described above).

### **3.2 Clearing and Grubbing**

Clearing and grubbing activities can expose soil, which can erode and be transported during precipitation events, potentially resulting in terrain damage, soil degradation, and sedimentation of nearby environments. The following mitigation and ESC strategies should be applied during clearing and grubbing activities:

Mitigation Measures:

- Keep clearing and grubbing activities to the minimum footprint necessary and limit the clearing and grubbing required through planning and maximizing the use of existing cleared/developed areas.
- Equip clearing and grubbing equipment with tracks whenever practical to minimize surface vegetation and root mat disturbance.
- Mark right-of-way boundaries prior to the commencement of clearing and grubbing operations, particularly for no-grub zones.
- Fell trees away from all waterbodies. Remove leaners, pile slash, and debris above the high-water mark so that this material cannot enter watercourses during peak flow periods.
- Inspect cleared/grubbed areas for soil exposure and evidence of potential soil erosion and sedimentation as work is completed.
- Install and regularly maintain all active ESCs as necessary.

ESCs:

- Prevent erosion of exposed soil by covering it with hay, mulch, or chipped vegetation (as practical) as activities proceed.
- Schedule work (as practical) to avoid wet and rainy periods, which may result in high precipitation and/or increase the likelihood of erosion or sedimentation issues.
- Divert runoff from upslope areas around and away from the Project Footprint.

### **3.3 Exposed Slopes**

Steep, exposed slopes can result from clearing, excavation, and stockpiling. Slopes are vulnerable to erosion and may result in gullies, which concentrate runoff and increase erosion potential. Removing vegetation may expose naturally occurring slopes within the Project Footprint. Mitigation and control measures for exposed slopes include the following activities:

Mitigation Measures:

- Minimize the amount of clearing and grubbing required in known sloped topographic areas by planning and using existing cleared/developed areas whenever practical.
- Inspect cleared/grubbed areas for soil exposure and evidence of potential soil erosion and sedimentation as work is completed.
- Install and regularly maintain all active ESCs as necessary.

ESCs:

- Prevent erosion of exposed slopes resulting from the Activities by covering them with hay, mulch, or chipped vegetation as the Activities proceed.
- Intercept runoff from areas upstream of exposed slopes and divert around the slope.
  - This can be accomplished by installing hay bale barriers with silt fences (or other ESC) to direct runoff away from exposed slope surfaces and towards a vegetated runoff area.
- Install silt fences at the base of an exposed slope to slow runoff and collect accumulated sediments in overland flow.
- Construct slope drains as open channels lined with geotextile, riprap, or pipes (where required); place check dams across open channel drains to dissipate energy and protect/stabilize the slope drain lining.
  - For further details on check dam design and controls, refer to Section 4.4.

### **3.4 General Earthworks & Stockpile Areas**

Earthworks activities (such as grading, excavation, trenching, and backfilling) and material stockpiling cause ground disturbance and increase the risk of sediment-laden runoff during precipitation events if not properly stabilized or maintained. Prior to construction, the Plan will be reviewed and updated accordingly with the appropriate control measures.

Mitigation Measures:

- Constraint the area of disturbance to the Project Footprint.

- Consider ceasing work after a heavy rainfall event (>25 mm).
- Protect stockpiles with perimeter sediment controls.

ESCs:

- Install appropriate protection measures (i.e., silt fencing, straw/hay bales) around stockpiles.
- Establish and use down-slope sediment controls where drainage water will be discharged from the Project Footprint.
- Avoid introducing sediments (silt, sand, and clay) into the water during activities and use only clean materials for backfilling.
- Continually monitor (visually) waterbodies and wetlands for signs of sedimentation during all work phases. If sedimentation occurs, cease activities and take corrective actions to mitigate the situation prior to proceeding.

### **3.5 Access Trail & Hardstand Areas**

Construction of access trails involves clearing, grading, and compacting, resulting in exposed areas that may be an ongoing source of sediment in runoff and should be monitored more frequently during routine inspections. The following general guidelines apply to access trails and hardstand areas:

- Design all access trails to drain effectively using outwards sloping and rolling dips.
- Install swales or drainage ditches to minimize uncontrolled runoff from flowing over exposed slopes and embankments.
- Install sediment traps at regular intervals inside drainage ditches and always before discharge into natural waterbodies (such as streams or wetlands).

