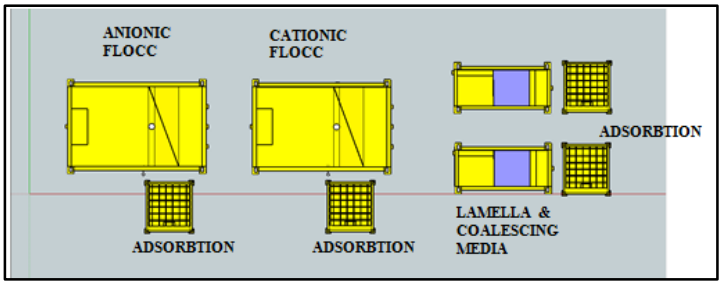
Barhale

Case Study

Client: Yorkshire Water
Project: Retford Road
Location: Catcliffe

Groundwater treatment System



Kelly Tank and Mudtech Design of the system

Water before and after the treatment process

The system developed provides an economic and environmentally responsible means of dealing with groundwater from excavations

In brief –

The Kelly Tanks & Mudtech system is a treatment system dealing with surplus contaminated groundwater from dewatering excavations. The site was previously an old colliery which has caused the ground to become contaminated due to the past industry. The water was tested and found to have a high proportion of total petroleum hydrocarbons present. The deep shaft had a large amount of contaminated water that needed to be removed to enable the works. Therefore a system was developed to clean up the water from sediment and contaminates to enable the discharge back in to the environment.

What we did –

A system was designed consisting of two large Kelly tank settlement tanks which feeds into two smaller Pump Safe Ultra 100 tanks. Anionic flocculent was used in the first tank and Cationic flocculants in the second. The use of flocculants cause the particles and impurities to clump together and improve their settling characteristics. The Pumpsafe Ultra 100's use of a combined lamella and coalescing filter media increases the effective settling area available for the solids. These units have an effective settling area of just over 100 square metres. The final effluent then flows over hydrocarbon filter pads at the end of the Pumpsafes, removing any traces of oil that remain.

Solids are removed from the tanks via valve outlets at the bottom letting the build-up of silt out. This reduces the downtime of the whole operation as timely cleaning sessions can be avoided by discharging through a Plant Nappy Sack & Frame. The Plant Nappy Sack is made of Non-woven hydrophilic polypropylene specially developed to allow for fast flowing water, whilst absorbing solids and oil residue.

Advantages –

- Saves up to 95% of costs compared to other alternative water treatment systems.
- Easy to install and operate.
- Reduces maintenance compared to similar products and does not require pumping out of sediments to clear the tanks.
- Enables dosing in proportion to the flow rate and controls the environmental impact by eliminating the overdosing disadvantage observed with similar automated systems.