sentry

Always on,
Quality monitoring!

Jon Grant, MSc, LLM

www.sentrywatertech.com
jgrant@islandwatertech.com
(+1) 416 617 3615

Problem statement

Fluctuating influent wastewater

- Stormwater
- Bio-upset, effluent issues

Sub-optimal biological performance

Costs up to $200,000

Maintenance of traditional real-time sensors - Costs over $7,000 / year

Problem statement

Fluctuating influent wastewater
- Stormwater
- Bio-upset, effluent issues

Sub-optimal biological performance

Costs up to $200,000

Maintenance of traditional real-time sensors -
Costs over $7,000 / year

Problem statement

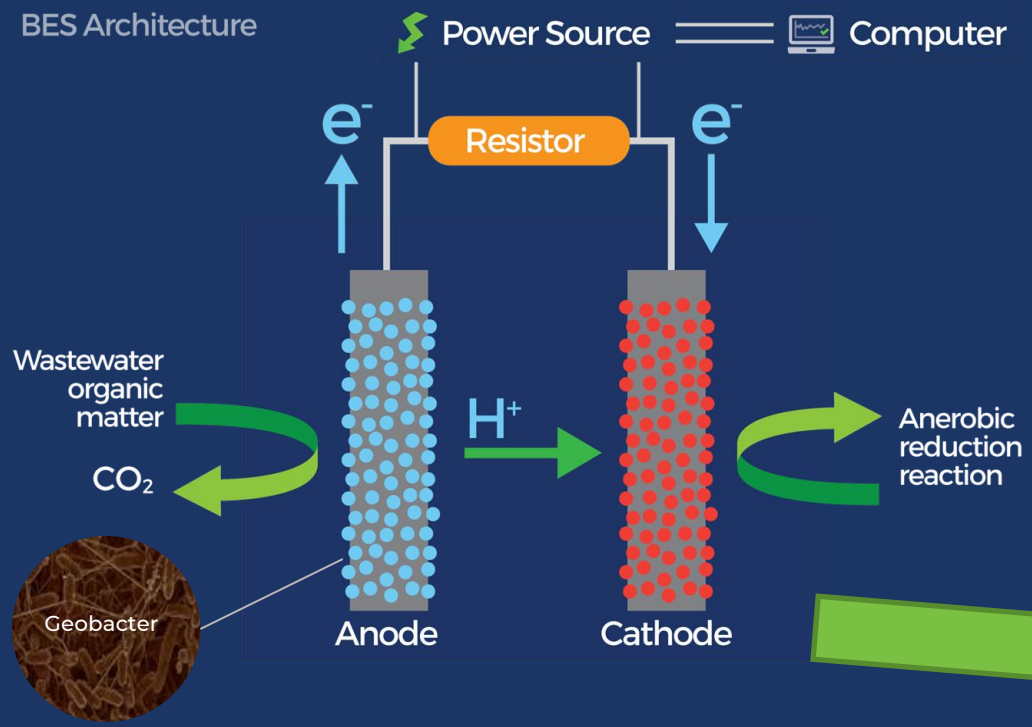
Fluctuating influent wastewater
- Stormwater
- Bio-upset, effluent issues