### **3.6 Waterbodies & Wetlands**

Waterbodies should be protected from uncontrolled loss of sediment-laden water or soil slumping given the proximity of waterbodies to the Project (15- 200 m). Riparian areas are the transitional zone between an upland (i.e., dry) area and the waterbody's shoreline (i.e., margins and banks). These areas provide habitat, are critical for soil stabilization, and are natural ESC zones. Note that the work scope was reviewed by DFO and provided a letter of advice with mitigation measures on July 9, 2025. As well, NL Hydro received a permit from Water Resources Management Division on August 26, 2025 (Appendix B) to allow for clearing within 15 m of Quarry Brook and Indian Pond. Direct disturbance and indirect impacts (ex. Erosion) to the waterbodies and wetlands noted within the Project Footprint and in proximity to the Project will be managed through a series of mitigations to mitigate the introduction of sediment into the waterbodies and wetlands, the following measures will be implemented:

Mitigation Measures:

- Stabilize wet areas by installing timber mats, brush matting, and/or corduroy roads to avoid wetland disturbances and allow temporary crossing with vehicles and equipment.
- Prohibit grading of streambanks or approaches.
- Prohibit soil disturbances to waterbodies unless proper permitting (through WRMD) is granted.



- Position equipment on stable ground in proximity to the waterbodies.
- Fuel, maintain, and stage equipment (when not in use) outside a 30 m buffer zone to limit the potential for accidental spills or releases.
- Direct felled trees during hand clearing away from a waterbody; any trees felled within the high-water mark must be removed immediately.

ESCs:

- Install appropriate protection measures (i.e., silt fencing, straw/hay bales) around identified wetlands and watercourses/waterbodies to avoid sediment discharge into these sensitive features.
- Establish and use down-slope sediment controls where drainage water will be discharged from the Project Footprint.
- Ensure controls for intermittent drainage features are stabilized and supported if scouring is observed.
- Avoid introducing sediments (silt, sand, and clay) into the water during activities and use only clean materials for clearing works and activities.
- Continually monitor (visually) waterbodies and wetlands for signs of sedimentation during all work phases. If sedimentation occurs, cease activities and take corrective actions to mitigate the situation prior to proceeding.

## **4.0 EROSION & SEDIMENT CONTROLS**

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Erosion control is the last line of defence to protect water quality. However, areas with effective erosion and runoff control may not need sediment control measures depending on the slope, runoff pattern, and soil type.

Erosion control consists of measures to prevent soil erosion. It may involve installing and maintaining physical barriers on the soil surface (such as vegetation or rock) and/or using temporary structures such as silt fences, hay bales, and/or swales to contain and control eroded materials.

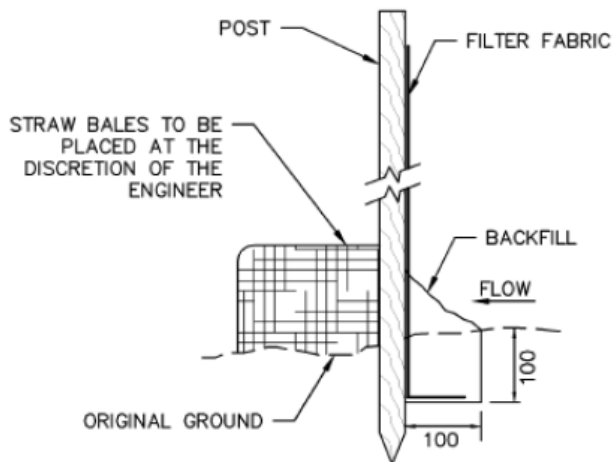
The following sections describe ESCs and mitigations that can be applied during Activities to prevent and control erosion and sediment runoff.

### **4.1 Temporary Cover**

Scattering tree chippings/mulch in cleared areas effectively reinstates an area affected by soil disturbance. Where exposed soils are prevalent, wood chips/mulch from clearing activities can be applied by an experienced contractor using standard application methods as clearing proceeds. Using temporary cover, such as wood chips/mulch, is the preferred method of slope protection. However, the slope may be protected with other measures such as geotextile, jute mesh, gravel, riprap, erosion blankets, and/or straw cover. Stabilization (or temporary stabilizing cover for the winter months) should occur as soon as possible following the disturbance.

## **4.2 Silt Fences**

Where possible, perimeter silt fences may be installed to retain eroded sediments around the downstream perimeter of any exposed soil areas following Activities and be located approximately 2 m from the toe of any slope to ensure effectiveness.



**Figure 4.1: Silt Fence Detail**

Silt fences can be constructed with filter fabric and posts or stakes (Figure 4.1). Silt fencing should be parallel to topographic contours to prevent water ponding along the fence line and ensure the barrier captures any potential sediment. Perimeter silt fencing should only be removed once the controlled area is permanently stabilized or another control measure has been provided or installed. All silt fencing that is no longer needed should be removed and disposed of during decommissioning.

