

Installation of an anaerobic and aerobic working wastewater treatment plant for a meat-processing corporation in the Caribbean



A leading corporation in the food industry in the Dominican Republic decided in 2018 to build a new wastewater treatment plant for one of their meat-producing facilities in the heart of the island.

NUMBERS & FACTS:

- Country: Dominican Republic
- Hydraulic plant capacity: 800 m³/d
- Organic Load: 3400 kg/d (COD)
- Year of construction: 2018

CONCEPTUAL FORMULATION

A well-known local producer of meat and meat products wanted to achieve his strict in-house environmental standards and decided to erect a new wastewater treatment plant. The existing treatment plant became too small and was running faulty due to production increases in the past.

The client decided in close collaboration with CUSS engineers for a procedural combination of mechanical pretreatment and anaerobic plus aerobic treatment:

High amounts of solids are removed in a first filtration step with a drum screen. In a following step, additional floating particles were separated in a **dissolved air flotation** together with **chemical coagulation and flocculation**.

The pre-screened wastewater is then pumped to the anaerobic treatment in a **Upflow Anaerobic Sludge Blanket (UASB)** reactor to degrade the majority of the dissolved organics by using granular biomass. A side product in the anaerobic process is biogas which is directly **flared off** to minimize negative impact on the environment.

The rest of the dissolved organics, nitrogen and phosphorus containing wastewater is finally treated in three **Sequencing Batch Reactors** to achieve the required threshold values.

A chlorination channel was already foreseen during the design phase due to potentially higher microbiological standards in the future. This predictive planning allows the client to reach increased standards with a minimum of additional investment costs.

Our well-experienced, multilingual supervisors were coordinating all mechanical and electrical installation together with a team of workers from our client.

The commissioning as well as the operational service over several month was performed by our competent process engineers which allowed a safe and defined start-up phase and a successful acceptance test.

WASTEWATER CONSTITUENTS:

- High organic load
- High amounts of suspended matter

PROCESS STEPS:

- Drum Screen
- Equalisation and Neutralisation
- Dissolved Air Flotation
- Anaerobic Treatment with UASB
- Aerobic Treatment with SBRs
- Chemical Dosing
- Chlorination Channel
- Aerobic Sludge Stabilisation
- Sludge Dewatering with Chamber Filter Press