Sub-optimal biological performance

Costs up to $200,000

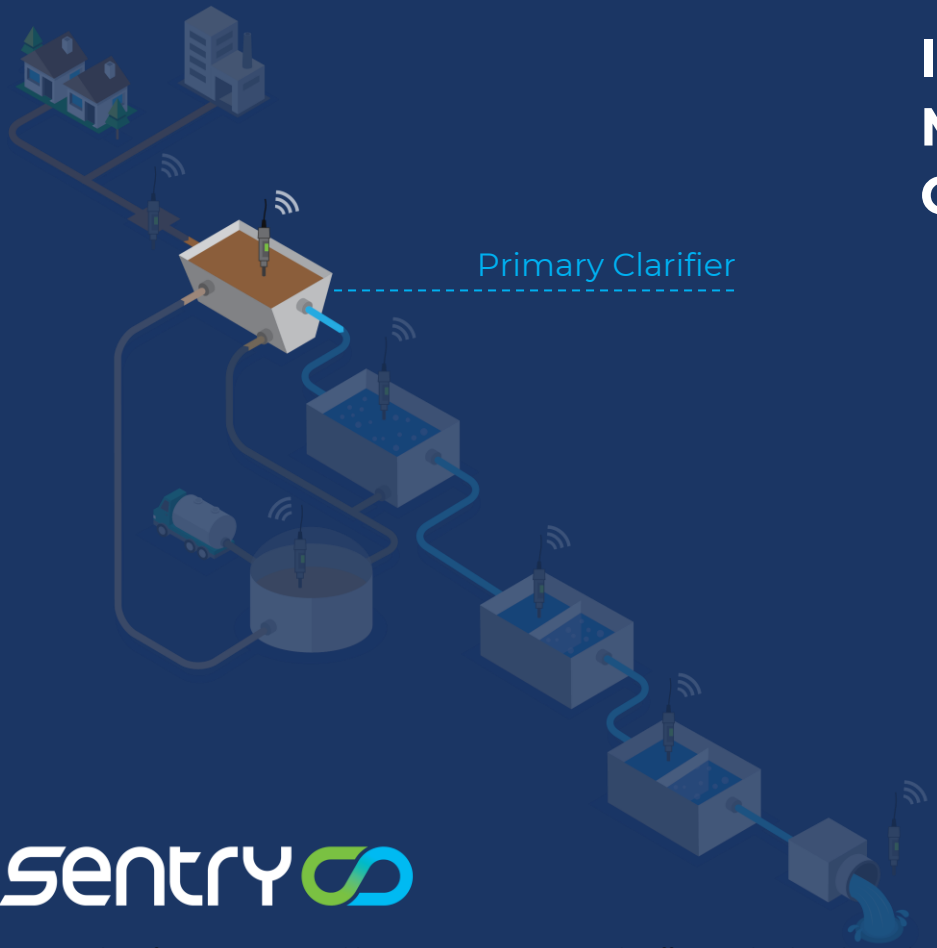
Maintenance of traditional real-time sensors -
Costs over $7,000 / year

A low maintenance biofilm sensor platform



A low maintenance biofilm sensor platform

Living **biological sensor** which reacts to changes in environmental conditions in **real-time**



