Non-Technical Summary

1.1 Introduction

The Non-technical summary has been written to support an application to vary the bespoke Environmental Permit for Kings Lynn 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 to vary the existing consolidated Environmental Permit waste operation permit to an installation permit.

1.2 Overview of the site and activities

Kings Lynn Water Recycling Centre (WRC) and Sludge Treatment Centre (STC) is located Kings Lynn Sludge Treatment Centre, Clockcase Lane, Clenchwarton, Kings Lynn, Norfolk, PE34 4BZ (NGR: TF 60342 22060). The WRC is operated under the Urban Wastewater Treatment Regulations (UWwTR) for the treatment of indigenous sewage sludge whereas waste imports and the STC operates under the Environmental Permitting Regulations (EPR). The STC operation is a non-hazardous waste activity which is currently carried out under a bespoke waste operation permit (EPR/DP3692SL). 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. No hazardous waste is imported or treated at Kings Lynn STC. The site has a standalone Water Discharge Activity Environmental Permit which will remain an independent permitted activity.

The Combined Heat and Power (CHP) plant is also currently permitted under the same waste operation permit (EPR/YP3234UV). Electricity and heat for the site are primarily provided by the combustion of biogas generated from the 2 CHP engines (3.303 MWth input each spark ignition engines) and on-site treatment processes, and by a 3.3 MWth input dual fuel (gas oil and biogas) steam raising boiler providing steam to the enhanced enzymic hydrolysis (EEH) plant.

AWS are applying for a variation to the existing waste operation permits into 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 CHPs 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; waste imports for treatment and storage; the storage of sludges and cake from AD activity; and the storage of biogas derived from the AD treatment of waste and 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 back-up boiler system.

As part of the permit variation, AWS wishes to add a new EWC waste code to allow for [raw cake] to be imported onto site for treatment. This code is 19 02 06 “sludges from physico/chemical treatment other than those mentioned in 19 02 05” [raw cake]. 16 10 02 also needs to be added to allow for tankered imports of cess wastes and non hazardous chemical toilet waste to the head of works

(WRC), alongside 20 03 04 which is already on the existing permit The full list of EWC waste accepted at Kings Lynn, and to be included on the permit, are listed in Appendix A.

The IED permit will include:

- 2 x Liquid Sludge Import tanks and screening
- 4 x strain presses
- 2 x pre-thickening tanks
- 4 x GBT thickeners
- 1 x pre-Monsal tank
- 6 x Monsal enhanced enzymic hydrolysis tanks (EEH) (1 unused)
- 2 x Digesters
- 1 x Post Digestion Tank
- 1 x Gas Holder
- 1 x Import Cake Reception Building including cake bunkers
- 1 x RO Plant Salt Storage
- 2 x CHP engines including waste oil tanks and waste heat recovery boiler on CHPs
- 1 x Standby fired steam boiler
- 1 x Poly storage tank
- 1 x Disinfection tank
- 1 x Sodium hydrochloride silo
- 3 x Centrifuges (Duty/assist/Standby)
- Biogas burner (flare stack)
- Cake storage

The following are outputs from the process:

- Cake (dewatered post digestion sludge) - stored in cake bays before being shipped for beneficial use in agriculture as a soil conditioner
- Bio-gas - stored in an existing gas holder, and is then either:
- Burnt in CHPs, for use on site (no export to grid)
- Burnt in the auxiliary fired steam boiler
- Flared in the waste biogas burner.