Sludge Treatment Centre Permitting

Environmental Permit Variation Application - Maple Lodge Sludge Treatment Centre

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Thames Water

EPR/FP3435LA/V005

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Contents

1. Introduction

This substantial variation application relates to a biological treatment permit for the Maple Lodge Sludge Treatment Centre (STC) located at the Maple Lodge Sewage Treatment Works (STW), operated by Thames Water Utilities Ltd (Thames Water). It is being made due to sludge treatment operations within sewage treatment works requiring a suitable Environmental Permit under the Environmental Permitting Regulations 2016 (as amended), in order to comply with the requirements of the Industrial Emissions Directive.

Previously, sewage treatment sites operated by sewerage undertakers treating indigenous sewage sludges ('sludges') separated from the main urban wastewater treatment stream at the site along with the importation of similar wastes such as cess wastes and interworks sludge and cake transfers, were regulated under the Urban Waste Water Treatment Directive (UWWTD), and Environmental Permitting Regulations as exempt or waste management activities, although some works had parts of the process, specifically biogas utilisation covered by the Environmental Permitting regime.

Now, all aspects of the sludge treatment process at the site, from the blending of separated sludge from the main aerobic treatment flow, thickening of sludge and blending with imported waste of a similar nature to indigenous sludge, anaerobic digestion, through to the storage of digested sludge cake prior to recovery to land offsite, including biogas storage and utilisation, will fall within the scope of this permit variation application.

The previous permits in place at site for the operation of combustion plant and operation of a Specified Generator / Medium Combustion Plant will be merged and remain in place as Directly Associated Activities (DAAs) to this listed process. This application is for the purposes of varying the existing permitted activities to include the anaerobic digestion process as an installation activity.

A number of other sewage treatment related activities are undertaken at the site, outside of the scope of this permit, relating to the treatment of waste waters from the sewer network through aerobic processes. These activities are covered by the UWWTD.

1.1 Non-Technical Summary

This variation application is for a bespoke installation permit for the biological treatment of sludge, by anaerobic digestion, with a capacity above the relevant thresholds. The biological treatment of sludge includes treatment of indigenous sewage sludges and Surplus Activated Sludge (SAS) from the onsite aerobic treatment process and treatment of imported sewage sludges from other sites, arriving by road to a sludge import point. The indigenous sewage sludges are generated from the aerobic treatment of both waste waters from the sewer network arriving into site at the works inlet, and, from imported waste materials, arriving by road transport into a dedicated waste import point located immediately outside of the main Sewage Treatment Works. The storage of biogas and operation of biogas fuelled Combined Heat and Power (CHP) engines and boilers for the generation of electricity and heat at the site, which is classified as an 'existing' combustion source under the Medium Combustion Plant Directive, is already permitted, and will be classified as a DAA to this main listed activity.

The Maple Lodge STC is located within the Maple Lodge STW, east of the village of Maple Cross in Hertfordshire. The River Colne is situated on the STW's northern and eastern boundary.

The STC comprises an offloading point for permitted imported wastes at the entrance to the wider STW on land owned by Thames Water. This material passes to the sewer network and is pumped to the inlet where along with other sewer derived urban waste waters, it is screened and de-gritted, then passed to the primary settlement tanks and through the aerobic treatment process under the UWWTD. Indigenous sludges derived from the main flow are then subject to thickening processes and transferred to the sludge reception tank and then the sludge blending tank. SAS from elsewhere in the sewage treatment works is also discharged into the blending tank following thickening.

Imported sludge from other works is imported to the site via a dedicated sludge logger, into the sludge reception tank before it is screened and discharged into the sludge blending tank.

Thickened blended sludge is then transferred to one of the eight primary digesters at the site. The digester tanks are of concrete construction with floating roofs that capture biogas given off by the digestion process. Following treatment over an appropriate number of days based on the sites Hazard Analysis and Critical Control Point (HACCP) plan within the primary digester, sludge is pumped to one of nine concrete secondary digester tanks. Sludge is held in these tanks for an appropriate retention time to ensure that the required level of pathogen kill is achieved in order to comply with the digested sludge cake output quality requirements.

Digested sludge is then pumped to the site conveyors where the digested sludge is dewatered and transferred by conveyor to the adjacent cake pad for storage, prior to removal from the site under the Sludge Use in Agriculture Regulations 1989 (SUiAR), and in accordance with the Biosolids Assurance Scheme (BAS). Centrate drains to the site drainage system and is returned to the works inlet for further treatment via the urban waste water treatment route.

Biogas from each floating roof joins a common biogas line, is pressurised, and transferred for use on site within the CHP engines or boilers. The biogas lines are fitted with foam traps and condensate pots which capture entrained foam and moisture for discharge to the site drainage. Biogas flares are available for use in emergency. The floating roof biogas holders are fitted with pressure relief valves as a safety precaution in the event of over pressurising of the system.

Biogas is combusted within one of the two CHP engines at the site, generated electricity is used within the site and exported to the National Grid. Heat generated by the CHP engines is used to maintain primary digester temperatures via heat exchange with auxiliary boilers available to provide additional heating as required. Boilers are dual fuelled by both biogas and fuel oil. CHP engines are classified as 'existing' combustion plant under the Medium Combustion Plant Directive. In the event there is excess biogas, i.e. more than the CHP engines or boilers can utilise, or in the event that the CHP engines or boilers are unavailable, there are two ground mounted emergency flares. These are utilised under 10% of the year or less than 876 hours per year.

Two gas oil fuelled standby generators are available at the site to provide back-up electricity in the case of failure of the grid. They operate less than 50 hours per year and are currently permitted as a 'new' Medium Combustion Plant, although they are excluded generators.

2. Technical Description

This is a substantial variation for a bespoke installation permit under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), following a change of interpretation of the UWWTD by the Environment Agency. It relates to a biological waste treatment permit for the Maple Lodge STC, located at the Maple Lodge STW, operated by Thames Water Utilities Ltd (Thames Water).

Scope

The variation application covers the biological treatment of sewage sludge, both indigenous and imported from other waste water treatment sites, by anaerobic digestion, with a capacity above the relevant thresholds. It also permits the acceptance of cess, septic tank, and similar sewage derived materials, along with chemical toilet wastes to the works inlet for processing through the UWWTD treatment route. There are a number of DAAs, including the operation of biogas fuelled CHP engines for the generation of electricity and heat at the site, which is classified as an 'existing' combustion source under the Medium Combustion Plant Directive.

The biogas CHP engines and associated boilers are covered by an existing environmental permit under number EPR/FP3435LA/V004. This permit is subject to a substantial variation to convert it to an installation permit with the CHP engines and boilers becoming a DAA to the listed activity. The site also holds a standard rules Medium Combustion Plant Directive (MCPD) environmental permit for 2 diesel generators, under permit number EPR/MB3295YC/A001 which will be combined with this permit.

Operations at the site do not fit within the requirements of the appropriate standard rules permit (SR2021 No 10) due to:

- Requirement for additional EWC codes over those in the standard rules set;
- The site being located within 10 m of a watercourse, namely the River Colne and Grand Union Canal, which are located on the site's northern and eastern boundary with the River Colne a designated Main River;
- The site sits within the boundaries of a Source Protection Zone (SPZ);
- The site being located within 50 m of a Local Wildlife Site (LWS), namely the Maple Lodge LWS and Springwell and Stocker's Lakes LWS, both located adjacent to the site; and,
- The site being located within 50 m of a Priority and Protected Habitat, namely Chalk Rivers and Deciduous Woodland, associated with the River Colne and surrounding woodland habitat.

Site Location

The Maple Lodge site is located to the east of the village of Maple Cross in Hertfordshire in a largely rural environment. The site is bounded on the north and east by the River Colne. To the south is Lynsters Lake and to the west is farmland and Maple Lodge Nature Reserve. The site is not within an Air Quality Management Area (AQMA). The nearest AQMA is more than 2.5 km to the south-west of the site.

Part of the site benefits from flood defences on the River Colne but parts of the site sit within Flood Zones 3, including one sludge tank, one decommissioned tank and some of the sludge dewatering plant from within the permitted area; these assets are subject to a 1:100 or greater annual probability of river flooding. Other areas of the site including import points, sludge thickening assets, sludge blending assets, some secondary digester tanks, boilers and standby generators are located within areas of Flood Zone 2 with between a 1:100 and 1:1000 annual probability of flooding. Primary digesters, most of the secondary digesters, the cake pad and CHP engines all sit within Flood Zone 1 meaning that there is a less than 1:1000 annual probability of flooding in these areas.

The site sits within the boundaries of a SPZ. There are parts of the site on both the northern and southern perimeters, including sludge assets, that are within a SPZ 1 Inner Protection Zone. Other parts of the site, including

sludge digestion assets, are within SPZ2 and SPZ3. The SPZ1 is connected to the permitted abstraction borehole on site.

There are a total of five designated habitat sites within the relevant distances of the site. The closest is the Old Park Wood Site of Special Scientific Interest (SSSI), which is located approximately 450 m to the South-East of the site, whilst the Mid Colne Valley SSSI is located approximately 960 m to the South of the site. There are two Local Nature Reserves (LNRs) to the North-East, with Stockers Lake approximately 720 m to the North-East and Rickmansworth Aquadrome approximately 1.5km to the North-East. Finally, there is one Special Area of Conservation (SAC), Burnham Beeches, approximately 9.8km to the South-West. There are no Special Protection Areas (SPAs), Ramsar sites or Marine Protection Areas (MPAs) within 10 km of the site and no National Nature Reserves (NNRs) within 2km of the site.

There is one area of Ancient Woodland within 2 km of the site, comprising Old Park Wood Ancient and Semi-Natural Woodland located approximately 450m to the South-East of the site.

There are six non-statutory designated LWS's within 2 km of the site, with the Maple Lodge LWS and Springwell and Stocker's Lakes LWS representing the closest LWSs to the site.

There are also records of protected species and protected habitat located within the specified screening distance of the site.

A site plan, showing the UWWTD wider sewage treatment works and the permitted area of the Maple Lodge STC can be found in Appendix A.2 while a process flow diagram summarising the sludge treatment process can be found in Appendix A.5.

Waste Activities

The STC comprises an offloading point for permitted imported wastes which can be found at the entrance to the wider STW, outside of the perimeter fence. These wastes are imported by road, normally from tankers and tanker vehicles, and consist of liquids and associated sludges from domestic and municipal sources that are similar in composition to those materials derived from the sewer network and managed via the UWWTD route. Access to the offloading point is controlled by the issue of keys by Thames Water to approved contractors only, who have undergone appropriate waste pre-acceptance checks. These keys enable the delivery tankers to discharge waste into the works, through a data logger. Waste import of non-hazardous wastes to the head of the works is considered a secondary waste operation to the main listed activity. Deliveries of waste are allowed 24-hours per day.