Influent Organic Load Monitoring and I&I Impact Quantification

$75,000/year

Savings

sentry

Wastewater Collection System Monitoring & Industrial Discharge Detection

$90,000/year

Savings

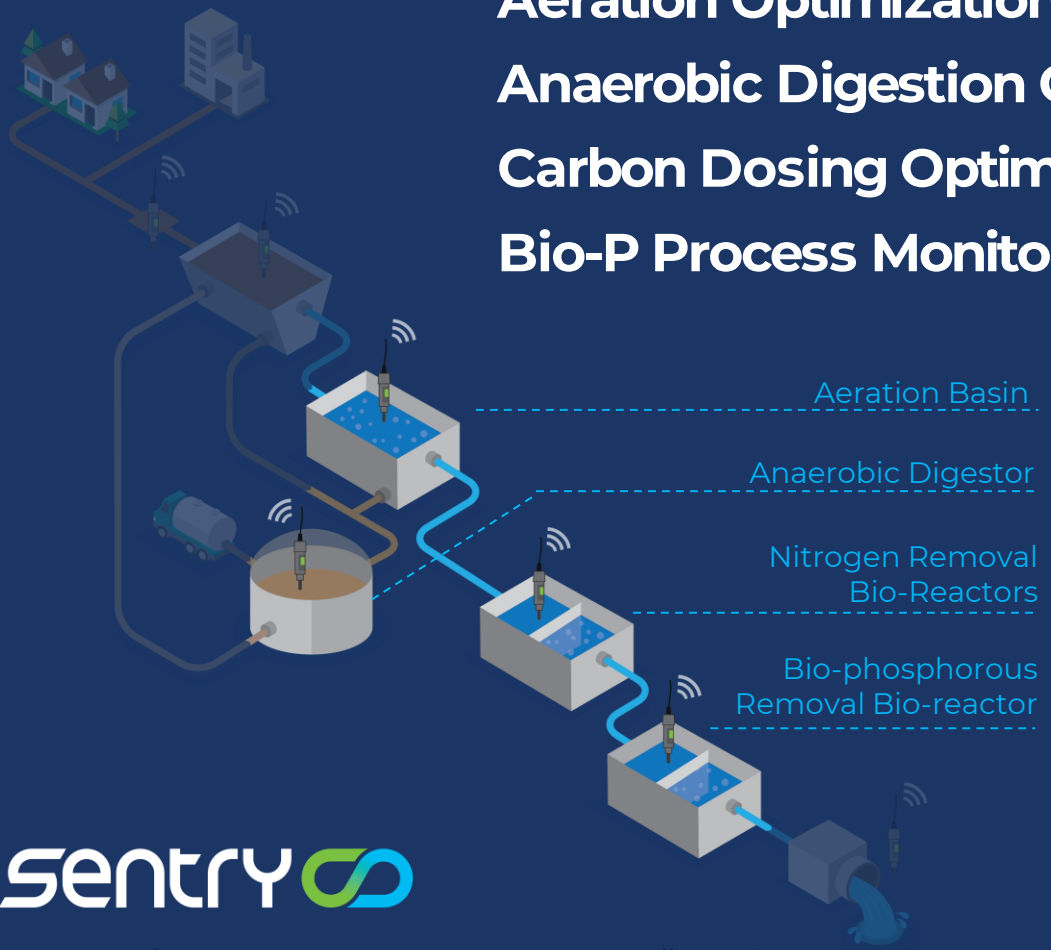
sentry

Aeration Optimization

Anaerobic Digestion Optimization

Carbon Dosing Optimization For Denitrification

Bio-P Process Monitoring

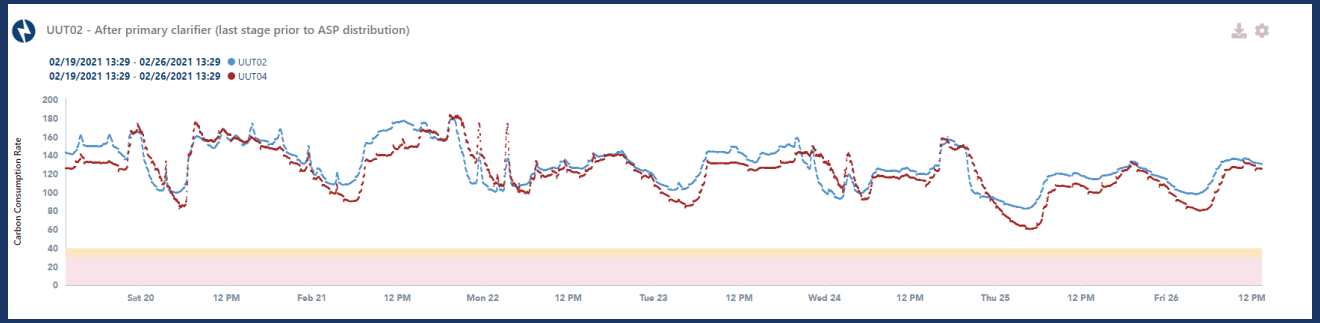


$45,000-
$75,000/year

Savings

sentry

Low/no maintenance

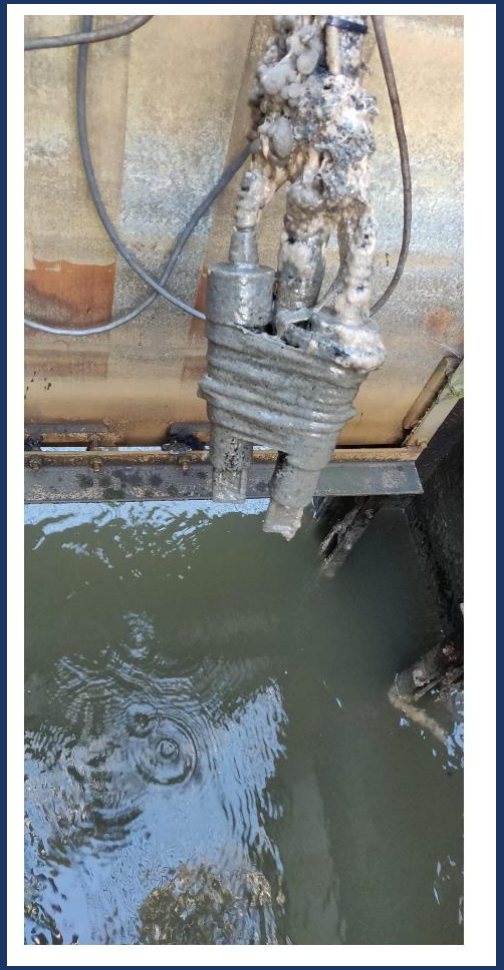


Blue installed in May 2019

Red installed in October 2020

No maintenance to date. Planned a maintenance regime but COVID limited access to site

Picture from December 2020



90+ Global installations:

Installation:

- Plug and play (2-3 hours installation) with installed SIM
- Alternative standard: wifi, ethernet, 4-20 mA
- With conversion: profibus & modbus available
- Download *.csv anytime
- 24 W power draw
- Typically 1-2 panels with 2-4 probes each

Standard NEMA 4x Panel

High Flow, High Solids

Low Turbulence Tank Drop-In

In-line 1.5” Installation

Case Study:

