

## Industrial Discharge Non-contact Flow Measurement, Sampling, and Logging at Klatovy Poultry Plant



Teledyne ISCO's Signature® flowmeter, LaserFlow® non-contact sensor, and 5800 sampler installed at the discharge outlet of the Klatovy poultry plant for accurate sampling and flow measurement for billing purposes.

### Klatovy Plant Site Challenges

The Klatovy poultry plant (Drůbežářský závod Klatovy a.s.), founded in 1956, is the second largest poultry meat and sausage producer in the Czech Republic. In 2015 the plant's management began seeking a maintenance-free solution for untreated wastewater being discharged into the municipal sewerage system. The composition of the waste—a range of organic and inorganic materials including grit, straw, sawdust, fecal matter, paunch waste, and FOG (fats, oils and grease)—was the most critical factor to be considered. The flow measurement and sampling points both needed to be located in the same manhole. The tight space and highly variable conditions, including near zero flows and sudden surges were also important considerations in the selection of flow-measurement and sampling technology.

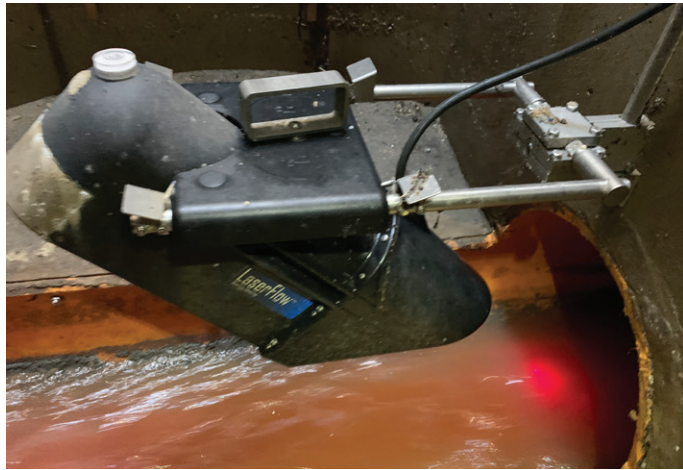


*Flow measurement and sampling points are both located within the same discharge outlet manhole.*

## The Teledyne ISCO Fully Integrated Solution

To ensure accurate flow measurement for billing purposes under difficult flow conditions, and to achieve the required low cost of site maintenance, Teledyne ISCO's distributor in the Czech Republic, Technoqua, recommended our non-contact LaserFlow® sensor connected to our Signature® logger.

For the collection of proportional flow samples, our 5800 sampler was an integral part of the solution. With its durable design, reliable peristaltic pump, and compliance to 5667 and 16479 (MCERTS) standards, the 5800 sampler delivers outstanding performance in challenging industrial applications.

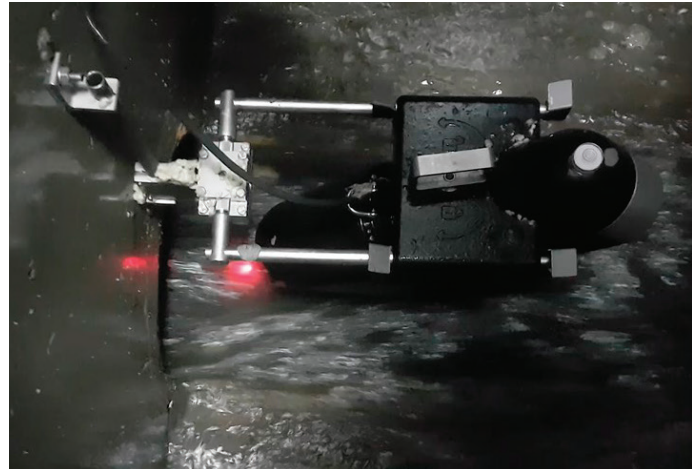


*LaserFlow non-contact sensor installed above 450 mm diameter outlet at moderate flow conditions.*