Imported waste material goes through the data logger at which point it falls outside of the permitted activities on site. The data logger is situated on made ground, protected from the vehicle access route by means of a bollard and barrier and the area is covered by CCTV. Vehicles discharging imported wastes are located on engineered hardstanding which is equipped with kerbing to prevent runoff and a bunded area (formed by a sleeping policeman) to contain any spillages. The area has gully drains on the vehicle exit and drainage enters the wet well to mix with incoming wastes and sewer derived materials.

Sludge Processes

The UWWTD treatment process is then followed, where the imported material passes through an inline muncher and passes through both a stone trap and screen in order to remove stones and inorganic material before entering a wet well. The imported material then joins the incoming Maple Cross sewer before all of the material is pumped via the adjacent pumping station to the works inlet via a below ground sewer to a rising main at the head of the sewage treatment works. The wet well is connected to an Odour Control Unit (OCU) to abate malodorous air generated.

At the head of the works, sewer derived materials from other pumping stations joins with the Maple Cross sewer and returns from the site drainage, passing through four screens which remove rags and other inorganic materials

that are discharged into skips for offsite disposal, passes through detritors to remove grit and then passes into the Primary Settlement Tanks (PSTs) where it is subject to aerobic treatment.

Primary sludge is removed from the PSTs and can follow two routes for thickening. The normal route is for sludge from the PSTs to be pumped through a mainly aboveground sludge pipe to one of four Picket Fence Thickeners (PFTs) via a high-level distribution chamber. The high-level distribution chamber is fitted with a sensor that monitors the level within the chamber and will inhibit the feed pumps if there is a high-level, preventing sludge exiting the chamber. Sludge gravitates from the high-level distribution chamber evenly between the four PFTs which are above ground tanks with a volume of 430 m^3 each, are of steel construction on a raised concrete base. The tanks are uncovered and fitted with level controls and can be taken out of service as required. A rotating fence moves around the inside of the tank and sludge gravitates to the bottom of the tank where it is removed and pumped via a muncher into the sludge reception tank through a partially subsurface sludge pipe. Sludge is then pumped by chopper pumps to screens that remove additional rag and inorganic material, and then the sludge passes into the Sludge Blending Tank. Sludge can also be pumped directly to the Blending Tank, if required. Liquor from the tank weirs out of the tank and gravitates via site drainage to the inlet, downstream of the storm weir and is treated through the STW.

A second route for primary sludge, used when there is excess sludge being handled, is via Sludge Buffer Tanks where sludge is sent to either the PFTs or to a drum thickener. Some sludge is pumped to a drum thickener, which is located adjacent to the Sludge Buffer Tanks, and is dewatered with the addition of a polymer (from an Integrated Bulk Container (IBC)) to aid coagulation. The liquors drain to the site drainage system where they are returned to the works for additional treatment. Dewatered sludge is pumped to the Sludge Reception Tank where it mixes with imported sludges. Dewatered sludge can also be sent directly to the Sludge Blending Tank, bypassing the sludge screens and Sludge Reception Tank. Some sludge is pumped to the PFTs with operations taking place as described above.

SAS from the aeration lanes is pumped from the Return Activated Sludge (RAS) well to a SAS tank, where the sludge is drawn off the bottom and pumped to one of three belt thickeners located within the SAS dewatering building. Liquors from the SAS tank weir over the tank and return to the RAS well. The SAS belt thickeners dewater SAS with the addition of a polymer (from an IBC) to aid coagulation; polymer is made up in a polymer silo and is pumped to each belt separately. Liquors from the process drain to a sump and are pumped back to the works for additional treatment. Dewatered SAS is pumped to the sludge blending tank where it mixes with indigenous primary sludges and imported sludge.

The permitted anaerobic digestion process begins where imported sludge, normally with a dry solid content greater than 2%, from other waste water treatment sites is imported via two import lines through a sludge logger and into the top of an Sludge Reception Tank. Inhibitors prevent the operation of the sludge logger and import valve in the event of the Reception Tank being too full. The Reception Tank has a useable volume of 525m^3, is an aboveground tank of steel construction. The Reception Tank is uncovered and not connected to any odour abatement. Sludge is then pumped through chopper pumps to screens which removes additional rag and inorganic material and then the sludge passes into the Sludge Blending Tank. Deliveries of sludge are allowed 24-hours per day.

The Sludge Blending Tank is an aboveground, uncovered tank of steel construction that receives indigenous primary sludge, SAS and imported sludge fitted with air mixing to prevent settling of sludge. It has a useable volume of 1,050m^3. Sludge is received into the top of the tank and is removed via pumps from a sump in the base of the tank. There are three pumps which transfers sludge via a subsurface pipe with one duty pump for the Primary Digester Tanks 1-4, one duty pump for Primary Digester Tanks 5-8 and one standby pump that can be configured to feed either set of digesters.

Digestion Processes

There are eight floating roof Primary Digester Tanks at Maple Cross STC with an operational digester volume of 3,407m^3 each, giving a total digester volume of 27,256m^3. There are two banks of four digesters, with Primary Digester Tanks 1-4 found adjacent to the PFTs and Primary Digester Tanks 5-8 located further south, all on unmade ground. All eight tanks are of concrete construction that extend slightly subsurface with a slightly conical base. Primary Digester Tanks 1-4 and 5-8 have a slightly different overflow mechanism but are otherwise of the same design. Sludge is pumped from the Sludge Blending Tank in turn into the bottom of each tank in turn via a subsurface sludge line, controlled by the SCADA system, to a maximum of 190m^3 of sludge per day. Sludge pumped to Primary Digester Tanks 5-8 passes above an engineered surface water channel (known as 'Flakes Channel', which was the former STW outfall) within a sludge pipeline. External heat is supplied via four heat exchanges per Primary Digester Tank in order to maintain digester temperatures, with the heat normally supplied via heat from the CHP engines but this can be supplemented by heat from auxiliary boilers, as required. There is no external insulation on the Primary Digester Tanks, however, the concrete construction makes this unnecessary. The sludge is mixed via the heat exchange and also through a mixer pump which abstracts and reinserts sludge at a mid-level on each tank. Anti-foam is dosed manually to each digester as required, from one bulk IBC. Each tank has dual Pressure Relief Valves (PRVs) fitted on the floating roof for safety reasons and monitors connected to SCADA measure the vertical height of the floating roof for the volume of biogas. After approximately 21 days residence time, digested sludge weirs out of each tank, gravitates to Pumping Station 2 and is pumped to the Secondary Digester Tanks via a subsurface sludge pipe. Sludge from Primary Digester Tanks 5-8 passes back above an engineered surface water channel in a sludge pipeline.

There are a total of 14 tanks (in two rows of seven), of which nine are routinely used as Secondary Digester Tanks, two are routinely used as Centrifuge Holding Tanks and three are not normally used. The tanks are found on unmade ground with a kerbed, tarmac service road that is equipped with drainage, running through the middle of the tanks. Sludge from Pumping Station 2 joins a subsurface ring main before being batch fed into one of the nine tanks, which is managed automatically by SCADA. Sludge enters via the bottom of the tank and each tank has an approximate volume of 2,200m^3. An ultrasonic measure at the top of the tank measures the height of the sludge and automatically inhibits further filling when a high set point is reached. Each tank has an overflow mechanism which returns sludge to the ring main. Sludge has a residence time of approximately six days and is subject to air mixing. Each tank is an aboveground, concrete tank that is unenclosed and extends slightly subsurface. Dewatering valves are present on the sides of the tanks but have been decommissioned.

After the appropriate duration to ensure the necessary level of pathogen removal, sludge is automatically discharged from the tank via gravity to tank number 5 – this is hydraulically linked with tank number 7 – and the sludge is evenly distributed between tanks numbers 5 and 7. Digested sludge is pumped from tank number 7 to the site centrifuges for dewatering.

Pumps feed sludge, via macerators, through a common line to the duty centrifuge which is manually selected by the Process Controller. There are two centrifuges which operate independently to dewater digested sludge with the use of a polymer to aid coagulation. Polymer powder is delivered by bulk tankers and blown into a 25 tonne bunded bulk polymer silo. It is then mixed with water within a mixing tank and stored in a dosing tank before being pumped to each centrifuge individually. Digested sludge cake is conveyed to the adjacent open cake pad, dropping off the conveyor and being moved by shovel loading vehicles to the far side of the cake pad as required. Centrate drains from the centrifuge to a wet well.

The cake pad is an engineered concrete pad that is enclosed on all sides by a low-level wall but open to the air. Gully drainage channels prevent run off through the vehicle entrance/exit and the pad falls towards the far side where drainage holes direct runoff to the centrate sump, where along with centrate from the two centrifuges, liquors are pumped back to the works inlet for further treatment through the aerobic process. Digested sludge cake is removed from the site by lorry and is subject to removal from site under the Sludge Use in Agriculture Regulations 1989 (SUiAR), and in accordance with the BAS. Digested sludge cake is collected from site every few days and the exiting lorries pass through a wheel wash before leaving the cake pad area and wider STW. The risk of bioaerosols from the cake pad is considered to be low due to the lack of proximity of sensitive receptors where people live or work for more than 6 hours at a time. Although there are commercial premises (a visitors building

for the TWUL owned adjacent nature reserve) and the cess/waste import point within 250 m of the cake pad, receptors will only be at these locations for short durations of time. The nearest residential receptors are over 400 m away. Anaerobic digestion of sludge takes place within a closed system, so the risk of bioaerosols from this source is low.

Biogas

Biogas is captured within the floating roofs of the primary digester tanks. The floating roofs are protected by lightning protection and equipped with pressure relief valves (PRVs) for safety that would vent to atmosphere in the event of excess pressure in the floating roof gas holders. The vertical height of the floating roof is monitored by SCADA to provide a volume of the biogas in storage within each floating roof. Biogas from each floating roof exits via draw off pipes into a common aboveground biogas pipeline from primary digester tanks 1-4 and a separate common line from primary digester tanks 5-8. The lines are fitted with foam traps and condensate traps that capture entrained foam and moisture from the generated biogas and allow it to be drained to the site drainage system for treatment through the UWWTD system. This improves the quality of the biogas and reduces impurities that could reduce the efficiency of the CHP engines.

The common lines then pass-through biogas boosters and then join together and are returned via one aboveground biogas line for use on site within either the two CHP engines or four boilers. Biogas is primarily used within the two CHP engines, which operate 24/7 dependent upon the availability of biogas. The two CHP engines are both MWM engines with a thermal input of 3.76 MWth and electrical output of 1.56 MW each. They generate electricity for use on site and also for export to the National Grid when there is excess supply. The heat generated from the CHP engines is also used and is passed via heat exchange to maintain the temperatures of the primary digester tanks. These engines are classified as 'existing' combustion plant under the Medium Combustion Plant Directive and permitted by the existing Combustion Plant Environmental Permit (EPR/FP3435LA/V004). Four other CHP engines are present on site within the powerhouse which have been decommissioned and are no longer used.

