Integrated Systems

Monitoring of Wastewater from Frozen Food Production





Objective

Process monitoring & environmental compliance

Parameters

- Nitrite
- Ortho-Phosphate
- TOC (Total Organic Carbon)

Integrated system consisting of:

- AnaShell type AS4300 insulated analytical shelter (2 m x 3 m) with lightning protection, H-AC unit, sink
- BioTector TOC analyser with compressor
- To be installed in phase two: SC controller, Phosphax sc Phosphate analyser, EZ1028 Nitrite analyser

Problem

A frozen food production site discharges wastewater into the public sewer system. Due to a high organic load, the receiving municipal wastewater treatment plant occasionally struggled to meet its permit limits. In order to avoid fines in the future both businesses cooperated on an optimisation solution to reduce organic load (phase 1) and nutrients (phase 2).

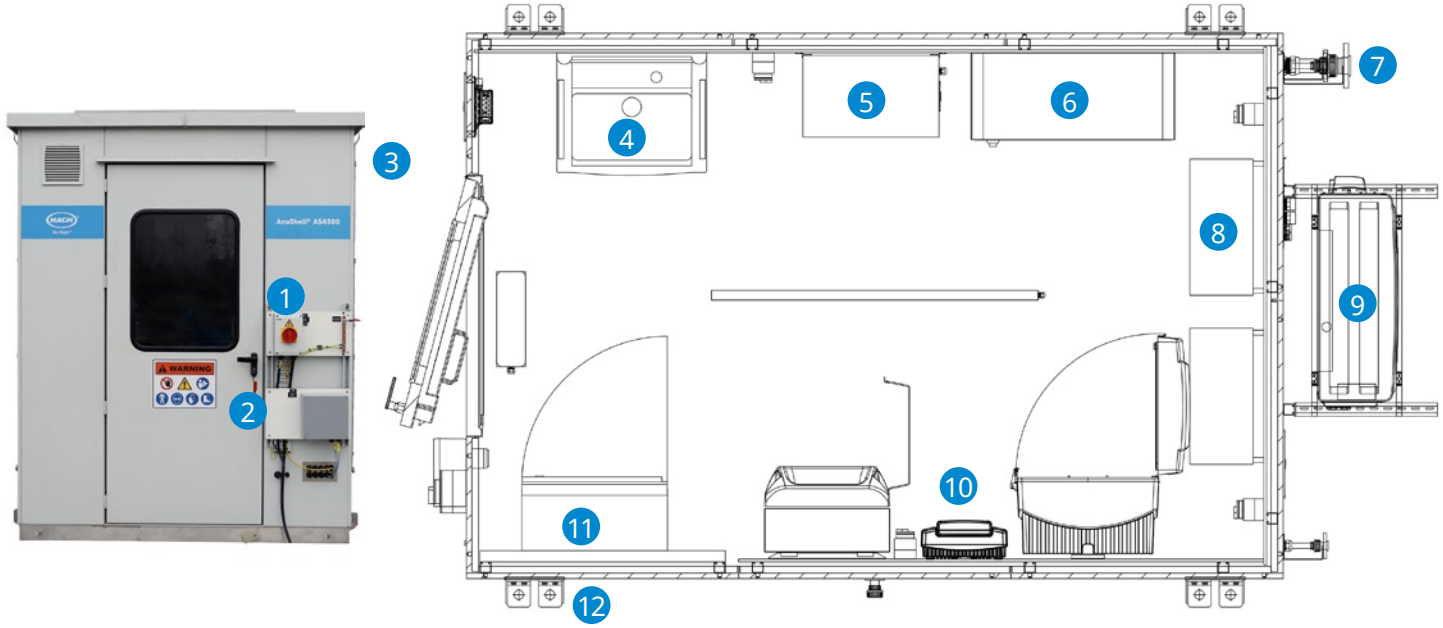
Solution

The Hach® inhouse engineering team designed a turnkey monitoring solution for the influent and effluent of the wastewater plant. A weather and corrosion resistant AnaShell analytical shelter was chosen to provide sufficient space for a TOC analyser, two additional analysers and an SC controller which will be installed later to monitor Nitrite and Phosphate. Before delivery, the entire shelter and its components underwent a factory acceptance test (FAT) to ensure instant and sustainable operational reliability on site.

Benefits

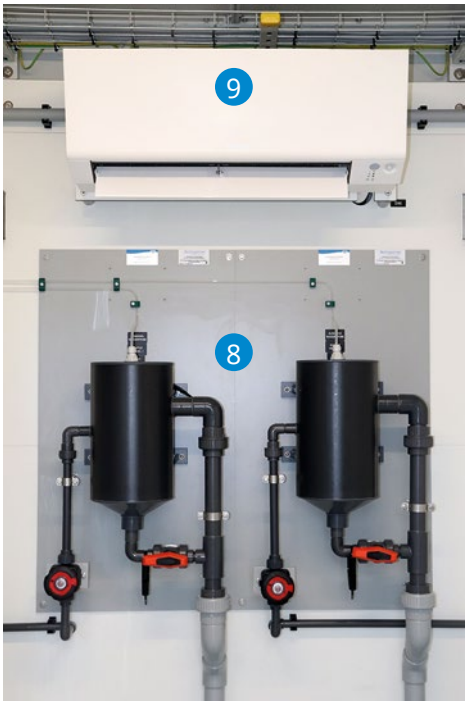
- Quick payback by avoiding future fines.
- The partners were able to conduct the project at a fixed cost, in just 10 weeks, without added strain on internal resources.
- The protected environment of the analytical shelter creates stable, laboratory-like conditions for the instruments to achieve high accuracy and uptime.

Details & Components









1 Main Power Switch, equipment grounding
2 Signal junction box
3 Lightning protection
4 Sink for hand hygiene and cleaning of equipment
5 Oilfree compressor
6 BioTector TOC analyser
7 Flange with protective stainless steel mounting bracket
8 Sample vessel
9 Air conditioning unit
10 Phase 2: additional analysers and SC controller
11 Local power distribution panel
12 Lifting / mounting bracket
13 Individual maintenance switch for every instrument