Silt fences should be assessed during environmental inspections and prior to significant (as defined above) precipitation events, and any built-up sediment to be removed (as needed). The removed sediment should be placed in an approved storage area, located and managed so that the stored sediments will not pose any future risk of runoff. Refer to the ESC Monitoring (Section 5) requirements for additional details on sediment management.

## **4.3 Straw/Hay Bales**

Straw/hay bales can direct runoff, disperse energy, and protect slopes. In some instances (e.g., hard or frozen ground), bales may be more effective and can be used instead of silt fencing. Straw/Hay bale barriers may also be used with silt fences in areas where silt fences alone prove insufficient for sediment control.

Where necessary, installed bales may be placed parallel and down slope of any silt fence to support the silt fence. Where possible, runoff flows should be directed towards bale barriers as sheet flows and not concentrated as ditch flows (as this may result in the bale being washed away depending on the energy/force of the flow). Straw barriers should be staked into the ground and only tightly packed bales with strong wire or twine ties should be used.

Straw wattles may also be used in place of hay bales or silt fencing and can be especially effective on steep slopes. Straw wattles are bound with strong wire or twine ties and can be installed using fascines or another alternative.

Bales (and wattles) should be periodically inspected, and those that have deteriorated or breached will be replaced. The discarded bales can be broken, opened, and spread anywhere mulch is needed, provided that it does not present a housekeeping risk and that the baling wire/twine has been removed (and appropriately disposed of) prior to dispersion.

Sediment build-up behind bales should be removed (as needed), placed in an approved storage area, located and managed so that the stored sediments will not pose any future risk of runoff. Refer to the ESC Monitoring (Section 5) requirements for additional details on sediment management.

#### 4.4 Temporary Check Dam

Check dams are used to trap coarse sediment from areas of small-scale construction activity and manage stormwater velocity (energy dissipation) through a series of dams.

A temporary check dam (Figure 4.2) is generally installed across a ditch or swale to reduce water flow velocity and minimize erosion while collecting suspended sediments. Check dams can be constructed from riprap, with the upstream slope of the dam lined with fine gravel and/or geotextile material to reduce the permeability of the dam and form an upstream pool for sediment settling. Alternatively, check dams can be constructed from gabions with geotextile lining, hay bale barriers, gravel and rock overlay, sandbags, planks, or sodded earth fill.

The check dam should be sufficiently impermeable so that a pond is formed behind the trap even during low-flow runoff events; the sizing of the installation will vary depending on the available space and anticipated flow.

For ditches with channel slopes greater than 5%, riprap or similar check dams will be placed in the ditch to slow the velocity and dissipate flow. Check dams will have a low spot (V-shaped notch) to serve as an outlet for the water, and it may be necessary to armour the outflow (using a riprap apron or other suitable method) to prevent scouring. Check dam intervals, and sizing should be determined on a case-by-case basis. To ensure the installation remains in place, excavation below swale/ditch grade is recommended.

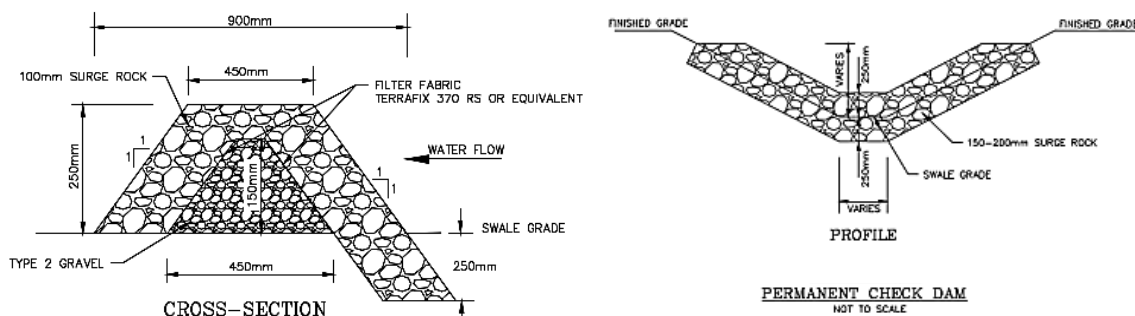


Figure 4.2: Example of a check Dam (Sediment Trap) Design

Temporary check dams should be periodically inspected, and those deteriorated or breached be replaced; the discarded bales can be broken, opened, and spread anywhere mulch is needed, provided that it does not present a housekeeping risk and that the baling wire/twine has been removed (and appropriately disposed of) prior to dispersion.

Sediment build-up behind temporary check dams should be removed (as needed), placed in a storage area, and located and managed so that the stored sediments will not pose any future risk of runoff. Refer to the ESC Monitoring (Section 5) requirements for additional details on sediment management.

