

PERMIT TO CONSTRUCT

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 37, 39

Date: **MAY 24, 2018**

File No: **844.083.002**

Permit No: **WS9665-2018**

Permit Holder: **Town of Pouch Cove
PO Box 59
Pouch Cove NL A0A 3L0**

Attention: **Ms. Barbara Tilley, Town Manager**

Re: **Pouch Cove - Water Treatment Plant and Storage Tank**

Permission is hereby given for: the installation of 1880 m³/day treatment system consisting of four multimedia filters, a NF membrane filtration skid, cartridge filter, a CIP system skid and tank, chemical dosing system consisting of two dosing pumps and solution tank, a duplex UV disinfection system, a 1020 m³ water storage tank, two 15 900 L wastewater tanks and related works as described in the drawings titled, "Town of Pouch Cove Pouch Cove Water Treatment Plant" and the design brief as received from CBCL Limited on April 20, 2018.

- 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 measures as may be prescribed by this Department.



MINISTER

APPENDIX A
Terms and Conditions for Permit

Water & Sewer General

1. 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*.
2. 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.
3. 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.
4. The works proposed must satisfy the requirements of the latest applicable codes and standards, and be consistent with or otherwise address the design criteria set out in the Department of Municipal Affairs and Environment publication *Guidelines for The Design, Construction, and Operation of Water and Sewerage Systems, 2005*, and as amended from time to time.
5. The work must be undertaken in strict compliance with the submitted documents and the latest version of the *Municipal Water, Sewer and Roads Master Construction Specifications*. A copy of all documents, including the *Municipal Water, Sewer and Roads Master Construction Specifications* must be available for viewing at the construction site office at all times.
6. Liaison is to be maintained with the Environmental Scientist representing the Drinking Water and Wastewater Section of this Department, during the construction and operation of the project. They shall be notified of the pre-construction and post-construction meetings so that they may attend, if deemed necessary. They can be reached at telephone (709) 729-2558.
7. Officials of this Department and/or municipal authority may visit the project from time to time to ensure that work is carried out within the provisions of this Permit, and is not creating any environmental hazard.
8. Any changes in the approved works, or works other than those specified in the application, must be submitted, in writing, to this Department, and approved, in the form of an Amendment to this Permit, prior to any work.
9. Copies of this Permit, as well as any subsequent Amendments, must be provided to the contractor(s) who will be carrying out these works, and to the engineer's site representative.
10. The attached Completion Report (Appendix C) for Permit No. 9665 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.
11. 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.
12. The drinking water system shall be operated and maintained in accordance with the Permit to Operate issued by this Department.
13. Management of stormwater is the responsibility of the municipality or LSD. Stormwater management should focus on ensuring that the post-development stormwater runoff rate will be equal to or less than the pre-development runoff rate. Any stormwater runoff has the potential to contribute to flooding downstream which may have liability issues for the municipality or LSD if not managed properly.
14. The Owner must update any drawings maintained of the drinking water system to reflect the modification or replacement of the works, where applicable.

Water Systems

15. Under no circumstances shall sewage be permitted to enter the waterline trench during or after construction.
16. All new waterlines and appurtenances shall be hydrostatically tested in accordance with the *Municipal Water, Sewer and Roads Specifications*.