In the event of additional heating being required by the primary digesters, biogas may be used in the onsite auxiliary boilers. There are four dual fuelled boilers which can operate on both biogas and fuel oil and under normal conditions with two CHP engines running, there is not normally demand on the boilers. Fuel oil is stored within a new above ground, bunded, 50,000 litre tank that is located within a dedicated concrete bund. A new above ground, double walled fuel oil pipework delivers fuel to the boilers following an aboveground route and is fitted with a leak detection system (which works on loss of pressure) to alert site staff to an emergency fugitive emission. During winter or in the event of one CHP engine being offline, one or more boilers may also be used. All four of the boilers are Strebel RU 2S-11 models with a thermal input of 1.034 MWth each. Emissions from the two CHP engines exit via a 15m tall stack and the boilers have individual flues which share a common, 35m high stack.

Two carbon-based siloxane filters are located upstream of the CHP engines on the biogas line and operate in series to remove impurities from the biogas prior to combustion in the CHP engines.

In the event of excess biogas, due to CHP engines or boilers being unavailable or there being more biogas than the CHP engines or boilers can utilise, there are two ground mounted emergency flare which can combust biogas. The newest flare, (Biogas Flare A9) is predominantly used, when flaring is required, although there is also the option for the Process Controller to manually select a different flare. Flares are utilised under 10% of the year, less than 876 hours per year and use of flares is recorded via SCADA. There is a second bulk fuel oil tanks onsite used exclusively by the standby generators. Both oil tanks are bunded, aboveground, with aboveground fuel oil pipework delivering fuel oil to the relevant combustion asset.

An air dispersion model has previously been provided for the site. Combustion processes on the site are currently permitted and there are no changes to these units as part of this application. As such, the previous modelling remains valid, and all emission limits are unchanged.

Liquor Returns

Liquor returns from the installation are passed, via the site wide drainage system, back to the inlet of the sewage works, which is within the wider site. This sewage works is also controlled by the applicant. The wider works treats the returned liquors in a mixture with UWWTD materials, though primary settlement, an activated sludge process, and sand filtration, in order to reduce the BOD and ammonia loading on the returned liquors, prior to discharge to surface water.

Process Controls

Anaerobic digestor operations are monitored automatically from the control centre at the site and outside of normal operational hours, from the regional control centre. Checks include digester health, temperature and operation. As described, tanks are equipped with appropriate high-level alarms and automatic cut off valves to minimise the risk of overtopping. The digester tanks and gas holders are also fitted with dual pressure relief valves which operate in an emergency to minimise the risk of overtopping from over- or under-pressurisation. Site operations are covered by Thames Water's management system, including the preventative maintenance programme for the site.

A range of process parameters are subject to routine monitoring or checking to ensure that the digestion process is operating optimally so that the required sewage cake output quality is achieved.

- pH: At a conventional digestion site such as Maple Lodge the processes is maintained around pH 7 but within the range 6.72 – 7.6 (this is % dry solids and digester load dependant) for healthy operation.
- alkalinity: Levels dependant on feedstock characteristics (primary sludge: surplus activated sludge (SAS) ratio). Conventional digestion typically, 3,500 - 5,000mg/litre range.
- temperature: minimum target of 38°C. This is maintained within the range 36-40°C.
- HRT (hydraulic retention time): minimum target is 15-days, there is no upper limit. Retention times shall not be less than 12-days during plant outages to keep the product pathogen kill efficiency control.
- OLR (organic loading rate): see table below - this is dependent on the primary/SAS ratio. Maple Lodge fits into the first row of the table.
- Dry solids feed: see table below, Maple Lodge has a target of 6%DS, but this can vary between 3-8%DS and impacts the HRT.

Type of Digestion	0%- 35% SAS[x]	36%- 45% SAS	46%- 50% SAS	51%- 55% SAS	>55% SAS	Max Feed %DS
MAD* in Conventional Digestion	3	2.5	2	1.75	n/a	6
MAD after Pre-pasteurisation	4.5	4	3.5	3	n/a	7
MAD after Acid Hydrolysis	4.5	4	3.5	3	n/a	7
MAD after Thermal Hydrolysis	7	6.5	6	5.5	5.5	14

* mesophilic anaerobic digestion

[x] surplus activated sludge, arising from the UWWTD treatment route.

- VFA (volatile fatty acid) concentration: There is no specific range for VFAs as it depends on the feedstock. It is used as an indicator of digester health rather than a process control. The production of organic acids depends on the volume of solids fed to the digester. The typical range for VFAs in a primary digester is

between 50 and 800 mg/L. When VFA concentrations climb above 1000 mg/L, the digester could be overloaded or experiencing other problems.

- Ammonia - Ammonia concentrations of 50 to 1000 mg/L are beneficial, but ammonia levels of 1500 to 3000 mg/L (pH greater than 7.4) could be inhibitory but not always. An ammonia concentration higher than 3000 mg/L for prolonged period is toxic.

- VFA to Alkalinity ratio: Very important parameter to monitor for digestion process. The VFA to alkalinity ratio of below 0.4 is good and above this threshold value means diminishing alkalinity and low pH i.e. sour digester content. As long as this ratio is maintained higher VFA, and alkalinity digester content can be acceptable, and the digestion process is deemed healthy. Anaerobic digestion process is always controlled based on holistic parameters based but not based on single parameter.

BAT Considerations

A BAT gap analysis has been completed for the sludge treatment centre against the associated BAT conclusions and this gap analysis is attached as Appendix D.

The site does not have a liquor treatment plant. Liquor treatment for waste waters arising within the permitted area is part of the waste water treatment process of the STW and does not fall within the permit boundary.

Return Liquor Monitoring

There are no direct emissions to water from the STC. The only indirect emissions are of the sludge related liquors, primarily sludge dewatering liquor, and surface (rain) waters, which are returned to the wastewater treatment works for aerobic treatment under Urban Wastewater Treatment Regulations.

The liquors returned from the sludge treatment facility have originated from wastewater treatment works that are also under the control of Thames Water. Therefore, the majority of process controls and sampling are carried out upstream of the point where liquors are returned from the sludge treatment facility to the onsite wastewater treatment works. These controls being the monitoring of digestor feed volumes, temperature, together with Volatile Matter and % dry solids before and after the digestion process as well as the volume and yield of biogas produced.

There are two chemical types utilised within the biological processes at the installation, however, the precise chemicals used at a specific site will vary:

- anti-foam (added in low volumes only and not routinely at most works)

- polymer to aid cake formation

No specified substances are present within these chemicals, according the MSDS's for the compounds used at sites.

As per BAT 3 requirements, dewatering liquors, which comprise the major component of the returns, will be subject to monitoring for: Ammoniacal Nitrogen/Ammonia; Soluble BOD and Total BOD; COD; suspended solids; flow and pH on the dewatering centrate at the STC. Flow calculation based on an assessment of throughput may be used.

Thames Water are working to confirm the practicality of composite sampling for mixed returns to the inlet, from within the site drainage system; and the merits of such composite sampling with regards to returns quality, in line with BAT 3.

Sampling will be undertaken to MCERTS standards and analysed at a suitable laboratory accredited to UKAS standards, depending on the analyte.

Thames Water will record and review the data collected in order to further understand the characteristics of the returns to the head of works and any action that may be required.

Site Infrastructure

The site infrastructure is not currently fully compliant with the requirements of BAT, specifically with regards to containment and surfacing. A CIRIA 736 assessment of containment has been carried out, along with optioneering to identify potential suitable containment options in the event of a loss of primary containment. This is presented as Appendix G. A figure showing the current site surfacing within the permit boundary is included within the figures.

There are open top tanks within the permit boundary at Maple Lodge STC.

It is acknowledged that there may be emissions of biomethane and / or odour from some of these tanks, and Thames Water is preparing a monitoring exercise to determine the nature of any emissions and their quantity. Based on these outputs, the requirement for covering the tanks will be assessed on a prioritised basis, in accordance with the design of the existing tanks and HSE requirements around specialist equipment and DSEAR, in accordance with the applicability notes for BAT 14d.

As part of any tank cover design, the initial monitoring data will be necessary to determine if the correct routing of any gas from the tank headspace would be to the biogas utilisation system, to an OCU or another option. The quantification of tank emissions is needed to determine if the gas treatment assets also require upgrading, e.g. existing engine utilisation levels and gas storage system.

Due to the variability of air pressure underlying the potential release rate of gas from the tank contents, it is proposed that the monitoring exercise will consider a minimum number of sampling rounds during a 12 month period, to reflect emission levels at different ambient air temperatures and atmospheric pressures. Where multiple tanks for the same purpose are on a site (e.g. secondary digesters) it is proposed to monitor a representative tank rather than all of the same type. Where tanks utilise air mixing, sampling will take place with the air mixing in use, and also when it is off, to ensure that any emissions are correctly identified.

Monitoring will be undertaken using appropriate methodology for the nature of the tank. Being open topped, monitoring falls outside of standard Environment Agency guidance such as M1 and M2. However, it is proposed to use an area sampling technique, similar to that proposed in the M9 document for bioaerosols, through use of a 'Lindvall hood'. The canopy will be placed on the tank surface and ventilated at a known rate with clean air, with an integral chimney which can be used for extractive sampling which can be used using the 'lung' principle. This sampling will be undertaken by appropriately qualified contractors, preferably MCERTS certified.

As an illustration of the proposed technique, a minimum of two air samples will be taken from each sampling location, one for odour assessment and one for VOC measurement, at an appropriately MCERTS or UKAS accredited laboratory, as well as gas flow being measured when the sampling hood is in-situ. The measured concentrations will be assessed against UK government clean air values to determine the impact, if any, on air quality from the tank contents. These results will then feed into the design of any identified cover system to ensure that any emissions are appropriately handled.

Following site-based risk assessments, modifications to the sampling approach and/or any proposed solutions, may be required, for example, to always achieve a safe pattern of working within a DSEAR zone.

Any proposed coverings will be subject to a cost benefit analysis, based upon the Environment Agency tool.

A leak detection and repair (LDAR) plan has been prepared for the site and this is presented as Appendix H.

Please see Appendix A.6 for photographs of key plant infrastructure.

Odour

The facility has an odour management plan which is supplied as Appendix E.

Bioaerosols

Digested sludge cake at the Maple Lodge is stored on an open cake pad on the north-western side of the site, more than 250 m away from sensitive receptors, where people live or work for more than 6 hours at a time. See Appendix F for the site specific bioaerosol risk assessment.

Other Risk Assessments

There is no requirement for a fire prevention plan, due to the nature of the wastes treated at the site and the processes utilised, in accordance with Environment Agency guidance.