Check dams may require frequent maintenance to remove accumulated sediment and must be regularly inspected and maintained (i.e., cleared of sediment) to ensure continued functionality

## **5.0 EROSION & SEDIMENT CONTROL MONITORING**

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### **5.1 Inspection Requirements**

During Activities, all ESC locations which have not been permanently stabilized will be inspected at least **once every 7 days, immediately prior to a rainfall event ( $\geq 25$  mm), or within 48 hours of the end of a heavy rainfall ( $> 25$  mm) event**. Inspection frequency may be increased at high-risk locations (i.e., steep slopes) or where drainage appears to be greater. For Activities within 15 m of a waterbody, inspection frequency should occur **once every 2 days, regardless of heavy rainfall occurrences**.

Inspections will be conducted at all ESC installations **every 48 hours** during extended storm events. If the worksite is shut down during significant storm events and 48-hour monitoring cannot be completed, inspections at all ESC installations will be completed as soon as possible once Project activities resume.

Upon discovering any sediment loss to the receiving environment and/or sensitive receptors, the issue will be immediately reported to the responsible person. Where significant erosion is observed, the area will be repaired as soon as possible, and if necessary, all work activities will cease, and mitigative actions will be implemented.

An ESC failure resulting in a sediment-laden release to the environment will be considered an incident, and the associated Incident Report Form (Appendix C) will be required to be completed within 24 hours.

Delegated Inspectors/Monitors will conduct inspections, complete the Inspection & Monitoring Compliance Checklist (Appendix D), and submit it to the responsible person for review and filing. The Inspection & Monitoring Compliance Checklist (Appendix D) document should include comments detailing any maintenance or repair work required. Photos will be taken to document any damages or failures identified during inspections, and any photos taken will be filed along with the associated Inspection & Monitoring Compliance Checklist (Appendix D) for future reference.

Outstanding action items identified during an inspection that cannot be remedied immediately will be recorded in the ESC Plan Action Log (Appendix D). The responsible person will be responsible for

following up on any outstanding action log items on a weekly (or more frequently, depending on severity) basis. Once an action item has been addressed, details of the item's status and the date it was closed will be captured in the ESC Plan Action Log by the responsible person. Closed-out actions and their outcomes will be recorded, and inspection documents will be kept on file under the care and control of the responsible person.

## **5.2 Maintenance Requirements**

Ongoing maintenance ensures the effectiveness of the Project's ESC installations and includes conducting maintenance activities consistently to ensure the installed controls are functioning optimally. General maintenance practices, as well as guidance for sediment removal, consist of:

- Maintain silt fences by repairing tears in the fabric, reattaching fabric to posts, and replacing posts or adding additional silt fencing when needed.
  - Damaged silt fence will be replaced within 24 hours of detection or immediately if rainfall is imminent.
- Remove built-up sediment behind silt fences when it reaches one-third ( $\frac{1}{3}$ ) the height of the fence or 0.15 m, whichever is less.
  - The removed sediment will be placed in a storage area located and managed so that the stored sediments will not pose any future risk of runoff.
- Inspect riprap for evidence of movement or washout. Riprap experiencing movement or washout will be removed and replaced as necessary in response to the observed runoff flow patterns. Larger stones may be incorporated into the structure for anchoring and support.
- Any observed damage to a check dam (sediment trap) will be repaired as soon as possible to avoid failure. Performance will be monitored to ensure it is providing adequate sediment control.
  - If significant sediment discharge is observed, then the size (surface area of the trap) will be increased, and additional ESCs may need to be incorporated.
  - The removed sediment will be placed in a storage area located and managed so that the stored sediments will not pose any future risk of runoff.
- Repair any observed damage to a temporary check dam immediately to avoid failure. Performance will be monitored to ensure it is providing adequate sediment control.
  - If sediment discharge is observed, then the size (surface area) of the control point will be increased, and additional ESC measures may need to be incorporated.
- Repair malfunctioning controls within 24 hours of detection or immediately if rainfall is imminent.
- Ensure that equipment and machinery are clean and free of aquatic invasive species prior to arriving on the site.
- Maintain all machinery on site in a clean condition and free of fluid leaks.
- Remove non-biodegradable ESC materials once the disturbed areas within the Project Footprint are stabilized

## **6.0 STATEMENT OF QUALIFICATIONS AND LIMITATIONS**

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This Report (the "Report") has been prepared by Strum Consulting (the "Consultant") for the benefit of Newfoundland and Labrador Hydro (the "Client") in accordance with the agreement between the Consultant and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations, and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations")
- represents the Consultant's professional judgement in light of the Limitations and industry standards for the preparation of similar reports
- may be based on information provided to the Consultant which has not been independently verified
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued
- must be read as a whole and sections thereof should not be read out of such context
- was prepared for the specific purposes described in the Report and the Agreement
- in the case of subsurface, environmental, or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time

Consultant shall be entitled to rely upon the accuracy and completeness of information that was provided and has no obligation to update such information. Consultant accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental, or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

Consultant agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but Consultant makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

The Report is to be treated as confidential and may not be used or relied upon by third parties, except:

- as agreed in writing by the Consultant and Client
- as required by law
- for use by governmental reviewing agencies

Consultant accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss, or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or

any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of Consultant to use and rely upon the Report and the Information. Any damages arising from improper use of the Report or parts thereof shall be borne by the party making such use.