17. Water mains must not pass within 15 metres of any part of a sewage disposal system. Water service lines must not pass within 7.5 metres of a sewage disposal system. In general the following conditions should be met in regards to water service lines:
 - (a) There should be no joint in the service line between the building and the connection to the watermain.
 - (b) The groundwater level should not be above the service line.
 - (c) The service line should be located upslope of the sewage disposal system.If the above conditions are not met, consideration should be given to increasing the distance between the service line and the sewage disposal system, providing extra protection against contamination.
18. All components, lubricants and chemicals provided shall be compatible for use with drinking water and shall meet the requirements of ANSI/NSF 60 Drinking Water Treatment Chemical Standard and ANSI/NSF 61 Drinking Water and System Component Standard and any other standard applicable to potable water.
19. Backflow prevention devices should/must be installed on service connections where there is a high risk of contamination of the potable water supply.
20. All new lines and appurtenances must be disinfected by an approved method described in the latest edition of the AWWA C651 Standard for Disinfecting Watermains and using only chlorine products that meet the NSF 60 standard.
21. After final flushing and before the new water main is commissioned into service, bacteriological sampling must be conducted as per the latest edition of the AWWA C651 Standard for Disinfecting Watermains. Two acceptable options are available: (1) two consecutive sets of bacteriological samples, taken at least 16 hours apart, must be collected and tested for bacteriological quality, or (2) following a 16 hour rest period two consecutive sets of samples, taken 15 minutes apart, must be collected and tested for bacteriological quality. Sets of samples shall be collected for every 366 m of new water main including the end of the main line and the end of each branch line. These sampling locations shall be determined by the engineer. **A copy of test results must be submitted to this Department (Water Resources Management Division) before the new watermain is placed into service.** In the event of any bacteria detected in the sample results, flushing and re-sampling may be attempted or the disinfection process will need to be repeated until results for two consecutive sets of samples are bacteria free. Where necessary, this Department should be contacted to determine provisions for the disposal of heavily chlorinated water.
22. For the purpose of disinfecting new or upgraded watermains, connection may only be made to the existing watermain provided a valve is installed that maintains a water tight seal. This valve may be operated to flush the new water extension before disinfection and post disinfection provided adequate measures and procedures are followed to avoid a backflow and contamination of the existing system.

Miscellaneous

23. The Permit Holder must prevent erosion of drainage ditches, streams or other natural bodies of water by installing rip-rap and/or sodding.

Water Treatment

24. There shall be adequate storage handling facilities for 30 days of dry chemical supply.
25. All drains and vents shall be equipped with screens to prevent the entry of insects, birds and rodents.
26. A minimum of 2 feed/metering pumps shall be provided for all chemical feed systems.
27. Chemical mixing tanks shall be located as near as possible to the point of application to minimize the length of feed lines.
28. All components, lubricants and chemicals provided shall be compatible for use with drinking water and shall meet the requirements of ANSI/NSF 60 Drinking Water Treatment Chemical Standard and ANSI/NSF 61 Drinking Water and System Component Standard and any other standard applicable to potable water.
29. Storage tank and pressure tank drain lines and overflows shall not be directly connected to the building floor drain, but shall be separated from the floor drain by an appropriately sized air gap. Drain lines from the storage tank and pressure tanks shall be protected from back-siphonage or back-pressure by an appropriate backflow prevention device.
30. A sample tap shall be provided so that water samples can be obtained from the raw water source and from an appropriate location after chlorination. Taps used shall be of the smooth-nosed type without interior or exterior threads and shall not have a screen, aerator or other such appurtenance.
31. An emergency shower and eye wash station that is in compliance with ANSI Z358.1-2014 and meets the requirements of the appropriate Materials Safety Data Sheet (MSDS) shall be installed in a convenient location(s) within each facility.
32. The owner shall ensure that all chemicals used in the treatment process and all materials contacting the water are of Food Grade quality and meet both the American Water Works Association (AWWA) quality criteria as set out in AWWA standards and the American National Standards Institute (ANSI) and the National Sanitation Foundation (NSF) safety criteria as set out in ANSI/NSF 60 or

ANSI/NSF 61 standards and any other applicable standards.