2.1 Regulatory listing

The installation is permitted as a Schedule 1 listed activity under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

The relevant listing under Schedule 1 is:

Section 5.4 Disposal, recovery or a mix of disposal and recovery of non-hazardous waste

Part A(1) (b); Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC—

(i) biological treatment;

The site includes the following DAAs:

- Imports of waste, including sludge from other sewage treatment works and imports of municipal liquids or sludges similar in composition to UWWTD derived materials;
- Blending of indigenous sludges and imported wastes/waste sludge prior to treatment;
- Storage of digestate prior to dewatering;
- Dewatering of digested sewage sludge;
- Transfer of dewatering liquors via site drainage back to the head of the sewage treatment works;
- Transfer of surface water run-off via site drainage back to the head of the sewage treatment works;
- Storage of dewatered digested sludge cake prior to offsite recovery;
- **Storage of biogas;**
- Transfer of biogas condensate via site drainage back to the head of the sewage treatment works;
- **Combustion of biogas (or fuel oil) in MCPD (and SG) compliant biogas CHP engines and boiler units;**
- **Combustion of fuel oil in a MCPD and SG compliant emergency standby generator (which operates less than 50 hours per annum);**
- Transfer of biogas condensate via site drainage back to the head of the sewage treatment works;
- **Storage of oil;**

- **Storage of wastes; including waste oils;**
- **Operation of siloxane filter plant;**
- **Operation of biogas flare stacks;**
- Storage of diesel;
- Storage of fuel oil; and,
- Storage of raw materials.

The waste activity at the site is:

- Imports of waste to the works inlet for treatment through the UWWTD route; and,
- Imports of digested sludge cake for temporary storage pending off-site removal.

DAAs at the installation which are in bold are currently permitted under permit EPR/FP3435LA/V004.

In addition to the listed activity at the site, there is a DAA of a biogas combustion plant which is also a specified generator, covered by the Medium Combustion Plant Directive (MCPD) under Schedule 25A and B of the Environmental Permitting (England and Wales) Regulations 2016 (as amended). The site also has two standby generators that are used for emergency purposes only that are classified as 'new' assets permitted under Medium Combustion Plant Directive and permitted by a Standard Rules Environmental Permit (SR2018 No 7 standard rules for new, low risk, stationary Medium Combustion Plant between 1 to less than 20MWth (in operation on or after 20/12/2018)), MB3295YC. This permit will be consolidated into this installation permit.

The site will also include the MCPD permitted:

- **Combustion of fuel oil in a MCPD and SG compliant emergency standby generator (which operates less than 50 hours per annum).**

This is currently permitted as a standard rules permit, EPR/MB3295YC.

Combustion of biogas or fuel oil within currently permitted combustion plant that comprises:

- 2 x 3.76 MWth CHP engines;
- 4 x 1.034 MWth boilers; and,
- 2 x 5.022 MWth emergency standby diesel generators.

The total thermal input of the site is approximately 21.7 MWth, of which approximately 11.656 MWth is in routine use.

3. Form A1 Questions

Application for an environmental permit Part A – About you

You will need to fill in this part A if you are applying for a new permit, applying to change an existing permit or surrender your permit, or want to transfer an existing permit to yourself. Please check that this is the latest version of the form available from our website.

You can apply online for Waste standard rules environmental permits, bespoke waste permits and bespoke Medium combustion plant permits

Apply online for an environmental permit.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

Note: if you believe including information on a public register would not be in the interests of national security you must enclose a letter telling us that you have told the Secretary of State. We will not include the information in the public register unless directed otherwise.

It will take less than one hour to fill in this part of the application form.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Contents

1 About you

Are you applying as an individual, an organisation of individuals (for example, a partnership), a company (this includes Limited Liability Partnerships) or a public body?

An individual	☐ Now go to section 2 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1
An organisation of individuals (for example, a partnership)	☐ Now go to section 3 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1
A public body	☐ Now go to section 4
A registered company or other corporate body	☑ Now go to section 5 and if you are applying for a new permit or transferring a permit for an installation or waste activity please also fill in Appendix 1

2 Applications from an individual

2a Please give us the following details

Name

Title (Mr, Mrs, Miss and so on) _____

First name _____

Last name _____

Now go to section 6

3 Applications from an organisation of individuals or charity

3a Type of organisation

For example, a charity, a partnership, a group of individuals or a club

3b Details of the organisation or charity

If you are an organisation of individuals, please give the details of the main representative below. If relevant, provide details of other members (please include their title Mr, Mrs and so on) on a separate sheet and tell us the document reference you have given this sheet

Contact name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Now go to question 3c or section 6

3c Details of charity

Full name of charity

This should be the full name of the legal entity not any trading name.

3d Company registration number

If you are registered with Companies House please tell us your registration number

3e Charity Commission number

If you are registered with the Charity Commission please tell us your registration number

Now go to section 6

4 Applications from public bodies

4a Type of public body

For example, NHS trust, local authority, English county council

4b Name of the public body

4c Please give us the following details of the executive

An officer of the public body authorised to sign on your behalf

Name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Position

Now go to section 6

5 Applications from companies or corporate bodies

5a Name of the company

Thames Water Utilities Limited

5b Company registration number

02366661

Date of registration (DD/MM/YYYY)

01/04/1989

If you are applying as a corporate organisation that is not a limited company, please provide evidence of your status and tell us below the reference you have given the document containing this evidence.

Document reference

n/a

5 Applications from companies or corporate bodies, continued

5c Please give details of the directors

If relevant, provide details of other directors and company secretary, if there is one, on a separate sheet and tell us the reference you have given this sheet.

Document reference: Please see application support document. Section 3.

Details of company secretary (if relevant) and director/s

Title (Mr, Mrs, Miss and so on):

First name:

Last name:

Title (Mr, Mrs, Miss and so on):

First name:

Last name:

Now go to section 6

6 Your address

6a Your main (registered office) address

For companies this is the address on record at Companies House.

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Nick

Last name: Lutt

Address: Clearwater Court
3rd Floor - East
Vastern Road
Reading

Postcode: RG1 8DB

Contact numbers, including the area code

Phone: 07747640438

Fax:

Mobile: 07747640438

Email: nick.lutt@thameswater.co.uk

For an organisation of individuals every partner needs to give us their details, including their title Mr, Mrs and so on. So, if necessary, continue on a separate sheet and tell us below the reference you have given the sheet.

Document reference: n/a

6b Main UK business address (if different from above)

Contact name

Title (Mr, Mrs, Miss and so on):

First name: n/a

Last name:

Address:

Postcode:

6 Your address, continued

Contact numbers, including the area code

Phone

Fax

Mobile

Email

Now go to section 7

7 Contact details

7a Who can we contact about your application?

It will help us if there is someone we can contact if we have any questions about your application. The person you name should have the authority to act on your behalf.

Please add a second contact on a separate sheet if this person is not always available.

Document reference of this separate sheet: n/a

This can be someone acting as a consultant or an 'agent' for you.

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Mark

Last name: McAree

Address: Jacobs UK
7th Floor, 2 Colmore Square
38 Colmore Circus, Queensway
Birmingham

Postcode: B4 6BN

Contact numbers, including the area code

Phone: 01743284846

Fax:

Mobile: 07584215085

Email: mark.mcaree@jacobs.com

7b Who can we contact about your operation (if different from question 7a)?

Contact name

Title (Mr, Mrs, Miss and so on): Mr

First name: Nick

Last name: Lutt

Address: Clearwater Court
3rd Floor - East
Vastern Road
Reading

Postcode: RG1 8DB

Contact numbers, including the area code

Phone: 07747640438

Fax:

Mobile: 07747640438

Email: nick.lutt@thameswater.co.uk

7 Contact details, continued

7c Who can we contact about your billing or invoice?

Note: Please provide the name and address that all invoices should be sent to for your subsistence fees.

As in question 7a ☐

As in question 7b ☑

Please give details below if different from question 7a or 7b.

Contact name

Title (Mr, Mrs, Miss and so on)

First name

Last name

Address

Postcode

Contact numbers, including the area code

Phone

Fax

Mobile

Email

8 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it. More information on how to do this is available at: www.gov.uk/government/organisations/environment-agency/about/complaints-procedure.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

9 Where to send your application

For how many copies to send see the guidance note on part A.

For water discharges by email to PSC-WaterQuality@environment-agency.gov.uk

For waste and installations by email to PSC@environment-agency.gov.uk

For flood risk activity permits send 1 copy only to enquiries@environment-agency.gov.uk or to the local Environment Agency office for where the work is proposed to be carried out.

Or

Permitting Support, NPS Sheffield
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Appendix 1 – Date of birth information for installation and waste activities (applications for a new permit or transferring a permit) only

Date of birth information in this appendix will not be put onto our Public Register

Are you applying as an individual, an organisation of individuals (for example, a partnership) or a company (this includes Limited Liability Partnerships)?

An individual	☐ Now go to 2
An organisation of individuals (for example, a partnership)	☐ Now go to 3
A registered company or other corporate body	☑ Now go to 4

2 Applications from an individual

Please give us the following details

Name

Date of birth (DD/MM/YY)

3 Applications from an organisation of individuals or charity

Details of the organisation or charity

If you are an organisation of individuals, please give the date of birth details of the main representative below. If relevant, provide details of other members on a separate sheet and tell us the document reference you have given this sheet.

Name

Date of birth (DD/MM/YY)

Document reference

4 Applications from companies or corporate bodies

Name of the company: Thames Water Utilities Limited

Please give the date of birth details for all directors and company secretary if there is one. If relevant, provide those details of other directors on a separate sheet and tell us the document reference you have given this sheet.

Details of company secretary (if relevant) and director/s

Name: See information provided directly to the Environment Agency

Date of birth (DD/MM/YY)

Name

Date of birth (DD/MM/YY)

Name

Date of birth (DD/MM/YY)

Document reference

Application for an environmental permit
Part C2 – General – varying a bespoke permit

Environment Agency

Fill in this part of the form, together with part A and the relevant parts of C3 to C7 and part F1 or F2, if you are applying to vary (change) the conditions or any other part of the permit. Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or changing existing ones).

Waste operation changing to installation or vice versa?

If your changes mean that a waste operation becomes an installation (or vice versa) you also need to fill in either part C3 (waste to installation) or part C4 (installation to waste).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.
2) printed off and filled in by hand. Please write clearly in the answer spaces.

It will take less than two hours to fill in this part of the application form.

Contents

1 About the permit

Note: If you are applying to convert your existing permit to a standard permit or add a standard facility you need to fill out form C1.

1a Discussions before your application

If you have had discussions with us before your application, give us the permit reference or details on a separate sheet. Tell us below the reference you have given this extra sheet.

Permit or document reference: n/a - no pre-application discussions about this application

1b Permit number

What is the permit number that this application relates to? EPR/FP3435LA/V004

1c Site details

What is the name, address and postcode of the site?

