

Industrial Effluents Monitoring in Istanbul, Türkiye



The Birlik Industrial Zone brings together 81 industrial plants.

Eighty-one Teledyne ISCO Water 5800 stationary refrigerated samplers are used to monitor industrial plant effluents at Birlik Industrial Zone in Istanbul. The instruments meet strict sampling requirements and deliver proven reliability in a difficult industrial environment.

Industrial Zone

Birlik Industrial Zone is one of 270 effective industrial zones operating in Türkiye. Organized Industrial Zones (OIZ) are designed to allow companies to operate within an investor-friendly environment with ready-touse infrastructure and social facilities. The existing infrastructure provided in OIZ includes roads, water, gas, electricity, communications, wastewater treatment, and other services.

There are 81 factories within Birlik OIZ, bringing together different industries such as machinery, chemical, metal, automotive, plastic and many others. Birlik Industrial Zone is an excellent example of integrated wastewater pollution management.

Project Overview

Eighty-one Teledyne ISCO 5800 refrigerated samplers are used for wastewater quality monitoring in 16 different sectors. The samplers are used three to four days a week. Typically, one sample of 500mL is collected every hour. If needed, sampling frequency is increased to a 15-minute time interval and sample volume decreased to 125 mL.

Standard sampler configuration includes 24x1 L bottle configuration, vinyl suction line and strainer. Collected samples are stored in a bottle compartment at 0 ° to 4 °C (32 ° to 39 °F) to prevent against sample biodegradation. The samples are then tested in the laboratory for parameters such as COD, TSS, oil and grease and many others.

Site Requirements

The primary sampler requirement was to withstand various environment conditions. The wastewater quality can differ site to site, from typical domestic wastewater composition up to highly corrosive and chemically aggressive. In addition, the samplers are required to be placed outdoors, exposed to sunlight, high ambient temperature, and humidity changes.

Since stainless steel enclosers might not be appropriate for industrial conditions, other materials more resistant to corrosive effects were preferred.

The samples are taken automatically based on a predefined sampling program; remote communication capabilities also were needed to implement remote sampling in the future.

The next important requirement was to ensure pump durability and accuracy, as the samplers were supposed to be used for around the clock. In some discharge points, the manholes are 8 m deep; therefore, the pump efficiency was critical for sampling.

5800 Industrial Standard

Teledyne ISCO's 5800 stationary refrigerated sampler was recommended as it is the best sampler to meet strict industrial requirements.

The 5800's tough, double-wall LLDPE cabinet shrugs off exposure to weather and harsh environments. It is filled from top to bottom with insulation for efficient temperature control for keeping samples cool in hot, humid conditions and has heaters to keep the samples from freezing in cold conditions. In addition, corrosion resistant condenser coils make 5800 sampler the ideal solution to meet industrial application requirements.

The peristaltic pump used in 5800 samplers maintains the highest standards of accuracy and line velocity, assured by a patented Teledyne ISCO liquid detector and pump revolution counter. A peristaltic sampling system excludes the use of calibration vessels to prevent sample cross-contamination. This is appropriate for applications where durability and low maintenance are priorities.



Outdoor installation of a Teledyne ISCO 5800 refrigerated sampler at a discharge point.

Customer Feedback

The monitoring system, including Teledyne ISCO 5800 samplers and Signature[®] flow meters, meets the sampling requirements of Istanbul Water and Sewerage Administration.

Samplers have been working for seven years, enough time to evaluate the instruments in terms of operation, durability and maintenance.

The system proposed, supplied, and installed by Teledyne ISCO distributor Enotek turned out to be te reliable solution to meet sampling requirements and harsh conditions at Birlik Industrial Zone.

5800 Sequential/Composite Refrigerated Sampler

User friendly controls, intuitive design and Teledyne ISCO's dedication to quality make the 5800 Refrigerated Sampler the solution for your stationary sampling needs. Rugged enough to withstand extreme conditions, accurate enough for use in every municipal and industrial wastewater application.



- Operating range of -20 to 120 °F (-29 to 49 °C), without additional heaters
- Four digital alarm outputs
- 4-20 mA and DC pulse flow meter input
- Powerful compressor delivers energy efficient, high-performance cooling

Signature[®] Flow Meter

The Signature flow meter from Teledyne ISCO Water, designed for open channel flow monitoring, supports flow measurement methods including bubbler, non-contact laser area velocity, ultrasonic, and submerged Doppler ultrasonic area velocity.



With the ability to connect up to nine sensors*, the Signature flow meter provides a broad range of I/O and communications options:

- pH and temperature
- Ethernet
- SDI-12
- GSM/GPRS modem
- RS485
- 4-20 mA output

The Signature flow meter is rugged (IP 66) even if the lid is open. It performs data logging with variable rate data storage and data integrity verification, and has the ability to connect a USB drive for data/report retrieval and programming.

* Performance, response and speed will vary depending on the type and number of TIENet devices connected to a Signature flow meter. Check with your representative or distributor to ensure the best configuration for your application.

About Teledyne ISCO Water

Teledyne ISCO Water is a leading manufacturer of a wide range of innovative products and services designed to increase productivity while improving the quality of life on our planet. Our water and wastewater flow meters, samplers, and related products are used across the world and known for their robust construction, accuracy and dependability. Teledyne ISCO is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.

For further information contact your local Teledyne ISCO Water representative or distributor.



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