NMC NOMENCA
EPWORTH STW

Vacuum wellpoint dewatering of 4no Final Settlement Tanks with settlement assessment and monitoring

Tel: 01953 454540
enquiries@stuartwells.co.uk
www.stuartwells.co.uk

Stuart Wells Limited

A temporary vacuum wellpoint dewatering system with settlement and groundwater level monitoring

The design criteria was to reduce groundwater level to enable construction of 4no Final Settlement Tanks with monitoring of settlement risk of existing structures.

An estimated distance/drawdown profile was established using a bulk permeability of k = 5.6 x 10-5 m/sec. This profile was used with a range of soil compression values to assess the risk of settlement from increased effective stress.

A temporary vacuum wellpoint system was installed at 2.0m centres around the perimeter of the bulk excavation, to the top of clay using water jetting, with a series of external groundwater monitoring points. Once bulk dewatering was achieved, the pumping method was changed to conventional sump pumping.

The dewatering system was divided into two systems each pumped by a 6" 415V piston pump. Discharge was back to the works inlet via a v-notch settlement tank and calibrated flowmeter.

Objective

Stuart Wells was contacted by the client amid concerns of subsidence due to groundwater level reduction beneath existing structures. A settlement risk assessment and a filter pack design assessment were undertaken to mitigate any risk of settlement due to loss of fines.

Solution

A temporary vacuum wellpoint dewatering system was installed around the four treatment tanks.

Settlement and groundwater level monitoring was carried out across the site.

Services	Wellpoint Dewatering
Location	Epworth, Lincolnshire
Industry	Utility
Excavation	4.7m below ground level

Tel: 01953 454540
enquiries@stuartwells.co.uk
www.stuartwells.co.uk

Stuart Wells Limited