Site name: Maple Lodge Sludge Treatment Centre

Address: Maple Lodge Sewage Treatment Works
Denham Way
Maple Lodge
Rickmansworth

Postcode: WD3 9SQ

2 About your proposed changes

2a Type of variation

What type of variation are you applying for?

Minor technical ☐
Normal variation ☐
Substantial ☑

2 About your proposed changes, continued

2b Changes or additions to existing activities

Please give us brief details in the box below. More detailed information can be given in Table 1 below.

Please see application support document 'Environmental Permit Variation Application - Maple Lodge Sludge Treatment Centre'. This is a substantial variation to an existing Environmental Permit to include the biological treatment of sewage sludge and waste at a Sewage Treatment Works as the main listed activity, to meet the requirements of the Environmental Permitting Regulations (2016) as amended. The new permit will cover all aspects of biological treatment of waste at the site, from the separation of the sludge from the main aerobic treatment flow, thickening of sludge and blending with imported waste, anaerobic digestion, storage of digested sludge cake prior to offsite recovery to land, biogas storage and biogas utilisation.

Fill in Table 1 with details of all the proposed changes to current activities. In the final column of the table, give us the document reference for the proposed changes and send them to us with your filled in application form.

Fill in a separate table for each activity you are applying to vary or add. Use a separate sheet if you have a long list and send it to us with your application form. Tell us below the reference you have given this document.

Document reference: Please see Application Support Document, Chapter 4.

You only need to fill in one table for your mining waste operations.

2c Consolidating (combining) or updating existing permits

If your proposed change is to modernise (update) your permit, now answer 2c1; otherwise go to 2d.

If your proposed change is to consolidate (combine) a number of permits, now answer 2c2; otherwise go to 2d.

Note: In both cases we may require additional information from you about, for example, your management system. Therefore we would always advise you to talk to us before you submit any application to modernise or consolidate permits.

2c1 Do you want to have a modern style permit?

No ☐

Yes ☑

2c2 Identify all the permits you want to consolidate (combine) by listing the permit numbers in Table 2 below

Table 2 – Permit numbers

EPR/FP3435LA/V004 - Maple Lodge Combined Heat and Power Plant
MB3295YC - Low Risk Specified Generator / Medium Combustion Plant Standard Rules Permit

2d Treating batteries

2d Are you proposing to treat batteries?

No ☑

Yes ☐ Tell us how you will do this and send us a copy of your explanation and tell us below the reference you have given this explanation

Document reference for the explanation

2e Ship recycling

2e1 Is your activity covered by the Ship Recycling Regulations 2015? (See the guidance notes on part C2.)

No ☑

Yes ☐ Tell us how you will do this. Please send us a copy of your explanation and your facility recycling plan, and tell us below the reference numbers you have given these documents

Document reference for the explanation

Document reference for the facility recycling plan

2e2 Is this a renewal of an existing authorisation covered by the Ship Recycling Regulations 2015?

No ☑

Yes ☐ Tell us the expiry date of your existing authorisation (DD/MM/YYYY)

2 About your proposed changes, continued

Table 1 – Changes to existing activities

Fill in Table 1 with details of all the proposed changes to current activities. In the final column of the table, give us the document reference for the proposed changes and send them to us with your filled in application form.

Name	Installation schedule 1 references	Description of the installation activity	Description of waste operation	Description of the mining waste operations	Description of water discharge activity	Description of groundwater activity	Proposed changes document reference
i.e. name of installation, waste operation, mining waste operation, water discharge activity or groundwater activity							
Example – effluent unique name					Example – treated sewage effluent		
If you do not have enough room, go to the line below or send a separate document and give us the document reference here							
Maple Lodge STC	S 5.4 Part A(1) (b)(i)	Biological treatment	n/a	n/a	n/a	n/a	Application support
		by anaerobic					document
		digestion					
Maple Lodge CHP			Operation of CHP				Application support
Plant			engines and boilers				document
			now a DAA				
Maple Lodge MCP			Operation of MCPD				Application support
			standby emergency				document
			generators				

2 About your proposed changes, continued

2f Low impact installations (installations only)

2f1 Will any changes mean that any of the regulated facilities will become low impact installations?

No ☑ Now go to section 3

Yes ☐ If yes, tell us how you meet the conditions for a low impact installation (see the guidance notes on part C2 – Appendix 1)

Document reference

Tick the box to confirm you have filled in the low impact installation checklist in appendix 1 for each regulated facility ☐

3 Your ability as an operator

If you are applying to add waste installations or waste operations to a permit that has not previously had them, you need to fill in all of section 3.

If you are applying to consolidate (combine) two or more permits or have an updated permit you must fill in question 3d.

This section does not apply for applications to surrender a permit.

3a Relevant offences

Installations and waste operations only (see the guidance notes on part C2).

3a1 Have you, or any other relevant person, been convicted of any relevant offence?

No ☐ Now go to question 3b

Yes ☑ Please give details below

Name of the relevant person

Title (Mr, Mrs, Miss and so on)

First name: Please see Application Support Document, Chapter 4, Qu 3a1

Last name

Position held at the time of the offence

Name of the court where the case was dealt with

Date of the conviction (DD/MM/YY)

Offence and penalty set

Date any appeal against the conviction will be heard (DD/MM/YYYY)

If necessary, use a separate sheet to give us details of other relevant offences and tell us below the reference number you have given the extra sheet.

Document reference: Please see Application Support Document, Chapter 4, Qu 3a1

Now go to question 3b

Please also complete the details in Appendix 2.

3b Technical ability

Specified waste management activities and waste operations only (see the guidance notes on part C1).

Please indicate which of the two schemes you are using to demonstrate you are technically competent to operate your facility and the evidence you have enclosed to demonstrate this.

ESA/EU skills

I have enclosed a copy of the current Competence Management System certificate ☐

CIWM/WAMITAB scheme

Please select **one** of the following:

- I have enclosed a copy of:
  - the relevant qualification certificate/s ☑

  or
  - evidence of deemed competence ☐

  or

3 Your ability as an operator, continued

- Environment Agency assessment ☐

or

- evidence of nominated manager status under the transitional provisions for previously exempt activities ☐

and, if deemed competent or Agency-assessed, or if there is evidence of a nominated manager, or if the original qualification is over two years old:

I have enclosed a copy of the relevant current continuing competence certificate/s ☐

For each technically competent manager please give the following information. If necessary, use a separate sheet to give us these details and tell us below the document reference you have given the extra sheet.

Title (Mr, Mrs, Miss and so on) Mr

First name Daniel

Last name Scurtu

Phone Please see full details provided separately.

Mobile Please see full details provided separately.

Email Please see full details provided separately.

Please provide the environmental permit number/s and site address for **all** other waste activities that the proposed technically competent manager provides technical competence for, including permits held by other operators. Continue on a separate sheet as required.

Permit number	Site address	Postcode

Document reference

Now go to question 3c

Please also complete the details in Appendix 2.

3c Finances

Installations, waste operations and mining waste operations only (see the guidance notes on part C2).

Please note that if you knowingly or carelessly make a statement that is false or misleading to help you get an environmental permit (for yourself or anyone else), you may be committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

Do you or any relevant person or a company in which you were a relevant person have current or past bankruptcy or insolvency proceedings against you?

No ☑

Yes ☐ Please give details below, including the required set-up costs (including infrastructure), maintenance and clean up costs for the proposed facility against which a credit check may be assessed

We may want to contact a credit reference agency for a report about your business's finances.

3 Your ability as an operator, continued

Landfill, Category A mining waste facilities and mining waste facilities for hazardous waste only

How do you plan to make financial provision (to operate a landfill or a mining waste facility you need to show us that you are financially capable of meeting the obligations of closure and aftercare)?

Renewable bonds ☐

Cash deposits with the Environment Agency ☐

Other – provide comprehensive details ☐

Document reference

Provide a cost profile and expenditure plan of your estimated costs throughout the aftercare period of your site.

Document plan reference

Now go to question 3d

3d Management systems

You must have an effective, written management system in place that identifies and reduces the risk of pollution. You may show this by using a certified scheme or your own system.

Your permit requires you (as the operator) to ensure that you manage and operate your activities in accordance with a written management system.

You need to be able to explain what happens at each site and which parts of the overall management system apply. For example, at some sites you may need to show you are carrying out additional measures to prevent pollution because they are nearer to sensitive locations than others.

You can find guidance on management systems on our website at www.gov.uk/government/organisations/environment-agency.

Tick this box to confirm that you have read the guidance and that your management system will meet our requirements ☑

What management system will you provide for your regulated facility?

ISO 14001 ☐

BS 8555 (Phases 1–5) ☐

Acorn ☐

Green dragon ☐

Own management system ☑

Please make sure you send us a summary of your management system with your application.

Document reference/s: Please see Application Support Document, Chapter 4.

4 Consultation

Fill in 4a to 4c for installations and waste operations and 4d for installations only.

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker?

No ☐

Yes ☑ Please name the sewerage undertaker: Controlled and operated by Thames Water Utilities Limited.

4b A harbour managed by a harbour authority?

No ☑

Yes ☐ Please name the harbour authority

4c Directly into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries committee?

No ☑

Yes ☐ Please name the fisheries committee

4 Consultation, continued

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

No ☑

Yes ☐

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards Regulations 2015, or a safety report is needed under regulation 7 of those Regulations?

No ☐

Yes ☑

5 Supporting information

5a Provide a plan or plans for the site

See the guidance notes on part C2 for what needs to be marked on the plan.

Clearly mark the site boundary or discharge point, or both. Also include site drainage plans, site layout plans, and plant design drawings/process flow diagrams (as required). (See the guidance notes on part C2.)

Document reference/s of the plans: Please see Application Support Document, Appendix A.

5b Do any of the variations you plan to make need extra land to be included in the permit?

No ☐

Yes ☑ Please provide a site report for the extra land

Document report reference/s: Please see Application Support Document, Appendix C.

5c Provide a non-technical summary of your application

Document reference of the summary: Please see Application Support Document, Chapter 1.

5d Risk of fire from sites storing combustible waste

Are you applying for an activity that includes the storage of combustible wastes?

(This applies to all activities excluding standalone water and groundwater discharges.)

No ☑ Go to question 5f

Yes ☐ Go to question 5e

5e Will your variation increase the risk of a fire occurring or increase the environmental risk if a fire occurs?

See the guidance notes on part C2.

No ☐

Yes ☐ Provide a fire prevention plan. You need to highlight any changes you have made since your pre-application discussions

Document reference of the plan:

5f Adding an installation

If you are applying to add an installation, tick the box to confirm that you have sent in a baseline report and provide a reference ☑

Document reference of the report: Please see Application Support Document, Appendix C.

6 Environmental risk assessment

If you need one, see the guidance notes on part C2.

