

# Non-Technical Summary

## 1.1 Introduction

The Non-technical summary has been written to support an application for a new bespoke Environmental Permit for Whitlingham Sludge Treatment Centre (STC) (the “Site”) by Anglian Water (AWS) (‘the Operator’). In order to satisfy the requirements of the Environmental Permitting Regulations (EPR) 2016, the Operator must apply to the Environment Agency for a new Environmental Permit to consolidate the two existing waste operation permits.

## 1.2 Overview of the site and activities

Whitlingham Water Recycling Centre (WRC) and Sludge Treatment Centre (STC) is located Whitlingham Sludge Treatment Centre, Kirby Bedon Road, Trowse, Norwich, Norfolk, NR14 8TZ (NGR: TG 27880 07554). The WRC is operated under the Urban Wastewater Treatment Regulations (UWwTR) and has a standalone Water Discharge Activity Environmental Permit, this will remain an independent permitted activity. The STC operation is a non-hazardous waste activity which is currently carried out under a bespoke waste operation permit (EPR/LP3499SY). The waste activity comprises of imports, physio-chemical and anaerobic digestion (AD) treatment, and the storage of waste, all for recovery purposes. The STC handles waste derived from the wastewater treatment process indigenously produced on-site and imported wastes. The Site undertakes AD of sewage sludge from the on-site WRC and will continue this operation under a new bespoke Industrial Emissions Directive (IED) installation permit.

The Combined Heat and Power plant is also currently permitted under a waste operation permit (EPR/RP3435GB). Electricity and heat for the site are primarily provided by the combustion of biogas generated from the 2 CHP engines (1 x 1.2 MWe, 1 x 1750 kW spark ignition engines) and on-site treatment processes, and by dual fuel (biogas and gas oil) steam raising boiler providing steam to the thermal hydrolysis process (THP) plant.

AWS are applying for a variation to the existing STC waste operation permit and consolidate with the CHP waste operation permit. This will form a Bespoke Installation Permit for the STC waste activity, as a joint Environment Agency and Department for Environment, Food and Rural Affairs (DEFRA) decision has been made that AD treatment facilities at WRCs and STCs are covered by the Industrial Emissions Directive and should no longer operate as separate waste activities.

The primary permitted installation activity will be the AD treatment activity. The AD activity will treat indigenously produced sludges and imported sludges and domestic waste. Permitted Directly Associated Activities (DAAs) will be the physio-chemical treatment of sludges; the storage of sludges and cake from AD activity; the storage of biogas derived from the AD treatment of waste and the combustion of biogas in an on-site Combined Heat and Power plant (CHP). In the event the CHP cannot run in an emergency or due to operational issues, biogas will be combusted via an on-site flare stack and boiler system.

As part of the permit variation and consolidation, AWS wishes to add 2 new EWC waste codes to allow for cake to be imported onto site for treatment and/or storage before deployment to land. These codes are 19 02 06 “sludges from physico/chemical treatment other than those mentioned in 19 02 05” and 19 06 06 “digestate from anaerobic treatment of animal and vegetable waste”. The full list of EWC waste accepted at Whitlingham, and to be included on the permit, are listed in Appendix A.

Sludge is pumped through 2 submersible pumps to 3 strain presses. Screened sludge is transferred through to the centrifuges to thicken and then transferred through to the THP Cake silo which then mixes with the sludge through to the centrifuges to thicken and then transferred through to the THP Cake silo which then mixes with the cake coming across from the Cake Reception. The mix of Cake and thickened sludge is fed into the Cambi Pulper vessel which it is pre-heated. It then transfers into one of the 4 reactors where it is heated and held under pressure for the required time period before it is then transferred on to the flash tank. From here it is transferred to the Digesters where it is stored forays The IED permit will include:

- Primary Digestion Tanks (Top Storage)
- Secondary Digestion Tanks
- Gas Holder
- Digester 1, 2
- Pulper Tank
- Flash Tank
- Cambi Pressure Vessels 1, 2, 3, 4
- THP Cake Silo
- Import Cake Silo
- Cake Bunker
- Post Digestion Tank
- Gas Oil Silo
- RO Plant Salt Storage
- Waste Oil Tanks
- CHP engines 1, 2
- Contact Tank
- Thickened SAS Tank
- Liquors Tank
- SHARON Plant
- Poly Make up Silo
- Consolidation Tanks x3
- Thickened SAS Tank (Post GBT)
- Degas Tank
- Post Digestion storage tank
- Centrifuges (Duty/Duty/Standby) 1,2,3 (General thickening)
- Post Digestion 1,2,3,4 (clam press)
- Auxiliary boilers 1,2,3
- Biogas burner (flare stack)

The following are outputs from the process:

- Cake (dewatered post digestion sludge) - stored in cake bays before being shipped for use as a fertiliser;
- Bio-gas - stored in an existing gas holder, and is then either:
  - – Burnt in CHPs, for use on site with surplus exported to the grid

- – Burnt in the fired steam boiler
- – Flared in the waste biogas burner.