This Statement of Qualifications and Limitations forms part of the Report and any use of the Report is subject to the terms hereof.

Should additional information become available, Strum requests that this information be brought to our attention immediately so that we can re-assess the conclusions presented in this report. This report was prepared by Mercy Fiamavle, MREM, Environmental Scientist and was reviewed by François Gascon, P.Eng., Environmental Engineer.

## **7.0 REFERENCES**

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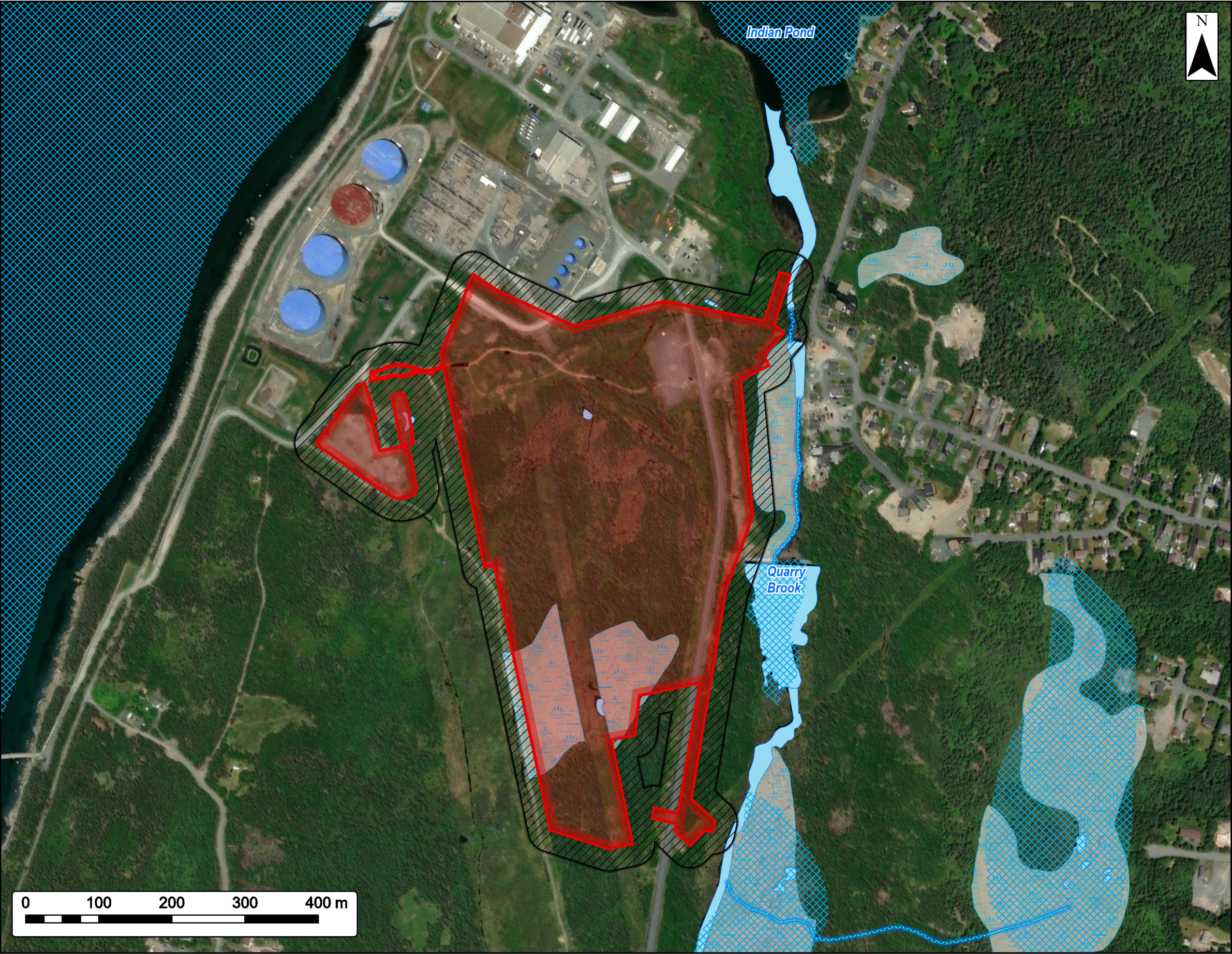
<https://www.gov.nl.ca/ffa/programs-and-funding/forestry-programs-and-funding/managing/inv-plan/>