City of Frankfort

PELTON ENVIRONMENTAL PRODUCTS

Pelton - Frankfort

Jim Pelton

- Municipal Treatment Plant (population of 30,000)
- Distillery 150 yards upstream
- Variable organic loading and major BOD swings

Deployment experience

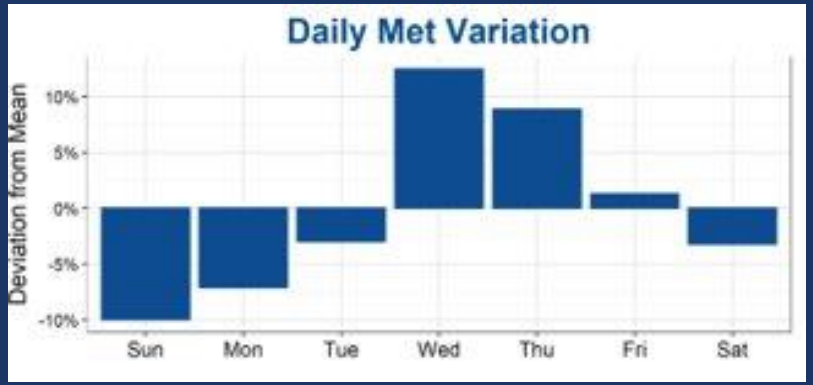
- Flagged distillery discharge events
- Flagged high rain dilution events
- Statistical analysis – patterning

Deployment experience

Unexpected finding...

Unknown spikes – not related to the distillery

Statistical analysis – consistently on Wednesdays



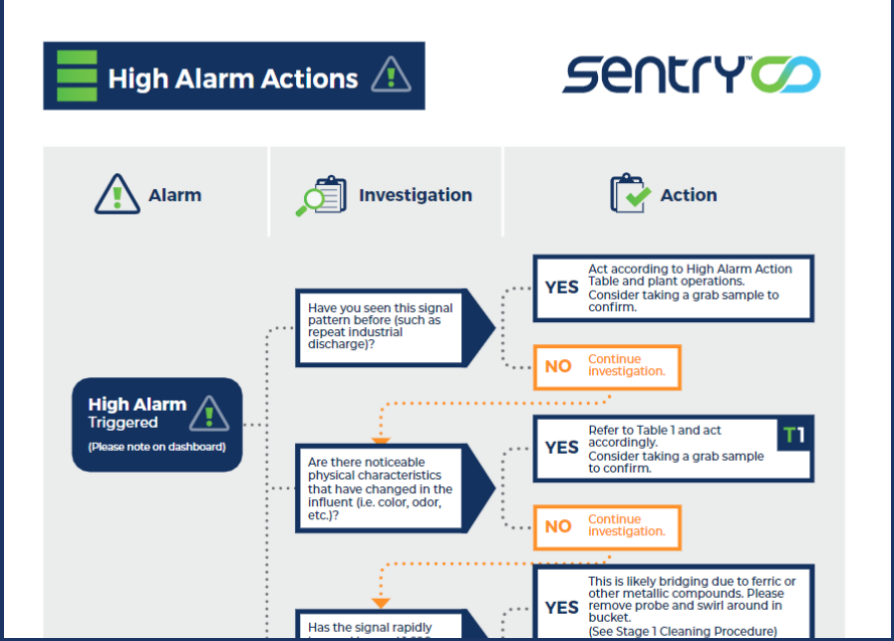
Cause: Perfect storm!

Weekly leachate truck dumping

EQ tank (biocide) pump out on Wednesday

Operational Actions – SENTRY SOP

What can Frankfort do with these insights?



- Better management of oxidation ditch loading improve treatment efficienc y
- Impact of heavy rain (8mm+) – carbon dosing or HRT changes
- 5-10% improvement in airflow based on incoming loading vs. outbound

- Software as a Service business model (SaaS)
- SENTRY takes on the risk
- Zero capital costs
- All inclusive -
  - Equipment
  - Client manager
  - Customizable alerts
  - 1 client reports/year (baselining, event detection, facility stress testing)
- Minimal barrier to implementation
- Training on dashboard usage
- Technical support always available

Are biological imbalances causing you effluent issues?

(1) Any clients with WWTP effluent events
Real-time diagnosis and characterization of causation

(2) Eliminate 80% of manual process sampling
(save $20 – 30k/annum) (2x$BOD_5$ per day over 1 year = $26,000)

(3) Replace UV-vis/ISE real-time sensors
(save ~ $7k/annum on maintenance/calibration)

(4) Reduce aeration costs
(save 10 – 20% aeration)

(5) Maximize biogas production
(improve output 10 – 20%)

Thank you

sentrywatertech.com