Provide an assessment of any additional risks the proposed changes or additions to your regulated facilities poses to the environment as part of your application to vary this permit. The risk assessment must follow the methodology set out in 'Risk assessments for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit or an equivalent method.

Document reference for the assessment: Please see Application Support Document, Chapter 4.

7 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

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How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendix 1.

Appendix 1 – Low impact installation checklist

Installation reference				
Condition	Response			Do you meet this?
A – Management techniques	Provide references to show how your application meets A			Yes ☐ No ☐
	References			
B – Aqueous waste	Effluent created		m^3/day	Yes ☐ No ☐
C – Abatement systems	Provide references to show how your application meets C			Yes ☐ No ☐
	References			
D – Groundwater	Do you plan to release any hazardous substances or non-hazardous pollutants into the ground?		Yes ☐ No ☐	Yes ☐ No ☐
E – Producing waste	Hazardous waste		Tonnes per year	Yes ☐ No ☐
	Non-hazardous waste		Tonnes per year	
F – Using energy	Peak energy consumption		MW	Yes ☐ No ☐
G – Preventing accidents	Do you have appropriate measures to prevent spills and major releases of liquids? (See 'How to comply'.)		Yes ☐ No ☐	Yes ☐ No ☐
	Provide references to show how your application meets G			
	References			
H – Noise	Provide references to show how your application meets H			Yes ☐ No ☐
	References			
I – Emissions of polluting substances	Provide references to show how your application meets I			Yes ☐ No ☐
	References			
J – Odours	Provide references to show how your application meets J			Yes ☐ No ☐
	References			
K – History of keeping to the regulations	Say here whether you have been involved in any enforcement action as described in Compliance History Appendix 1 explanatory notes		Yes ☐ No ☐	

Appendix 2 – Date of birth information for Relevant offences and/or Technical ability questions only

Date of birth information in this appendix will not be put onto our Public Register

Have you filled in the Relevant Offences question?

Yes ☑

No ☐

Have you filled in the Technical ability question?

Yes ☑

No ☐

2 Relevant Offences - date of birth information

Please give us the following details

Name: n/a

Date of birth (DD/MM/YY):

3 Technical ability - date of birth information

Name: Mr Daniel Scurtu

Date of birth (DD/MM/YY): 07/07/84

Application for an environmental permit
Part C3 – Variation to a bespoke installation permit

Environment Agency

Fill in this part of the form, together with part A, part C2 and part F1, if you are applying to vary (change) the conditions or any other part of the permit.

Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that go with it.

The form can be:

1) saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.
2) printed off and filled in by hand. Please write clearly in the answer spaces.

It will take less than three hours to fill in this part of the application form.

Contents

1 What activities are you applying to vary?

Fill in Table 1a below with details of all the activities listed in schedule 1 or other references (see note 1) of the Environmental Permitting Regulations (EPR) and all directly associated activities (DAAs) (in separate rows), that you propose to vary.

Note: if you want to add a Medium Combustion Plant or Specified Generator (MCP/SG) to your installation please use part C2.5 instead. If you want to vary an intensive farm permit please use part C3.5 instead.

Fill in a separate table for each installation you are applying to vary. Use a separate sheet if you have a long list and send it to us with your application form. Tell us below the reference you have given the document.

Document reference: Please see Application Support Document, Chapter 5, Qu1

1 What activities are you applying to vary?, continued

Table 1a – Types of activities

Schedule 1 listed activities						
Installation name	Schedule 1 or other references (See note 1)	Description of the activity (See note 2)	Activity capacity (See note 3)	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity (if this applies) (See note 3)	Non-hazardous waste treatment capacity (if this applies) (See note 3)
If there are not enough rows, send a separate document and give the document reference number here	Put your main activity first			For installations that take waste only	For installations that take waste only	For installations that take waste only
Please see Application Support						
Document, Chapter 5,						
Table C3 - 1a.						
Directly associated activities (See note 4)						
Name of DAA If there are not enough rows, send a separate document and give the document reference number here		Description of the DAA (please identify the schedule 1 activity it serves)				
		Please see Application Support Document, Chapter 5, Table C3 - 1a for all DAAs.				
For installations that take waste (See note 5 below)		Total storage capacity				
		Annual throughput (tonnes each year)				

1 What activities are you applying to vary?, continued

Notes

1. Quote the section number, part A1 or A2 or B, then paragraph and sub paragraph number as shown in EPR part 2 of schedule 1.
2. Use the description from schedule 1 of EPR. Include any extra detail that you think would help to accurately describe what you want to do.
3. By 'capacity', we mean:

- the total incineration capacity (tonnes every hour) for waste incinerators
- the total landfill capacity (cubic metres) for landfills
- the total capacity (cubic metres) for the recovery of hazardous waste on land
- the total treatment capacity (tonnes each day) for waste treatment operations
- the total storage capacity (tonnes) for waste storage operations
- the processing and production capacity for manufacturing operations, or
- the thermal input capacity for combustion activities

4. Fill this in as a separate line and give an accurate description of any other activities associated with your schedule 1 activities. You cannot have Directly Associated Activities (DAAs) as part of a mobile plant application.
5. By 'total storage capacity', we mean the maximum amount of waste, in tonnes, you store on the site at any one time.

Types of waste accepted

For those installations that take waste, for each line in Table 1a (including DAAs), fill in a separate document to list those wastes you will accept on to the site for that activity. Give the List of Wastes catalogue code and description (see https://www.gov.uk/government/publications/waste-classification-technical-guidance).

If you need to exclude waste from your activity or facility by restricting the description, quantity, physical nature, hazardous properties, composition or characteristic of the waste, include these in the document. Send it to us with your application form.

Please provide the reference for each document.

You can use Table 1b as a template.

If you want to accept any waste with a code ending in *99*, you must provide more information and a full description of the waste in the document, (for example, detailing the source, nature and composition of the waste). Where you only want to receive specific wastes within a waste code you can provide further details of the waste you want to receive. Where a waste is dual coded you should use both codes for the waste.

Document reference of this extra information: Application Support Document, Chapter 5, Table C3 - 1b.

1 What activities are you applying to vary?, continued

Table 1b – Template example – types of waste accepted and restrictions

Waste code	Description of the waste
Example	Example
02 01 08*	Agrochemical waste containing hazardous substances
18 01 03*	Infectious clinical waste, not contaminated with chemicals or medicines – human healthcare (may contain sharps) for alternative treatment
17 05 03*/17 06 05*	Non-hazardous soil from construction or demolition contaminated with fragments of asbestos cement sheet

1c Recovery of hazardous waste on land

Are you applying for a waste recovery activity involving the permanent deposit of inorganic hazardous waste on land for construction or land reclamation?

No ☑ Now go to question 2

Yes ☐

Have you written a waste recovery plan (WRP) that shows that you will use waste to perform the same function as non waste materials you would have used?

No You must write a WRP to support your application.

Yes

Have we advised you during pre-application discussions that we believe the activity is waste recovery?

No

Yes

Have there been any changes to your proposal since the discussions?

No

Yes

Please send us a copy of your current waste recovery plan that complies with our guidance at https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits. You need to highlight any changes you may have made since your pre-application discussions.

Document reference

Please note that there is an additional charge for the assessment or re assessment of a waste recovery plan that must be submitted as part of this application. For the charge see https://www.gov.uk/government/publications/environmental-permitting-charges-guidance/environmental-permitting-charges-guidance

2 Point source emissions to air, water and land

Fill in Table 2 below with details of the point source emissions that result from the operating techniques at each of your installations.

Fill in one table for each installation, continuing on a separate sheet if necessary.

Table 2 – Emissions (releases)

Installation name	Maple Lodge Sludge Treatment Centre			
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity	Unit
See Application Support Document				
Chapter 5, Table C3 - 2a.				
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity	Unit
None.				
Point source emissions to sewers, effluent treatment plants or other transfers off site				
Emission point reference and location	Source	Parameter	Quantity	Unit
See Application Support Document				
Chapter 5, Table C3 - 2b.				
Point source emissions to land				
Emission point reference and location	Source	Parameter	Quantity	Unit
None.				

You will also need to complete application form part C6 if your variation includes changing or adding a point source emission(s) to:

- water
- groundwater or
- sewer

Supporting information

3 Operating techniques

3a Technical standards

Fill in Table 3a for each activity at the installation you refer to in Table 1a above and list the 'Best Available Techniques' you are planning to use. If you use the standards set out in the relevant BAT conclusion(s), BAT reference document(s) (BREF) and/or technical guidance(s) (TGN) there is no need to justify using them within your documents in Table 3a.

For Part A(2) activities refer to https://www.gov.uk/government/collections/integrated-pollution-prevention-and-control-sector-guidance-notes and for Part B and Schedule 14 activities see https://www.gov.uk/government/collections/local-air-pollution-prevention-and-control-lappc-process-guidance-notes

You must justify your decisions in a separate document if:

- there is no technical standard
- the technical guidance provides a choice of standards, or
- you plan to use another standard

This justification could include a reference to the Environmental Risk Assessment provided in part C2 (general bespoke permit) of the application form.

For each of the activities listed in Table 1a, the documents in Table 3a should summarise:

- the operations undertaken
- the measures you will use to control the emissions from your process, as identified in your risk assessment or the relevant BAT conclusions, BREF or technical guidance
- how you will meet other standards set out in the relevant BAT conclusions document, BREF or technical guidance

Table 3 – Technical standards

Fill in a separate table for each activity at the installation.

Installation name	Maple Lodge Sludge Treatment Centre	
Description of the schedule 1 activity or directly associated activity	Best available technique (BATC, BREF or TGN reference) (see footnote below)	Document reference (if appropriate)
Anaerobic Digestion plant S5.4A1(b)(i)	Will be updated as and when the EA guidance is issued	
Storage of waste (DAA)	Will be updated as and when the EA guidance is issued	
Spark ignition gas engines and emergency flare (DAA)	LFTGN08: Guidance for Monitoring Landfill Gas Engine Emissions	

* Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)

In all cases, describe the type of facility or operation you are applying for and provide site infrastructure plans, location plans and process flow diagrams or block diagrams to help describe the operations and processes undertaken. Give the document references you use for each plan, diagram and description.

Document reference: Please see Application Support Document, Appendix A.

3a1 Does your permit (in Table 1.2 Operating Techniques or similar table in the permit) have references to any of your own documents or parts of documents submitted as part of a previous application for this site?

No ☐ Now go to 3b

Yes ☑ Please tell us in a separate document what document references are no longer valid or have been superseded and why

Please also tell us below the reference number you have given the document and send it in with your application

Document reference: See Application Support Document, Chapter 5, Qu3a1.

3b General requirements

Fill in a separate Table 4 for each installation.

