Client:

Tilbury Douglas

Location:
Witney, Oxfordshire

Featured Product Range:

EnviroHub®
Water Treatment
Solutions

Successful Temporary Water Management Solution at Sewage Treatment Works.

Project Overview

Sewage Treatment Works at Witney, Oxfordshire needed to increase Flow to Full Treatment by March 2025, in order to accommodate the recent growth in population.

Part of this extensive project included building new Final Settlement Tanks (FSTs) and Primary Settlement Tanks (PSTs) at the facility, the construction of which was led by Tilbury Douglas. Significant excavation was required in order to construct the below-ground tanks.

Challenge

Due to the size and depth of the excavation, large amounts of groundwater and surface water runoff entered the area during works. Clay contaminants in the ground and geographical strata meant that, once water entered the area, it became contaminated with high levels of particulate that required treatment.

The contaminated water would also need adequate buffering capacity because, without this, oscillations in flow and load could impact the efficiency of a water treatment system in place.

The urgency of works needed meant that the site did not have sufficient time to obtain a permit from the Environmental Agency to discharge water into the nearby water course which required an alternative solution.

RVT worked closely with Tilbury Douglas to ensure all elements of water treatment and discharge were suitable, dependable, and regulatory-compliant whilst navigating the complexities that the project presented.

How Does a Full Water Treatment System Work?

1

Contaminated water is pumped up into the treatment tank and pH neutralised.

2

The dosing unit adds flocculant and coagulant to the treatment tank, automatically as required.

3

pH neutral water is pumped into the settlement tank where solids and liquids are separated.

Enquire Today

- EnviroHub® offers user-friendly functionality, reducing the pressure felt when managing water on site.
- EnviroHub® ensures compliance with environmental regulations to give you peace of mind regarding environmental protection.
- EnviroHub® boasts a fully customisable, modular design, to tailor a setup specific to your requirements.

Solution

Recognising the need for buffering capacity, RVT supplied a 40m³ holding tank to reduce oscillation of captured surface water, optimising the water treatment process via consistent load and flow to maximise the effectiveness of the recommended water management system.

RVT proposed a tailored solution including an EnviroHub® TT10 Treatment Tank paired with an EnviroHub® TU02 Chemical Dosing System to pH neutralise the contaminated water. At this point, flocculant was added on a meticulously calculated, flow-proportional basis before being pumped into the EnviroHub® HL50 Lamella Plate Settlement Tank where suspended solids were separated from the water. This strategy treated contaminated water from the excavation works whilst adhering to the following strict discharge requirements to avoid harming biomass and potentially disrupting the sewage plant's treatment capabilities:

- Flow between 35m³ - 50m³ per hour
- Total Suspended Solids of 50mg/l or less
- pH of between 6-9
- No visible oil or grease and should not have any significant effect on the receiving water body.

In the absence of a permit, stakeholders agreed to discharge treated water back into the facility under a bespoke trade effluent discharge agreement. As the PSTs were already operating near maximum capacity, RVT were tasked with discharging directly into the Activated Sludge Plant's (ASP) distribution chamber. To ensure minimum disruption to the downstream ASP's performance, water discharged from RVT's water treatment system had to be exceptionally clean and contaminant-free.

By working in collaboration with Tilbury Douglas from the early stages of the project, RVT were able to provide a bespoke water treatment solution that gave site teams peace of mind that they were compliant with environmental regulations. This allowed them to concentrate on the successful completion of the construction phase for all tanks.