

# Industrial Park Wastewater Monitoring

## Case Study: InfraServ Knapsack, Germany

## Expertise in Sampling

### Benefits of the 4700 automatic refrigerated sampler:

- Environmentally friendly, weather and chemical resistant housing
- Double wall and thick insulation
- Active temperature regulation (-29 to 49 °C)
- Separate and modular design of electronics and refrigeration
- Environmentally sealed controller (IP67)
- Powerful and separate peristaltic pump (8.3m lift)
- Non-contact liquid detector ensures accurate sample volume.
- Compliant with ISO 5667-10
- MCERTS

### 4700 Refrigerated Sampler



*"Your Source for Samplers!"*

*The Model 4700 Automatic Refrigerated Sampler from Teledyne Isco, Inc. is used for water quality monitoring at an industrial park operated by InfraServ Knapsack, Germany.*



### InfraServ Knapsack

InfraServ GmbH & Co. Knapsack KG is the company that operates the Chemical Industrial Park Knapsack. The site is situated in Huerth, south of Cologne in Germany. The park is divided into two separate sections and covers a large geographical area (160 hectares). The Chemical Industrial Park Knapsack is responsible for a wide range of services in energy, infrastructure, and waste disposal. It also operates the central treatment plant, treating wastewater from chemical, pharmaceutical, and paper industries. All treatment steps are located outdoors. Water quality parameters need to be monitored on a regular basis at key points in the treatment process, including the inlet and outlet of the plant, in order to optimize the process and follow local regulations.

### Site Challenges

All automatic samplers used for water quality monitoring and control would be placed outdoors. There was a need for a robust and weather resistant sampler that could keep the samples at 4 °C, even with big variations in temperature. The sampler would have to be versatile and easy to use and have the ability to collect samples at locations far from the water surface. The sampler pacing should be based on time or flow, according to what was available at each sampling location.



4700 Sampler Controller

#### System Options:

- Composite or sequential sampling
- Pacing:
  - Time - Constant Time/ Constant Volume
  - Flow - Constant Time/ Variable Volume
  - Flow - Constant Volume
- Large selection of bottle configurations in Glass and PE (from 4 x 20 liters to 24 x 1 liter).
- Communication with a single multipurpose cable:
  - Analog flow input (4-20 mA)
  - DC pulse flow input
  - 4 x digital alarm outputs
- Optional kit for sampling from pressurized pipes (10 – 300 PSI)

## Teledyne Isco 4700 Sampler

Eigen Messtechnik, a Teledyne Isco dealer in Germany, recommended the Isco 4700 Refrigerated Sampler for such a tough environment. This robust and easy-to-use sampler is specifically designed for industrial and municipal wastewater applications.

The Isco 4700 sampler uses a tough, double-walled Polyethylene (LLDPE) cabinet that is both weather and corrosion resistant, as well as environmentally friendly. The refrigerator is driven by a powerful, high-performance and energy-efficient compressor. Compartment temperature (4 °C) can be logged and is actively regulated by the controller

based on three different temperature sensors. The sampler has a large operational temperature span (-29 – 49 °C), which makes it perfect for the cold winters and hot summers found in Germany. The fast and simple programming makes it easy for all workers to operate the samplers. The high-performance peristaltic pump is able to deliver recommended line velocity (0.6 m/s) at head heights up to 8.3 meters, making the sampler suitable for all monitoring locations.



### Customer Feedback

Patric Holstein of InfraServ Knapsack is pleased with the benefits and features offered by the Isco 4700 samplers.

*“Due to the weather and corrosion resistant materials and the temperature controls of the 4700 sampler, we can operate our samplers at any location without any additional external housing. This is reducing cost and gives high flexibility of use. The initial installation and programming was easy to accomplish and was done in a short time with few personnel resources. The daily operation of the samplers is also reliable, quick and easy.”*



4700 Refrigerated Sampler with 24 x 1 liter bottle configuration

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