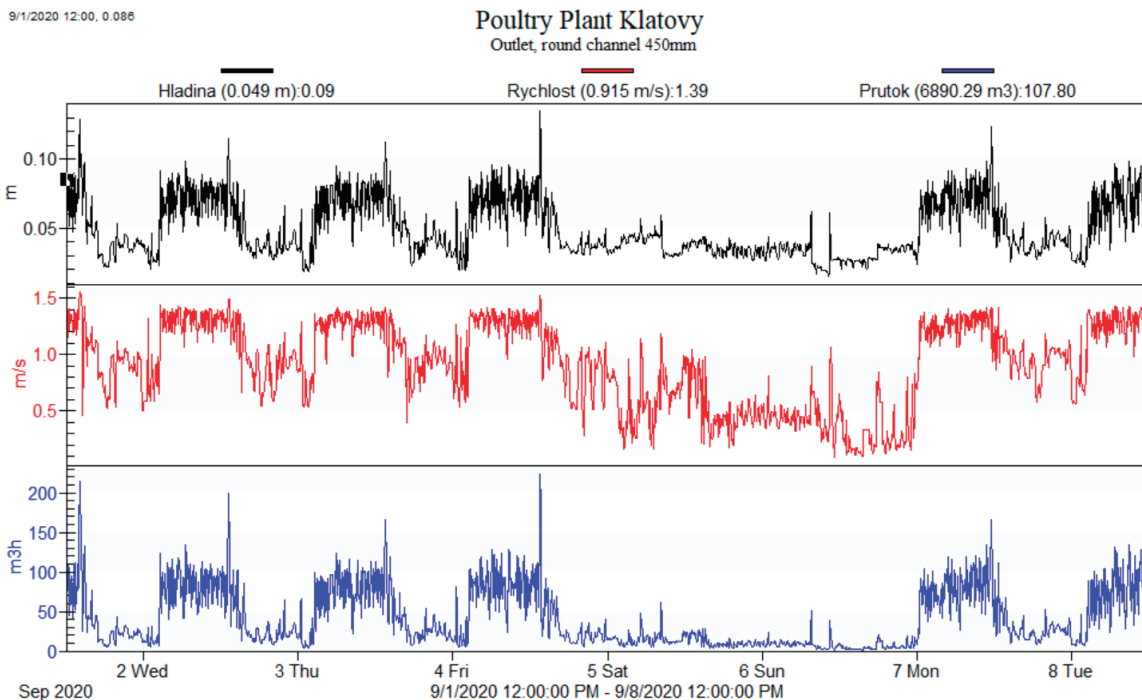
## Results and Customer's Feedback

The solution met all of the customer's requirements for flow measurement and industrial sampling. The system has been operating without failure since September of 2015. The non-contact flow sensor technology allowed the customer to account for discharged wastewater using actual measurements.

The plant was also able to save operational costs that would have been required for maintenance if a conventional contact measurement device were installed instead.



*LaserFlow sensor placed above 450 mm diameter outlet at surcharge flow conditions.*



*Graph of flow data for one-week. Velocity varies from near zero (<0.15 m/s) when level falls below 20 mm on Sat–Sun, to around 1.5 m/s when level reaches approximately 100 mm during peak production hours.*

## TIENet® 360 LaserFlow Sensor

The TIENet 360 LaserFlow sensor is an area-velocity flow and water-level measurement device that remotely senses flows in open channels using non-contact Laser Doppler Velocity Sensing and non-contact Ultrasonic Level Sensing technologies. The sensor uses advanced technology to measure velocity with a laser beam directed at single or multiple points below the surface of the wastewater stream. Therefore, unlike radar technology, it does not require the creation of ripples on the surface of the stream.



- Zero deadband from measurement point in non-contact level and velocity measurements Continuous measurements in submerged conditions
- Advanced velocity diagnostics for data quality evaluation and analysis
- Bidirectional velocity measurement
- Low level velocity measurement

## Signature® Flowmeter

The Signature flowmeter from Teledyne ISCO, 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 9 sensors, the Signature flowmeter provides a broad range of I/O and communications options:

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

The Signature flowmeter is rugged (IP 66) even if the cover of 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.



## 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 flowmeter input
- Powerful compressor delivers energy efficient, high-performance cooling

## About Teledyne ISCO

Teledyne ISCO is a leading manufacturer of a wide range of innovative products designed to increase productivity while improving the quality of life on our planet. Our standard and customized products are used across multiple sectors including water and wastewater, pharmaceutical, academia, oil exploration, and reactant feed. 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 representative.