

Industrial Case Study

Xirtec® PVC Guardian™ Clear-Guard™

PROJECT:

Highland Creek Treatment Plant –
Liquid Train Upgrades, Toronto

SINGLE-WALL PIPING SYSTEMS:

Xirtec PVC®

DOUBLE-CONTAINMENT PIPING SYSTEMS:

Guardian™

INSTALLER:

Bennett Construction Group

PROJECT SUCCESS:

- Customized & Fabricated Solution
- On-Site Technical Support

IPEX Process Piping Systems Critical to Upgrade of Toronto Wastewater Treatment Plant

Xirtec® PVC single-wall and Guardian™ & Clear-Guard™ double containment piping systems were the safe and reliable choice for a \$101.5-million upgrade of the Highland Creek Treatment Plant



THE CHALLENGE

The Highland Creek Treatment Plant (HCTP) is one of four wastewater treatment facilities operated by the City of Toronto. Located at the mouth of Highland Creek in the Scarborough community of West Hill, it began operations in 1956.

The plant has a rated capacity of 2.19 million litres (or 219 megalitres) per day, and serves a population of approximately 533,000. HCTP's final effluent discharges to Lake Ontario through an outfall pipe that extends approximately 1km into the lake.

This multi-phase project is a \$101.5 million modernization and upgrade to the plant's liquid train facilities that will see some elements replaced, including the phosphorous removal system and associated ferrous chloride dosing building.

The project, requiring extensive upgrades of both single-wall and double containment piping systems through HCTP's liquid train facilities, has an estimated completion date of 2025.



A clear containment system allows for easy detection of leaks



THE SOLUTION

Phase 1 of the liquid train upgrade project is well underway, with the installation of IPEX process piping systems partially completed.

IPEX's Xirtec PVC single-wall and Guardian & Clear-Guard double containment piping systems are upgrading the aging plant's existing chemical feed systems, but also routing these systems through underground service tunnels to a future new plant. The existing plant must continue to be operational until the new plant is up and running. This upgrade project is among the larger double containment installations within the plant and will prepare for the expansion necessary for the new plant.

Personnel travel the long service tunnels, where various process piping, utilities, and equipment are located. Protecting against leaks in the ferrous chloride feed system within these tunnels is critical for health & safety and equipment protection purposes. This is achieved using Guardian and Clear-Guard double containment piping systems. In the unlikely event of a leak in the carrier piping system, the containment piping system prevents a release of highly corrosive ferrous chloride into the surrounding environment. The transparent Clear-Guard containment pipe,

in conjunction with IPEX's Centra-Guard™ visual low-point leak detection stations, provides the ability to visually inspect for and address leaks. This is an important safety feature in certain areas of the tunnel.

The Guardian system features a patented Centra-Lok™ design that reduces the required field joints by 40-60% compared to traditional double containment piping systems. This minimizes the number of connections and therefore, the potential for failures and leaks, while reducing installation and maintenance costs. The system is also available in spool piece fabrications according to specific application designs.

Xirtec PVC single-wall piping systems are being used within the ferrous chloride dosing building, which acts

as a dedicated containment structure to prevent a potential release of the chemical to the surrounding environment in the event there is a leak in the system.

Xirtec piping systems are available in both PVC and CPVC Schedule 40 and 80 thicknesses, ranging from 1/4" to 24" diameters, and feature full solutions of pipe, valves, fittings, solvent cements and accessories from one reliable and trusted source.

IPEX single-wall and double containment piping systems have been successfully operating at the Highland Creek Treatment Plant for many years, and with the new IPEX piping systems being installed as part of the liquid train upgrades and new plant construction, HCTP is poised to safely and reliably serve its community for many years to come.

Leaks are not an Option



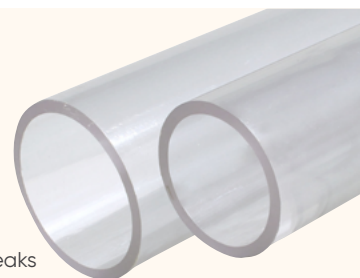
Clear-Guard™

Visually inspect for and address leaks

Guardian™

Centra-Lok™

Patented design reduces the required field joints by 40-60% compared to traditional systems.





IPEX is great to work with because of the technical support we get. They have very experienced sales reps who are well-versed in the products they sell. We can make one phone call when we have a problem and it gets solved.



Peter Strohl, Bennett Mechanical

THE IPEX ADVANTAGE

IPEX's relationships with wastewater treatment contractors and engineers mean the company is often the first call for a new project. IPEX has worked with these contractors and engineers, who often include IPEX system solutions in their specifications, on other Toronto wastewater treatment plants, including the Ashbridges Bay and North Toronto treatment plants.

Where IPEX usually stands out from other manufacturers is in their responsiveness and partnership. IPEX sales representatives began talking with the project contractor Bennett Mechanical in March 2021 about IPEX double containment solutions. Relying on the expertise and support IPEX provides around installation, Bennett's installers were given hands-on jobsite training in specialized double containment solvent welding. IPEX also provided product and technical support early in the project.

IPEX stands out in its ability to provide custom solutions where nothing off-the-shelf will solve a challenge. It's common for IPEX sales staff to work with their fabrication team and the contractor to come up with custom components and assemblies that add tremendous value to a project. In the case of the Highland Creek Treatment Plant, IPEX created specialized double containment assemblies that included ball valves, needle valves and accessible rotameters for several critical areas of the ferrous chloride feed system.

THE RESULTS / 5 TAKEAWAYS



The corrosion resistance, performance and durability benefits of Xirtec PVC, Guardian and Clear-Guard improves safety at the Highland Creek Treatment Plant, while ensuring reliable service to the surrounding community for many years to come.



Range of products – Single wall and double containment piping systems serve various plant applications



IPEX Guardian and Clear-Guard systems have been the benchmark in double containment in North America for over 35 years.



Custom assemblies – IPEX was able to design, manufacture and deliver specialized double containment assemblies when off-the-shelf solutions were not available



On-site training – Installation crews received on-the-job training in double containment solvent welding.

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