

CASE STUDY

ENHANCING WATER TREATMENT AT ABBEYLEIX WTP

CLIENT: UISCE EIREANN



CHALLENGE

Coftec collaborated with Uisce Éireann and Laois County Council to upgrade the Abbeylax Water Treatment Plant. The project aimed to improve water quality and comply with EPA regulations. Abbeylax WTP had been identified as needing improvements by the EPA.

This project was crucial for protecting public health and ensuring safe drinking water for the Abbeylax community.

SOLUTION

Coftec designed and installed a containerised UV disinfection plant at Abbeylax WTP, Co. Laois. The system provides robust UV disinfection, essential for removing harmful microorganisms. The existing sodium hypochlorite dosing system was also upgraded to meet operational criteria and maintain water quality standards.

Key components of Coftec's solution included:

- Two duty/standby suction pumps with VSD control
- Two duty/standby UV reactors
- Precision flowmeters, actuated valves, and a dedicated PLC
- Upgraded sodium hypochlorite dosing system Éireann Specifications for enhanced disinfection.

Parameter	Desired Flow Rate	Max. Flow Rate	UV Dose	UV Transmittance (UVT)	UV Intensity Sensors
Value	40m ³ /h	56m ³ /h (Min 75% UVT)	Min 40mJ/cm ²	Min. 70%	Installed

Sodium Hypochlorite Dosing System

Coftec upgraded the sodium hypochlorite dosing system at the plant, including installation of a new bulk storage tank, dosing pumps, and associated instrumentation. The upgraded system features duty/standby dosing pumps, a 250L bulk storage tank, retractable dosing lances, a pre-CT chlorine sample contact coil, combined shower and eye wash facilities, a chemical spill kit, and control options for flow proportional dose, residual dose, and flow proportional with residual trim.

RESULTS

Coftec's modular approach for water treatment upgrades demonstrated its effectiveness at Abbeylax Water Treatment Plant. The rapid installation and improved water quality led to the plant's removal from the EPA's Remedial Action List.

This project highlights Coftec's commitment to providing practical, high-quality solutions for safe and reliable water supplies.

Site Data:

Before Installation:

- **Raw Water Turbidity:** Variable, with occasional spikes leading to compliance issues.
- **UV Transmittance (UVT):** Generally lower, around 70-80%, necessitating improved treatment.

After Installation:

- **Improved Turbidity Control:** Maintained average turbidity around 0.15 NTU.
- **Enhanced UVT:** Consistently above 96%, ensuring effective disinfection.
- **Reliable UV Dose:** Exceeded the minimum 40 mJ/cm², often achieving >100 mJ/cm².
- **Stable chlorine residuals were maintained within the required ranges.**

Outcome

The successful implementation of Coftec's containerised UV system yielded immediate benefits for the Abbeylax community:

• Removal from the EPA's Remedial Action List:

The successful installation and commissioning of the UV disinfection plant led to the removal of Abbeylax Water Treatment Plant from the EPA's Remedial Action List. This achievement demonstrated the project's effectiveness in meeting regulatory requirements and ensuring high water quality standards.

Improved Water Quality: Residents and businesses in Abbeylax and surrounding areas now enjoy consistently safe and clean drinking water.

Future-proofing: The upgraded infrastructure ensures the water supply's long-term reliability and sustainability, safeguarding it against future challenges.