C3 WATER

Delivering Value Through the Water Cycle: Source to Tap, Tap to Source™

Township of Centre Wellington

Well FPH1 CO_2 Injection System Implementation

The Township of Centre Wellington (Township) hired C3 Water Inc. (C3W) to assist with the review of treatment strategies for the Township's Well FPH1 Facility. Concentrations of trichloroethylene (TCE) exceed the Provincial Maximum Acceptable Concentration (MAC) in the Township's Well FPH1 raw water. TCE treatment is currently carried out using an air fed stripping process, and treated water TCE levels are below the Provincial MAC. Although TCE is successfully removed from the water supply using the air stripping technique, it is suspected that dissolved carbon dioxide gas is also being removed through this process. This appears to be impacting pH and carbonate speciation in the treated water and as a result calcium and magnesium become insoluble. This causes increased deposition of calcium and magnesium salts to occur on the air stripping media and equipment, as well as equipment which forms part of the downstream water distribution system. This build-up, also commonly referred to as calcification, has been noted on the air stripping media and distribution equipment including process piping, valves, and customer services and faucets.

The Township hired C3W to investigate alternative treatment strategies which address the TCE issue and also reduce the level of calcification. Phase 1 of this project involved the development and analysis of a short-list of treatment strategies. Design and implementation of a CO_2 gas injection system was identified to be the most effective upgrade solution based on a lifecycle cost analysis of upgrade alternatives. Phase 2 of this project involved pilot testing for the recommended treatment solution.

Phase 3 of this project involved the following tasks;

- Preliminary design.
- Schedule C amendment to the existing Drinking Water Works Permit (DWWP) and Drinking Water License (DWL).
- Detailed design.
- Tender period assistance.
- Construction administration.
- Site inspection services.
- Post-construction and warranty period services.

The system was commissioned in the early winter of 2018 and is operating as intended.

C3 Water Inc. 350 Woolwich St. S. BRESLAU, ON N0B 1M0
t. 519.772.9620 www.C3Water.com

a C3 Group Company