## APPENDIX A

## DRAWING

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Project Area Overview



- Project Footprint
- Project Footprint Buffer (30 m)
- Water Features**

Stream

Lakes and Rivers

Wetlands

Regulated Waterbodies and Wetlands



Coordinate System: NAD83 (CSRS) UTM Zone 22N Sources: ESRI Basemaps, HERE, Garmin, USGS, NRCan, NFLD Gov. Depts

Date:	2025-09-08	Project #:	25-12172
Scale:	1:5,000	Drawing #:  <b>1</b>	
Drawn By:	P. Opra		
Checked By:	A. Scott		





## APPENDIX B

### ALTERATION TO WATERBODY PERMIT

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Government of Newfoundland and Labrador  
Department of Environment and Climate Change  
Water Resources Management Division

**PERMIT TO ALTER A BODY OF WATER**

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

Date: **AUGUST 26, 2025**

File No: **524**  
Permit No: **ALT14516-2025**

Permit Holder: **Newfoundland and Labrador Hydro  
500 Columbus Drive  
P.O. Box 12400  
St. John's, NL, A1B 4K7  
johnlinfield@nlh.nl.ca**

Attention: **John Linfield**

Re: **Town of Holyrood (Quarry Brook) - Holyrood Generating Station - Distribution Line  
Preparation**

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Permission is hereby given for : **the clearing of vegetation, the grubbing of the access trail, and the installation of anchors near Quarry Brook within the Town of Holyrood, for the purpose of preparing the site for installation of a new 1km distribution line, in reference to the application received on June 21, 2025 and additional information received on August 21, 2025.**

- 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**

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**General Alterations**

1. Any work that must be performed below the high water mark must be carried out during a period of low water levels.
2. Any flowing or standing water must be diverted around work sites so that work is carried out in the dry.
3. 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*.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. All waste materials resulting from this project must be disposed of at a site approved by the Department of Digital Government and Service NL.
10. 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.
11. The owners of structures are responsible for any environmental damage resulting from dislodgement caused by wind, wave, ice action, or structural failure.
12. 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.
13. 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.
14. The attached Completion Report (Appendix C) for Permit No. 14516 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.

15. 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.
16. The location of the work is highlighted on the Location Map for this Permit attached as Appendix D.
17. All work must be carried out within the Permit Holder's legal property boundaries.
18. This licence/permit does not constitute an acknowledgement of interest in any land claims adjacent.

**APPENDIX B**  
**Special Terms and Conditions for Permit**

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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: Ms. Paula Dawe, 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  
pauladawe@gov.nl.ca
- cc: Eastern Lands Office  
Fisheries & Land Resources  
P.O. Box 8700  
Howley Building, Higgins Line  
St. John's NL A1B 4J6  
easternlandsoffice@gov.nl.ca
- cc: Fish and Fish Habitat Protection Program  
Aquatic Ecosystems Branch  
Fisheries and Oceans Canada  
P.O. Box 5667  
St. John's, NL A1C 5X1  
dfo.fppnl-ppptnel.mpo@dfo-mpo.gc.ca
- cc: Town of Holyrood  
Ms. Marie Searle  
P.O. Box 100  
Holyrood, NL A0A 2R0  
gary.corbett@holyrood.ca

### Appendix C - Completion Report

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

Date: **AUGUST 26, 2025**

File No: **524**  
Permit No: **ALT14516-2025**

Permit Holder: **Newfoundland and Labrador Hydro**  
**500 Columbus Drive**  
**P.O. Box 12400**  
**St. John's, NL, A1B 4K7**  
**johnlinfield@nlh.nl.ca**

Attention: **John Linfield**

Re: **Town of Holyrood (Quarry Brook) - Holyrood Generating Station - Distribution  
Line Preparation**

Permission was given for : **the clearing of vegetation, the grubbing of the access trail, and the installation of anchors near Quarry Brook within the Town of Holyrood, for the purpose of preparing the site for installation of a new 1km distribution line, in reference to the application received on June 21, 2025 and additional information received on August 21, 2025.**

