



Client:



Contractor



Location:

Hillingdon

Bespoke Water Treatment Solution Ensured Compliance with The Environment Agency During Repairs of a Leaking Sewer

Project Overview

Sewer repairs were required for Thames Water, on a HS2 site, where the Colne Valley viaduct carries train tracks over a series of lakes and waterways at Hillingdon. The repair project was being carried out by J Browne Utilities Services, and it was due to take place over a number of weeks. There is an ever-expanding awareness of the need for sustainable environmental business practice, including in the area of water management during construction works. Bodies such as the Environment Agency have increasing powers to fine polluters, with decreasing tolerance for offenders. It was imperative that while this project took place, water was discharged responsibly.

Challenge

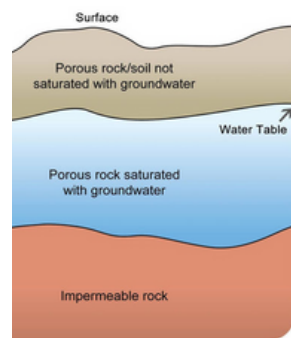
J Browne had to access a section of the leaking sewer in order to make repairs. Due to the proximity of several lakes, the excavation took them significantly below the water table, and despite the installation of a cofferdam, it required continuous dewatering at a rate of 20-30m³/h to keep the area dry.

This volume was too high to tanker off-site and it was not possible to discharge water into the foul sewer.

Water from the excavation was highly turbid as it was being pumped from the bottom of an active work area. This water needed to be treated to produce visually clear and safe water before being discharged, including reducing the pH if required.

J Browne called upon RVT Group to survey, recommend, and install a water treatment solution that would help them to meet their project timescales. It was also essential that the solution would deliver water quality that was in line with what the Environment Agency identified as the discharge parameters at this location.

Groundwater and Water Table



Water sample prior to treatment



Featured Product Range:



EnviroHub Water Treatment Solutions

Solution

After surveying the project, RVT installed a full chemical dosing system. This consisted of an agitated mix tank, dosing stand, and lamella settlement tank. The system provided flow-proportional chemical dosing and pH adjustment. The dosing skid automatically added flocculant and coagulant as required to make fine suspended solids easier to remove when discharging the water.

Silt laden contaminated water was fed into the back chamber of the Lamella Plate Settlement Tank, where it flowed around into the base of the lamella plate section of the tank. The water stream flowed upwards between the inclined Lamella plates. With the reduced flow, the solids fell to the plate surface, where it slid by gravity, down the plate, to the sludge collection chamber at the bottom. The sludge was then periodically drained using the valve at the bottom of the hopper.

Given the environmental impacts of discharging polluted water, along with the risk of associated financial and reputational damage, it is not recommended to rely on periodic manual water quality checks. So a real-time monitor was installed on site. This water monitoring unit gave the team the ability to assess water quality levels in real-time. The results could be used as evidence to show compliance should the Environment Agency request it, and it also gave the site team peace of mind that discharge water was being managed responsibly.

Photo Gallery



Lamella Plate Settlement Tank removing suspended solid particles from water (50m³ volume).



The water settlement tank is a simple but effective way of separating solids from water on site.



RVT's water treatment solution on site



Water samples before and after being treated by RVT's bespoke water treatment solution

When carrying out activities on a plot of land, including construction work, the main contractor or landowner is responsible for any water that is to be moved or discharged from the site.

EnviroHub® is easy to use, therefore reducing the burden or stress that site managers might feel when managing water on site.

The Environment Agency states that contractors must have a plan for the control and disposal of water from site, and must distinguish between excess water due to rainfall and water arising from the construction process.

EnviroHub® helps to ensure compliance with environmental regulations, giving you peace of mind that you have protected the environment.

EnviroHub® is a fully modular system, allowing RVT to create a tailored set-up for your site. Furthermore, water can be neutralised using CO₂ or chemicals.

With RVT, customers are supported throughout every step of the hire, receiving technical support and consultations whenever necessary.

RVT can perform in-house jar tests to estimate the minimum coagulant and/or flocculant dose required to achieve adequate water quality.

The EnviroHub® Monitoring Unit (MU02) is a simple way to give ultimate reassurance about the compliance of your site water.