Table 4 – General requirements

Name of the installation	Maple Lodge Sludge Treatment Centre
If the technical guidance or your risk assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them	Document reference or references Application Support Doc, Ch 5, Q3b.
Where the technical guidance or your risk assessment shows that odours are an important issue, send us your odour management plan	Document reference or references Application Support Doc, Ch 5, Q3b.
If the technical guidance or your risk assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)	Document reference or references Application Support Doc, Ch 5, Q3b.

For guidance on risk assessments for your environmental permit see https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

3c Types and amounts of raw materials

Fill in Table 5 for all schedule 1 activities. Fill in a separate table for each installation.

Table 5 – Types and amounts of raw materials

Name of the installation		Maple Lodge Sludge Treatment Centre		
Capacity (See note 1 below)				
Schedule 1 activity	Description of raw material and composition	Maximum amount (tonnes) (See note 2 below)	Annual throughput (tonnes each year)	Description of the use of the raw material including any main hazards (include safety data sheets)
See Application Support Document,				
Chapter 5, Table C3 - 3c.				

Notes

1 By 'capacity', we mean the total storage capacity (tonnes) or total treatment capacity (tonnes each day).

2 By 'maximum amount', we mean the maximum amount of raw materials on the site at any one time.

Use a separate sheet if you have a long list of raw materials, and send it to us with your application form. Please also provide the reference of this extra sheet.

Document reference: See Application Support Document, Ch 5, Table C3 - 3c.

3d Information for specific sectors

For some of the sectors, we need more information to be able to set appropriate conditions in the permit. This is as well as the information you may provide in sections 5, 6 and 7. For those activities listed below, you must answer the questions in the related document.

Table 6 – Questions for specific sectors

Sector	Appendix
Combustion	See the questions in appendix 1
Chemicals	See the questions in appendix 2
Incinerating waste	See the questions in appendix 3
Landfill and recovery of hazardous waste on land	See the questions in appendix 4

General information

Complete section 4 if you are proposing to change or add an emission point(s).

4 Monitoring

4a Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

You should also describe any environmental monitoring. Tell us:

- how often you use these measures
- the methods you use
- the procedures you follow to assess the measures

Document reference: See Application Support Document, Chapter 5, Qu4a.

4b Point source emissions to air only

4b1 Has the sampling location been designed to meet BS EN 15259 clause 6.2 and 6.3?

No ☑
Yes ☐

4b2 Are the sample ports large enough for monitoring equipment and positioned in accordance with section 6 and appendix A of BS EN 15259?

No ☑
Yes ☐

4b3 Is access adjacent to the ports large enough to provide sufficient working area, support and clearance for a sample team to work safely with their equipment throughout the duration of the test?

No ☑
Yes ☐

4b4 Are the sample location(s) at least 5 HD from the stack exit

No ☑
Yes ☐

4b5 Are the sample location(s) at least 2 HD upstream from any bend or obstruction?

No ☑
Yes ☐

4b6 Are the sample location(s) at least 5 HD downstream from any bend or obstruction?

No ☑
Yes ☐

4b7 Does the sample plane have a constant cross sectional area?

No ☑
Yes ☐

4b8 If horizontal, is the duct square or rectangular (unless it is less than or equal to 0.35 m in diameter)

No ☑
Yes ☐

4b9 If you have answered 'No' to any of the questions 4b1 to 4b8 above, provide an assessment to how the standards in BS EN 15259 will be met.

Document reference of the assessment: See Application Support Document, Chapter 5, Qu 4b9.

5 Environmental impact assessment

5a Have your proposals been the subject of an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment] (EIA)?

No ☑ Now go to question 6

Yes ☐ Please provide a copy of the environmental statement and, if the procedure has been completed:

- a copy of the planning permission
- the committee report and decision on the EIA

Document reference of the copy

6 Resource efficiency and climate change

If the site is a landfill or a recovery of hazardous waste on land activity, you only need to fill in this section if the application includes gas engines.

6a Describe the basic measures for improving how energy efficient your activities are

Document reference of the description: See Application Support Document, Chapter 5, Qu6a.

6b Provide a breakdown of any changes to the energy your activities use up and create

Document reference of the description: See Application Support Document, Chapter 5, Qu6b.

6c Have you entered into, or will you enter into, a climate change levy agreement?

No ☑ Describe the specific measures you use for improving your energy efficiency

Document reference of the description: See Application Support Document, Chapter 5, Qu6c.

Yes ☐ Please give the date you entered (or the date you expect to enter) into the agreement (DD/MM/YYYY)

Please also provide documents that prove you are taking part in the agreement.

Document reference of the proof

6d Explain and justify the raw and other materials, other substances and water that you will use

Document reference of the justification: See Application Support Document, Chapter 5, Qu6d.

6e Describe how you avoid producing waste in line with Council Directive 2008/98/EC on waste

If you produce waste, describe how you recover it. If it is technically and financially impossible to recover the waste, describe how you dispose of it while avoiding or reducing any effect it has on the environment.

Document reference of the description: See Application Support Document, Chapter 5, Qu6e.

7 How to contact us

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How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

Crystal Mark 19107
Clarity approved by Plain English Campaign

For Environment Agency use only

Date received (DD/MM/YYYY)

Payment received?

No ☐

Yes ☐ Amount received

Our reference number

£

Plain English Campaign's Crystal Mark does not apply to appendices 1 to 4.

Appendix 1 – Specific questions for the combustion sector

1 Identify the type of fuel burned in your combustion units (including when your units are started up, shut down and run as normal). If your units are dual fuelled (that is, use two types of fuel), list both the fuels you use

Fill in a separate table for each installation.

Installation reference			
Type of fuel	When run as normal	When started up	When shut down
Coal	☐	☐	☐
Gas oil	☐	☐	☐
Heavy fuel oil	☐	☐	☐
Natural gas	☐	☐	☐
WID waste	☐	☐	☐
Biomass (see notes 1 and 2 below)	☐	☐	☐
Biomass (see notes 1 and 2 below)	☐	☐	☐
Biomass (see notes 1 and 2 below)	☐	☐	☐
Biomass (see notes 1 and 2 below)	☐	☐	☐
Biomass (see notes 1 and 2 below)	☐	☐	☐
Landfill gas	☐	☐	☐
Other	☐	☐	☐

Notes

1. Not covered by Industrial Emissions Directive 2010/75/EU.
2. 'Biomass' is referred to The Renewables Obligation Order 2002 (https://www.legislation.gov.uk/uksi/2002/914/contents/made)

Give extra information if it helps to explain the fuel you use.

Document reference

Appendix 1 – Specific questions for the combustion sector, continued

2 Give the composition range of any fuels you are currently allowed to burn in your combustion plant

Fill in a separate table for each installation, continuing on a separate sheet if necessary

Fuel use and analysis					
Installation reference					
Parameter	Unit	Fuel 1	Fuel 2	Fuel 3	Fuel 4
Maximum percentage of gross thermal input	%				
Moisture	%				
Ash	% wt/wt dry				
Sulphur	% wt/wt dry				
Chlorine	% wt/wt dry				
Arsenic	% wt/wt dry				
Cadmium	% wt/wt dry				
Carbon	% wt/wt dry				
Chromium	% wt/wt dry				
Copper	% wt/wt dry				
Hydrogen	% wt/wt dry				
Lead	% wt/wt dry				
Mercury	% wt/wt dry				
Nickel	% wt/wt dry				
Nitrogen	% wt/wt dry				
Oxygen	% wt/wt dry				
Vanadium	mg/kg dry				
Zinc	mg/kg dry				
Net calorific value	MJ/kg				

Appendix 1 – Specific questions for the combustion sector, continued

3 If NOx factors are necessary for reporting purposes (that is, if you do not need to monitor emissions), please provide the factors associated with burning the relevant fuels

Fill in a separate table for each installation.

Installation reference	
Fuel	NOx factor (kgt^{-1})
Fuel 1	
Fuel 2	
Fuel 3	
Fuel 4	

Note: kgt^{-1} means kilograms of nitrogen oxides released for each tonne of fuel burned.

4 Will your combustion plant be subject to Chapter III of the Industrial Emissions Directive 2010/75/EU?

No ☐ Now fill in application form part F

Yes ☐

5 What is your plant?

an existing one ☐ A plant licensed before 1 July 1987

a new one ☐ A plant licensed on or after 1 July 1987 but before 27 November 2002, or a plant for which an application was made before 27 November 2002 and which was put into operation before 27 November 2003

a new-new one ☐ A plant for which an application was made on or after 27 November 2002 If you run more than one type of plant or a number of the same type of plant on your installation, please list them in the table below

6 If you run more than one type of plant or a number of the same type of plant on your installation, please list them in the table below

Fill in a separate table for each installation.

Installation reference	
Type of plant	Number within installation
Existing	
New	
New-new	
Gas turbine (group A)	
Gas turbine (group B)	

Appendix 1 – Specific questions for the combustion sector, continued

7 If you run an existing plant, have you submitted a declaration for the 'limited life derogation' set out in Article 33 of Chapter III of the Industrial Emissions Directive?

No ☐ Now go to question 9

Yes ☐

8 Have you subsequently withdrawn your declaration?

No ☐

Yes ☐

9 List the existing large combustion plants (LCPs) which have annual mass allowances under the National Emission Reduction Plan (NERP), and those with emission limit values (ELVs) under the LCPD

Installation reference	
LCPs under NERP	LCPs with ELVs

10 Do you meet the monitoring requirements of Chapter III of the Industrial Emissions Directive?

No ☐

Yes ☐ Document reference

11 Are you substantially refurbishing an existing installation according to the meaning given in Article 14 of the Energy Efficiency Directive?

No ☐

Yes ☐ Now go to question 12

12 Have you carried out a cost–benefit assessment (CBA) of opportunities for cogeneration (combined heat and power) or district heating under Article 14 of the Energy Efficiency Directive?

No ☐ Please provide supporting evidence of why a CBA is not required (for example, an agreement from us)

Document reference of this evidence

Yes ☐ Please submit a copy of your CBA

Document reference of the CBA

Appendix 2 – Specific questions for the chemical sector

1 Please provide a technical description of your activities

- The description should be enough to allow us to understand:
- the process
- the main plant and equipment used for each process
- all reactions, including significant side reactions (that is, the chemistry of the process)
- the material mass flows (including by products and side streams) and the temperatures and pressures in major vessels
- the all emission control systems (both hardware and management systems), for situations which could involve releasing a significant amount of emissions – particularly the main reactions and how they are controlled
- a comparison of the indicative BATs and benchmark emission levels standards: technical guidance notes (TGNs) (see https://www.gov.uk/government/collections/technical-guidance-for-regulated-industry-sectors-environmental-permitting); additional guidance 'The production of large volume organic chemicals' (EPR 4.01); 'Speciality organic chemicals sector' (EPR 4.02); 'Inorganic chemicals sector' (EPR 4.03); and best available techniques reference documents (BREFs) for the chemical sector

Document reference

2 If you are applying for a multi-purpose plant, do you have a multi-product protocol in place to control the changes?

No ☐

Yes ☐ Provide a copy of your protocol to accompany this application

Document reference

3 Does Chapter V of the Industrial Emissions Directive (IED) apply to your activities?

No ☐

Yes ☐ Fill in the following

3a List the activities which are controlled under the IED

Installation reference	
Activities	

3b Describe how the list of activities in question 3a above meets the requirements of the IED

Document reference

Appendix 3 – Specific questions for the waste incineration sector

If you are proposing to accept clinical waste, please complete your answer to question 3a 'Technical standards' with reference to relevant parts of our healthcare waste appropriate measures guidance (see https://www.gov.uk/guidance/healthcare-waste-appropriate-measures-for-permitted-facilities)

1a Do you run incineration plants as defined by Chapter IV of the Industrial Emissions Directive (IED)?