*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: \_\_\_\_\_

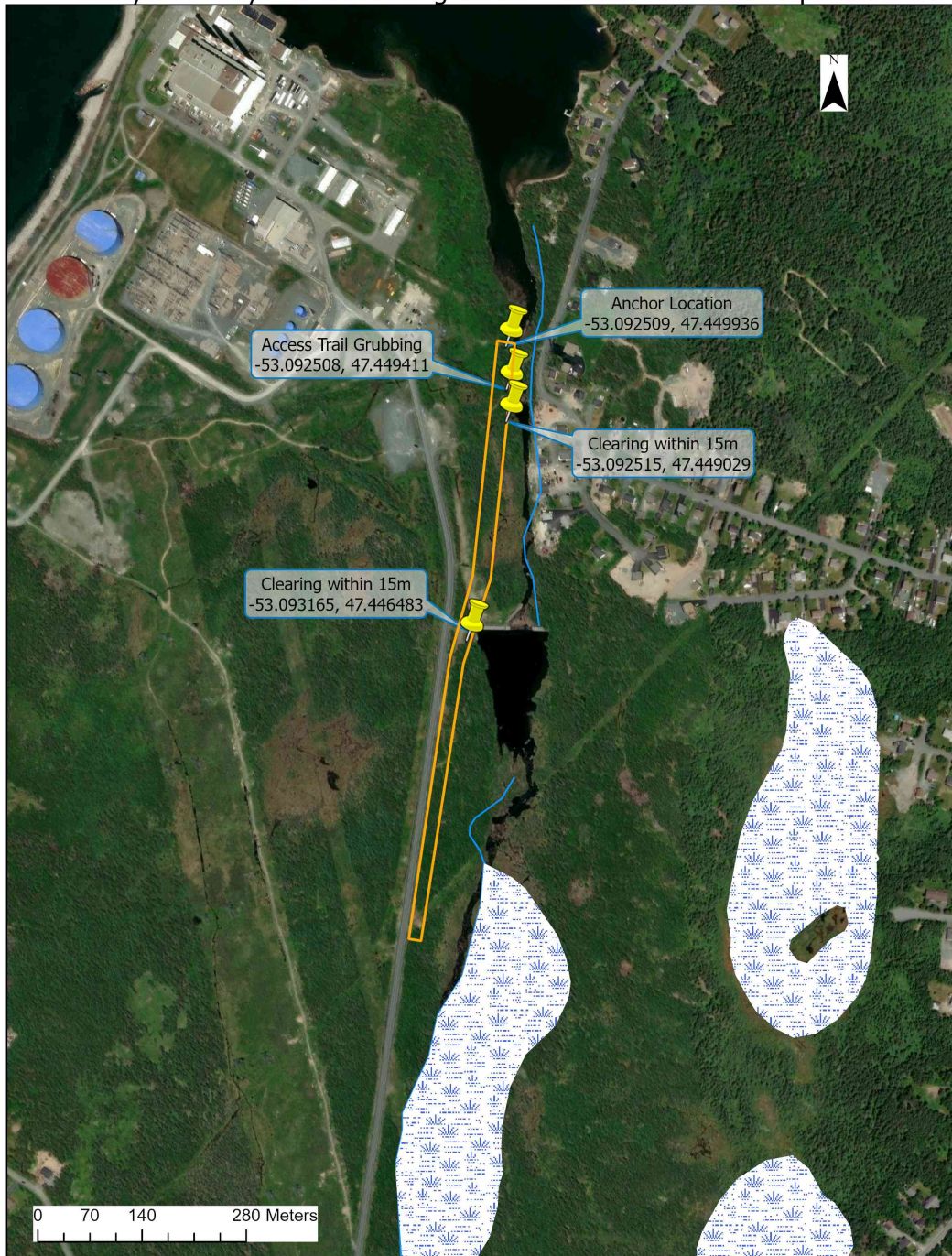
This completion report must be completed and forwarded to the following address upon completion of the approved work.

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**

NL Hydro - Holyrood Generating Station - Distribution Line Preparation



## APPENDIX C

### INCIDENT REPORT FORM

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# INCIDENT REPORT

Page 1 of 2

<b>Type of Incident</b>		✓
Erosion and Sediment Control Failure/Damage		
Stockpile Failure		
Slope Failure/Damage		
Ditch Failure		
Silt Fence Damage		
Vegetation Damage		
Flooding		
Spill		
Other:		
<b>Level of Incident</b>		✓
1. On-site, no public danger, easily controlled, no environmental impacts, and no potential to escalate		
2. Potential off-site, alert regulators, and possible public and/or environmental impact		
3. Control lost, public in danger, outside help required, injuries, or worse		
<b>Employee Information</b>		
Name (First, Last)		
Position		
Cell Phone or other Contact Information		
<b>Contractor Employee Information</b>		
Name (First, Last)		
Position		
Cell Phone or other Contact Information		
<b>Third-Party Information</b>		
Name (First, Last)		
Position		
Cell Phone or other Contact Information		

