

# MiPro eco3 Advanced Oxidation Process for Taste and Odor Removal

WTP Sung-Nam South Korea

## Project Background

K-Water owns and operates the Sung-Nam Water Treatment Plant (WTP) in Sung-Nam Metro-City, providing drinking water to Sung-Nam, Yong-in and Suwon City. It serves over 3 million people and a beverage industry filling over 45,000 bottles of drinking water per day.

**Seasonal algal blooms cause taste and odor, leading to complaints.** Seasonal algal blooms in the Han-River, the Sung-Nam WTP water source, produce elevated levels of taste and odor (T&O) compounds like geosmin and 2-MIB. These T&O compounds are difficult to remove, and can only be eliminated through high strength oxidation.

## Difficult T&O compounds require advanced solutions.

To assure the delivery of high quality water, South Korea invested over 70 billion U.S dollar to build additional advanced water treatment facilities utilizing Advanced Oxidation Processes (AOP) in combination with Activated Carbon Filtration. An AOP system, combining ozone and hydrogen peroxide, will effectively remove these compounds and other contaminants of emerging concern, delivering dependable, high quality water to residential and industrial customers.

**“The Wedeco MiPro eco3 system reliably oxidizes taste and odor compounds, destroying them and other organic contaminants.”**



END USER:	K-Water
FLOW RATE:	34,390 m <sup>3</sup> /h
OZONE DOSE:	2 g/m <sup>3</sup>
H <sub>2</sub> O <sub>2</sub> DOSE:	0.5ppm
2-MIB REMOVAL:	0.5 LOG



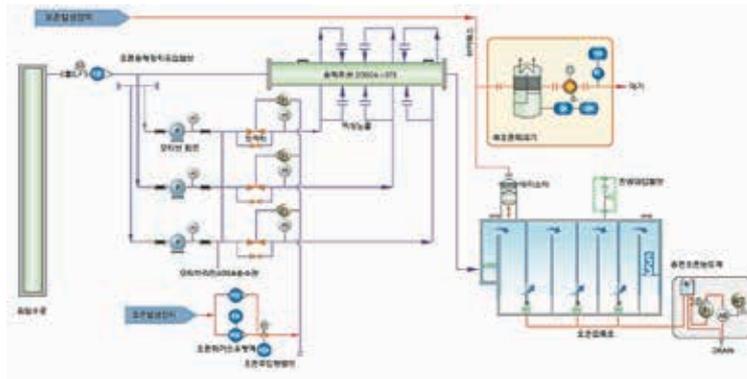
Three WEDECO PDO 1000 ozonators are producing up to 51 kg of ozone per hour from liquid oxygen.

### Wedeco MiPro eco3 system for Sung-Nam WTP

To remove T&O compounds at Sung-Nam WTP, Xylem provided the complete AOP system. Ozone is produced by three Wedeco PDO 1000 ozone generators, with a total capacity of 51 kg Ozone per hour, fed with liquid oxygen. The ozone feed is combined with hydrogen peroxide, to form hydroxyl radicals, highly effective oxidizing agents, and the key to T&O destruction. Xylem also provided the underground hydrogen peroxide storage and the delivery system that efficiently mixes the ozone and hydrogen peroxide via two DN 1000 diameter ozone injection lines. Following injection, the water flows through by two separate concrete contact tanks for reaction and degassing.



The hydrogen peroxide and delivery system was implemented by the local Xylem office in Korea.



Two ozone injection lines with a flow rate of 17,000 m<sup>3</sup>/h each.

### K-Water chose Wedeco because ....

- Reliable ozone generating technology
- Experience in engineering work
- Efficient mixing technology for operational savings

### Taste and Odor Complaints Eliminated Economically!

The reliable and efficient Wedeco Ozone Generating technology as well as the outstanding engineering work done by Xylem team, enable K-Water to supply high quality water to its customers, regardless of the season. Highly efficient ozone generation and mixing reduce operational expenditures. Wedeco MiPro eco3 AOP system completely removes taste and odor causing compounds, eliminating customer complaints and delivering dependable quality.

