



Variable Influent. Predictable Outcomes.™

Game-changing influent insight for wastewater treatment resiliency & cost savings

Location: South America

Client: One of the world's largest sanitation companies

Type of Plant: Municipal facility with industrial discharge

Size: 130 MLD (34 MGD)

Location of Sensors: Sewage channel influent monitoring points

Problem Statement: Treatment issues and poor effluent due to influent variability stemming from industrial discharge, rainwater infiltration, and organic overloads

Outcome: Improved influent tracking, real-time event detection, proactive wastewater management, and improved effluent outcomes



"SENTRY sensors, provides us with resources to proceed with operational intervention aimed at mitigating the negative impact on our plant, preserving our MLSS quality, to project chemical consumption in sludge dewatering, and offering the possibility of taking samples to monitor our legal compliance."

WWTP Operations Manager

Facility Overview and Problem Statement:

One of the world's largest sanitation companies has a wastewater treatment plant (WWTP) providing water, sewage collection, and treatment to hundreds of municipalities. It specifically faces significant operational challenges due to industrial discharges, rain infiltration, and seasonal variability continuously spiking BOD and toxicity resulting in ongoing treatment issues and poor effluent.

Deployment Overview:

This treatment facility handles sludge dewatering residue with high metal concentrations from a nearby water treatment plant. To monitor influent conditions in real time and ensure efficient, high-quality treatment on a continuous basis, the WWTP team turned to SENTRY™.

SENTRY wastewater quality monitoring sensors were placed in the sewage channel influent uniquely flagging issues as they happen and allowing the team to react quickly, track recovery, and return to normal operations within a few days minimizing impact on treatment processes. From identifying a continuous increase in biological activity levels indicating an organic overload to the impacts of heavy rainfall events suddenly shifting influent strength, SENTRY sensors provided the real-time insights into influent dynamics the team had been missing.



Figure 1 - Aerial shot of the South American treatment plant

Results and Values:

SENTRY sensors helped identify influent challenges in real time helping the team mitigate risks and make informed operational decisions that led to improved stability and process efficiency against unexpected influent variations.

Industrial discharge events detected	7 ✓
Influent upset events detected	2 ✓
Inflow/infiltration upsets detected	3 ✓
Severe/long-duration events detected	1 ✓

The following graph shows a sample snapshot from the SENTRY web dashboard identifying fluctuating influent and an upset event as it happened. With this early insight, the WWTP team no longer had to work “blindly” when it came to influent changes resulting in more resilient, cost-effective wastewater treatment.



Figure 2 - SENTRY Wastewater quality monitoring sensors uniquely placed in the WWTP's sewage channel influent

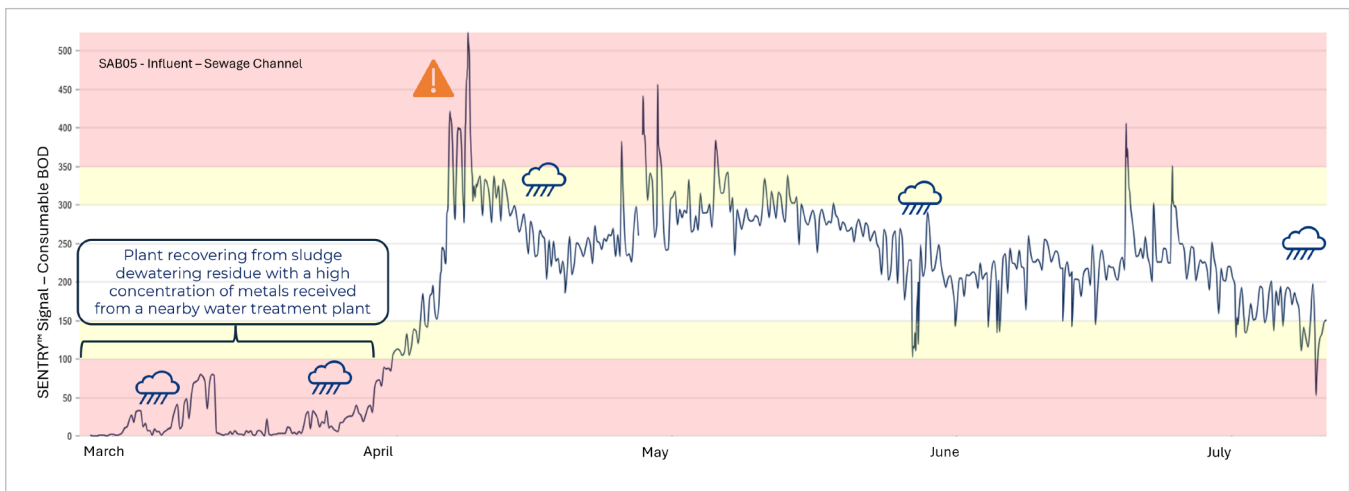


Figure 3 - SENTRY Dashboard data showing plant upset detections

Next Steps:

This South American treatment plant will continue leveraging SENTRY's unique real-time influent data to refine aeration strategies, monitor toxicity levels, and assess dilution impacts. The goal is to establish a robust framework for real-time wastewater monitoring, improving overall treatment efficiency, and reducing operational costs.



Visit the SENTRY website to see how other facilities are using our sensors to optimize & decarbonize wastewater treatment for just a few dollars a day!