# INCIDENT REPORT

Page 2 of 2

<b>Detailed Description of Incident</b> (include all related events leading up to the incident (what, when, why, who, and how) <i>Attach additional pages if more space is required.</i>
<b>Description of Injuries (if applicable)</b>
<b>Cause of Incident</b> (provide a Root Cause and any contributing factors)
<b>Recommendations to Prevent Reoccurrence of a Similar Incident</b>
<b>Follow-up Action(s)</b>

NOTIFICATIONS	Name (First, Last)	Phone Number	Date/Time	Paperwork Sent? (circle one)		
Operations Lead				Y	N	N/A
Construction Manager				Y	N	N/A
EHS Manger				Y	N	N/A
Police/Fire/Ambulance				Y	N	N/A
DFO				Y	N	N/A
NLECC (Water Resources)				Y	N	N/A
Other:				Y	N	N/A

<b>Report Completed and Submitted by:</b>	
Name (First, Last)	
Phone	
Date	

## APPENDIX D

# INSPECTION & MONITORING COMPLIANCE CHECKLIST, ACTION LOG

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## Inspection & Monitoring Compliance Checklist

Date:

Inspector Name & Position:

Location:

**Any sedimentation discharge identified off of the Project site's boundary or entry of sediment into a nearby watercourse or wetland must IMMEDIATELY be reported as per the site's Contingency Plan**

Item #	Description	Applicable?	Status (circle)				Comments
1	Were erosion and sedimentation controls implemented in the work area PRIOR to construction activities taking place?	Yes No N/A	Good	Repair	Replace	Needed	
2	Are overburden piles equipped with erosion control measures? (Ex: silt fencing, geotextile, riprap, hay bales, rock cover, etc.)	Yes No N/A	Good	Repair	Replace	Needed	
3	Are exposed slopes equipped with erosion control measures? (Ex: silt fencing, straw wattles, geotextile, etc.)	Yes No N/A	Good	Repair	Replace	Needed	
4	Has a <b>2 m wide buffer</b> been left between any excavated material and silt fences placed alongside a drainage ditch or channel?	Yes No N/A	Good	Repair	Replace	Needed	
5	Have silt fences been installed approximately <b>2 m from the toe</b> of any stockpiled materials?	Yes No N/A	Good	Repair	Replace	Needed	
6	Are existing erosion control measures being adequately maintained? If no, provide details in the "Comments" section - i.e. "torn silt fencing"	Yes No N/A	Good	Repair	Replace	Needed	
7	Are completed work areas appropriately graded and permanently stabilized? (Ex: hydroseeding, berm mounding, etc.)	Yes No N/A	Good	Repair	Replace	Needed	
8	Is stockpiled material stored at least <b>50 m</b> from any watercourse/wetland location?	Yes No N/A	Good	Repair	Replace	Needed	
9	Is stockpiled material stored at least <b>2 m away</b> from any drainage channels/ditches?	Yes No N/A	Good	Repair	Replace	Needed	
10	In high-risk areas (i.e. steep slopes) has runoff been directed away from disturbed areas to prevent erosion?	Yes No N/A	Good	Repair	Replace	Needed	
11	Has sediment accumulated in silt fencing, check dams, straw bales, etc.? If yes, provide details in the "Comments" section.	Yes No N/A	Good	Repair	Replace	Needed	
12	Are hydroseeding activities taking place? If so, were seed species approved?	Yes No N/A	Good	Repair	Replace	Needed	
13	Are spills or stained soils evident?	Yes No N/A	Good	Repair	Replace	Needed	
14	Is follow-up erosion and sedimentation control work required at the location? If yes, provide details in the "Comments" section.	Yes No N/A	Good	Repair	Replace	Needed	

### Areas to be inspected:

All locations that have not been permanently stabilized, stockpiles, water crossings and structural control measures (i.e. silt fences, silt bags, ESC blankets, temporary check dams).

### Recommended Inspection Frequency:

All sites will be inspected once every 14 days by a competent person.

All sites will be inspected within 48 hours of the end of a heavy rainfall ( $\geq 25$  mm in 24 hours) event.

All sites will be inspected every 48 hours (or as soon as possible once site activities resume) during extended storm events.

### Recommended Maintenance Timelines:

Sediment will be removed from sediment traps when it reaches one-third (1/3) of the height.

Sediment will be removed from silt fencing controls (i.e. straw wattles, silt fencing) when it reaches one-third (1/3) of the height of the fence or 0.15 m, whichever is less.

Damaged sediment fence will be replaced within 24 hours of detection, or immediately if rainfall is imminent.

## Erosion & Sediment Control Plan - Action Log

*If multiple issues are associated with a single location, categorize each issue as an independent line item to ensure follow-up is completed.*

[illegible]