33. The water treatment plant including all interior and exterior water piping systems, all storage tanks including the finished water clear wells, filter media and other receptacles and appurtenances must be disinfected by approved methods such as described in the American Water Works Association Standards, Disinfection of Watermains, C651-99, Disinfection of Water Storage Facilities, C652-92 and Disinfection of Water Treatment Plants C653-87. It should be noted that the filter chambers must be disinfected prior to the placement of filter media and subsequently, the media disinfected as per the above quoted Standards. After final flushing, samples shall be collected and tested for bacteriological quality. The sampling locations shall be determined by the engineer. A copy of the test results shall be submitted to this Department (Water Resources Management Division) before the treatment plant is placed in service.
34. Residuals discharged from the water treatment plant must meet the requirements of the *Environmental Control Water and Sewage Regulations, 2003*.
35. An emergency shower using potable water shall be installed in a convenient location in the chemical mixing area.
36. Appropriate backflow prevention devices meeting or exceeding the CSA 64 Standard shall be installed on all potable water lines where a cross connection may exist or be created, to prevent the possibility of contaminants entering the potable water distribution system due to back-siphonage or back-pressure.
37. All chemical tanks shall have liquid level indicators and overflows connected to a drain line.
38. Continuous on-line monitoring of disinfectant residual is required with a maximum 5 minute interval for measurements as water enters the distribution system or at some point prior to the first consumer.
39. Continuous on-line monitoring of turbidity is required for individual filters with a maximum of 5 minute intervals for measurements.
40. The water treatment plant shall be provided with an automated SCADA system for control of all treatment processes including RTUs/PLCs, MTUs, HMIs, data historian, trend applications and communication systems as required.
41. Continuous on-line monitoring of pH is required.
42. The water treatment plant is provided with a back-up or emergency power supply.

Commissioning and Monitoring

43. The drinking water treatment system shall meet the required performance standards/criteria/objectives as established in the Request for Proposals.
44. This Department must be informed of the date of commission of the drinking water or wastewater treatment system.
45. The water treatment plant must meet the requirements of the *Drinking Water Treatment Standards for Newfoundland and Labrador*.

Water Storage Tanks

46. The water storage tank must be disinfected by an approved method as described in the latest edition of the **AWWA C652 Standard For Disinfection of Water Storage Facilities Standard**. The solution used for disinfecting the water storage reservoir may not be discharged to a water course. After final flushing, samples shall be collected and tested for bacteriological quality. A copy of the test results shall be submitted to this Department (Water Resources Management Division) before the storage reservoir is **placed in service**.
47. The water storage tank, all appurtenances and coatings must meet the latest ANSI/NSF 61 Drinking Water and System Component Standard, the latest AWWA Standards, and any other standards and codes that may be applicable.
48. Water storage tank capacity shall meet the requirements of Peak Balance Storage, Fire Storage and Emergency Storage as set out in the *Guidelines for The Design, Construction, and Operation of Water and Sewerage Systems, 2005*.
49. The water storage tank must be equipped with a mixing system.
50. The water storage tank must be integrated into the SCADA system, including instrumentation to control and monitor the water level in the tank.

Alternative Disinfection

51. The UV system must be certified and validated for the water being treated under NSF 55, DVGW Standard W294, or the USEPA Validation Protocol.

52. The UV system must include a control system that monitors and records flow, UVT, UV intensity or dose and that produces a visual or audible failure alarm when the UV system is not operating as designed.
53. Air release valves should be located at any high points between the intake and UV system.
54. The UV system should have automatic shutdown.

PPWSA General

55. All persons working on this project must be informed that they are within a Protected Public Water Supply Area, and must be made aware of all conditions of this Permit. A copy of this Permit must be on site during operations.
56. Equipment storage, maintenance facilities associated with this project, and all maintenance other than emergency repairs must not be located/carried out within the Protected Public Water Supply Area.
57. All waste material is to be collected in refuse containers, and disposed of at an approved waste disposal site outside the Protected Public Water Supply Area in accordance with the *Environmental Protection Act, SNL 2002 cE-14.2.*
58. The Department reserves the right to require that the Permit Holder follow, and cover all costs incurred by the Permit Holder or this department, associated with any water quality monitoring program that may be ordered by the Minister for the purpose of ensuring that the water quality is maintained within acceptable guidelines.
59. The Permit Holder must inspect the site daily, and any water quality impairment related problems are to be reported immediately to the Environmental Scientist at (709) 729-4817 and the appropriate Municipal Authority or Watershed Monitoring Committee at (709) 335-2848.
60. All vehicles and equipment must be in good working order with no leaking fuel, oil, or other harmful substances that could impair water quality.
61. All stationary motorized equipment and fuel tanks shall have metal trays, absorbent pads or impervious liners under them to catch any leaking fuel or oil.
62. Drainage from roads and other disturbed areas into any body of water must first be discharged into a settling pond, a vegetated area or pass through a sedimentation fence where all suspended material can settle out before draining into any body of water.

