

# Tight Phosphorous Delivery Programme

Location:  
Yorkshire

Client:  
Yorkshire Water



Civil Engineering

Structural  
Engineering

Building Consultancy

Geotechnical and  
Geoenvironmental  
Engineering

Project Management

Specialist services

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The purpose of the project was to make to make improvements at several sewage treatment works sites to ensure the sites comply with the latest consented limit for phosphorous concentration in the final effluent.

The proposed works comprise the construction of chemical dosing equipment, tertiary solids removal equipment and several primary settlement tanks, final settlement tanks, sludge storage tanks, humus tanks and desludging pumping stations.

## Engineering and Design Factors

The sewage treatment works which were subject to enhancement are located in North, West and East Yorkshire and were operational at the time of the intrusive ground investigation works. The specification for the ground investigations were designed by others with the intrusive investigative elements procured by Yorkshire Water.

## Description of the Works

Given the intrusive investigative works were carried out on operational sites, Alan Wood and Partners established good relationships and communication with Yorkshire Water and their agents. This was in order to ensure that specific access and operational challenges were overcome effectively, and that quality geotechnical and geo-environmental data was obtained safely and within the time constraints imposed.

Multiple investigative techniques were utilised to include cable and rotary drilling, mechanically excavated trial pitting and windowless sampling. Geotechnical and chemical laboratory analysis was undertaken on selected soil and groundwater samples in order to construct geotechnical and geo-environmental conceptual site models and subsequent risk assessments to support the design of the project.

## Core services

Geotechnical and Geoenvironmental Engineering

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## Sectors

Utilities and Infrastructure