Fuel Storage

63. There shall be no bulk fuel storage associated with this project within the protected water supply area. Fuel shall be brought to the operating area in no more than two (2), 205 litre barrels or one (1) 500 litre slip tank. The Permit Holder is hereby informed that fuel storage and handling requires a separate approval under the *Storage and Handling of Gasoline and Associated Products Regulations, CNR 775/96.*
64. Stationary fuel storage tank shall be above ground, self contained, dyked unit with a secondary containment capacity of 110%. Every precaution must be made to keep this tank secure, and protect it as far as possible from vandalism. Furthermore, every precaution shall be made to prevent spills, leaks, or other discharges from this tank.
65. Any spills of gasoline, fuel or oil, regardless of volume, shall be reported immediately to the Environmental Scientist and the appropriate Municipal Authority or Watershed Management Committee by calling (709) 729-4817 and (709) 335-2848 respectively. Furthermore, all spills in excess of 70 litres shall be reported immediately to the 24 hour spill report line at 1-800-563-9089.
66. A complete oil spill clean-up kit must be on site at all times when gasoline or fuel powered equipment is being used or refuelled. The kit must contain the following:
 - One hand operated fuel pump
 - One recovery container such an empty 205 litre drum
 - One shovel
 - One pick axe
 - Five metres of containment boom
 - Five absorbent pads
 - Twenty-five litres of loose absorbent material
67. Refueling sites or storage tanks shall be located at least 150 metres from any water body or wetland.

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: Christa Skinner (E)
Environmental Scientist, Drinking Water and Wastewater Section
Water Resources Management Division
Department of Municipal Affairs and Environment
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4th Floor, West Block, Confederation
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christavskinner@gov.nl.ca
- cc: Ms. Annette Tobin, P. Eng.
Environmental Engineer, Drinking Water and Wastewater Section
Water Resources Management Division
Department of Municipal Affairs and Environment
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- cc: Ms. Deneen Spracklin, P.Eng.
Environmental Engineer, Drinking Water and Wastewater Section
Water Resources Management Division
Department of Municipal Affairs and Environment
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- cc: Ms. Paula Dawe, P.Eng.
Manager, Drinking Water and Wastewater Section
Water Resources Management Division
Department of Municipal Affairs and Environment
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- cc: Mr. Inayat Rehman, P.Eng.
District Engineer
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- cc: Mr. Rick Curran
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Appendix C - Completion Report

Pursuant to the *Water Resources Act*, SNL 2002 cW-4.01, specifically Section(s) 37, 39

Date: MAY 24, 2018

Permit Holder: Town of Pouch Cove
PO Box 59
Pouch Cove NL A0A 3L0

Attention: Ms. Barbara Tilley, Town Manager

Re: Pouch Cove - Water Treatment Plant and Storage Tank

File No: 844.083.002
Permit No: WS9665-2018

Permission was given for : the installation of 1880 m³/day treatment system consisting of four multimedia filters, a NF membrane filtration skid, cartridge filter, a CIP system skid and tank, chemical dosing system consisting of two dosing pumps and solution tank, a duplex UV disinfection system, a 1020 m³ water storage tank, two 15 900 L wastewater tanks and related works as described in the drawings titled, "Town of Pouch Cove Pouch Cove Water Treatment Plant" and the design brief as received from CBCL Limited on April 20, 2018.

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