No ☐ You do not need to answer any other questions in this appendix

Yes ☐ IED applies

1b Are you subject to IED as

An incinerator? ☐

A co-incinerator? ☐

2 Do any of the installations contain more than one incineration line?

No ☐ Now go to question 4

Yes ☐

3 How many incineration lines are there within each installation?

Fill in a separate table for each installation.

Installation reference		
Number of incineration lines within the installation		
Reference identifiers for each line		

You must provide the information we ask for in questions 4, 5 and 6 below in separate documents. The information must at least include all the details set out in section 2 ('Key Issues') of S5.01 'Incineration of waste: additional guidance' (under the sub heading 'European legislation and your application for an EP Permit'). See https://www.gov.uk/government/collections/technical-guidance-for-regulated-industry-sectors-environmental-permitting.

You must answer questions 7 to 13 on the form below.

4 Describe how the plant is designed, equipped and will be run to make sure it meets the requirements of IED, taking into account the categories of waste which will be incinerated

Document reference

5 Describe how the heat created during the incineration and co-incineration process is recovered as far as possible (for example, through combined heat and power, creating process steam or district heating)

Document reference

Appendix 3 – Specific questions for the waste incineration sector, continued

6 Describe how you will limit the amount and harmful effects of residues and describe how they will be recycled where this is appropriate

Document reference

For each line identified in question 3, answer questions 7 to 13 below

Question 3 identifier, if necessary

7 Do you want to take advantage of the Article 45 (1)(f) allowance (see below) if the particulates, CO or TOC continuous emission monitors (CEM) fail?

No ☐

Yes ☐ This allows 'abnormal operation' of the incineration plant under certain circumstances when the CEM for releases to air have failed. Annex VI, Part 3(2) sets maximum half hourly average release levels for particulates (150 mg/m3), CO (normal ELV) and TOC (normal ELV) during abnormal operation.

Describe the other system you use to show you keep to the requirements of Article 13(4) (for example, using another CEM, providing a portable CEM to insert if the main CEM fails, and so on).

8 Do you want to replace continuous HF emission monitoring with periodic hydrogen fluoride (HF) emission monitoring by relying on continuous hydrogen chloride (HCl) monitoring as allowed by IED Annex VI, Part 6 (2.3)?

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you control hydrogen chloride and keep it to a level below the HCl ELVs.

No ☐

Yes ☐ Please give your reasons for doing this

Appendix 3 – Specific questions for the waste incineration sector, continued

9 Do you want to replace continuous water vapour monitoring with pre-analysis drying of exhaust gas samples, as allowed by IED Annex VI, Part 6 (2.4)?

Under this you do not have to continuously monitor the amount of water vapour in the air released if the sampled exhaust gas is dried before the emissions are analysed.

No ☐

Yes ☐ Please give your reasons for doing this

10 Do you want to replace continuous hydrogen chloride (HCl) emission monitoring with periodic HCl emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for hydrogen chloride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give your reasons for doing this

Appendix 3 – Specific questions for the waste incineration sector, continued

11 Do you want to replace continuous HF emission monitoring with periodic HF emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give your reasons for doing this

12 Do you want to replace continuous SO_2 emission monitoring with periodic sulphur dioxide (SO_2) emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?

Under this you do not have to continuously monitor emissions for sulphur dioxide if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give your reasons for doing this

Appendix 3 – Specific questions for the waste incineration sector, continued

13 If your plant uses fluidised bed technology, do you want to apply for a derogation of the CO WID ELV to a maximum of 100 mg/m³ as an hourly average, as allowed by IED Annex VI, Part 3?

No ☐

Does not apply ☐

Yes ☐ Please give your reasons for doing this

14 Are you substantially refurbishing an existing installation according to the meaning given in Article 14 of the Energy Efficiency Directive?

No ☐

Yes ☐ Please go to question 15

Document reference of the CHP-ready assessment

15 Have you carried out a cost–benefit assessment (CBA) of opportunities for cogeneration (combined heat and power) or district heating under Article 14 of the Energy Efficiency Directive?

No ☐ Please provide supporting evidence of why a CBA is not required (for example, an agreement from us)

Document reference of this evidence

Yes ☐ Please submit a copy of your CBA

Document reference of the CBA

Appendix 4 – Specific questions for the landfill sector and recovery of hazardous waste on land activities

1. For the landfill sector, provide your Environmental Setting and Installation Design (ESID) report and any other risk assessments to control emissions.

For recovery of hazardous waste on land activities, provide your Environmental Setting and Site Design (ESSD) report and any other risk assessments to control emissions

Document reference

2. For recovery of hazardous waste on land activities, provide your Waste Acceptance Procedures (including Waste Acceptance Criteria)

Document reference

Refer to our guidance at
https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-acceptance-procedures-for-deposit-for-recovery

3. Provide your hydrogeological risk assessment (HRA) for the site

Document reference

4. Provide your outline engineering plan for the site

Document reference

5. Provide your stability risk assessment (SRA) for the site

Document reference

6. Provide your landfill gas risk assessment (LFGRA) for the site

Document reference

We have developed guidance on these assessments and their reports which can be found at
https://www.gov.uk/government/collections/environmental-permitting-landfill-sector-technical-guidance

7. For recovery of hazardous waste on land activities, have you completed a monitoring plan for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Document reference of this evidence

Yes ☐ Document reference

8. Have you completed a proposed plan for closing the site and your procedures for looking after the site once it has closed?

No ☐ If you have answered 'no' for recovery of hazardous waste on land activities, refer to the section of your ESSD that explains why this is unnecessary for your site

Document reference of this evidence

Yes ☐ For landfill you must provide a closure and aftercare plan

Document reference

Application for an environmental permit Part C4 – Varying a bespoke waste operation permit

Environment Agency

Fill in this part of the form, together with parts A, C2 and F1, if you are applying to vary (change) the conditions or any other part of the permit. Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.
2) printed off and filled in by hand. Please write clearly in the answer spaces.

It will take less than three hours to fill in this part of the application form.

Contents

1 What waste operations are you applying to vary?

Fill in Table 1a with details of what you are applying to vary.

Fill in a separate table for each waste operation you are applying to vary. Use a separate sheet if you have a long list and send it to us with your application form. Tell us below the reference you have given this document.

Document reference: Please see Application Support Doc, Chapter 5, Table C3-1b.

Types of waste accepted

For each line in Table 1a, fill in a separate document to list those wastes you will accept on the site for that operation, giving the List of Wastes catalogue code (search for 'Technical guidance on how to assess and classify waste' at www.gov.uk/government/organisations/environment-agency). If you need to exclude waste from your activity or facility by restricting the description, quantity, physical nature, hazardous properties, composition or characteristic of the waste, include these in the document. Send it to us with your application form.

1 What waste operations are you applying to vary?, continued

Table 1a – Waste operations which do not form part of an installation

Name of the waste operation	Description of the waste operation	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity (if this applies) (See note 1)	Non-hazardous waste treatment capacity (if this applies) (See note 1)
Add extra rows if you need them. If you do not have enough room, go to the line below or send a separate document and give us the document reference here	Use the description from the guidance. Include any extra detail that you think would help to accurately describe what you want to do			
Please see Application Support Document, Chapter 5 and Table C3-1a.				
For all waste operations	Total storage capacity (see note 2)		0.00	
	New total if varying to increase		0.00	
	Annual throughput (tonnes each year)		0.00	
	New total if varying to increase		0.00	

1 What waste operations are you applying to vary?, continued

Notes

1 By 'capacity', we mean:

- the total landfill capacity (cubic metres) for landfills
- the total treatment capacity (tonnes each day) for waste treatment
- the total storage capacity (tonnes) for waste-storage operations

2 By 'total storage capacity', we mean the maximum amount of waste in tonnes you store on the site at any one time.

Please provide the document reference. You can use Table 1b as a template.

If you want to accept any waste with a code ending in 99, you must provide more information and a full description of the waste in the document, (for example, detailing the source, nature and composition of the waste). Where you only want to receive specific wastes within a waste code you can provide further details of the waste you want to receive. Where a waste is dual coded you should use both codes for the waste.

Document reference: Please see Application Support Doc, Chapter 5, Table C3-1b.

Table 1b – Template example – types of waste accepted and restrictions

Waste code	Description of the waste
Example	Example
02 01 08*	Agrochemical waste containing hazardous substances
18 01 03*	Infectious clinical waste, not contaminated with chemicals or medicines – human healthcare (may contain sharps) for alternative treatment
17 05 03*/17 06 05*	Non-hazardous soil from construction or demolition contaminated with fragments of asbestos cement sheet

1c Deposit for recovery purposes (see the guidance notes on part C4)

Are you applying for a waste recovery activity involving the permanent deposit on waste on land for construction or land reclamation (including landfill restoration)?

No ☑ Go to section 2

Yes ☐

Are you applying for an inert landfill permit that includes a restoration activity using waste?

No ☐ Go to section 2

Yes ☐ Please send us a copy of your restoration plan in accordance with our guidance at https://www.gov.uk/guidance/landfill-operators-environmental-permits/restore-your-landfill-site

Have we advised you during pre-application discussions that we believe the activity is waste recovery?

No ☐ Go to section 2

Yes ☐

Have there been any changes to your proposal since the discussions?

No ☐

Yes ☐

Please send us a copy of your waste recovery plan that complies with our guidance at https://www.gov.uk/guidance/waste-recovery-plans-and-permits. You need to highlight any changes you have made since your pre-application discussions. Also give us the reference number of the document with your justification.

Please note that there is an additional charge for the assessment of a waste recovery plan that must be submitted as part of this application. For the charge see https://www.gov.uk/topic/environmental-management/environmental-permits.

Document reference

2 Point source emissions to air, water and land

Fill in Table 2 below with details of the point source emissions that result from the operating techniques at each of your waste operations.

Fill in one table for each waste facility.

Table 2 – Emissions

Name of the waste operation	Maple Lodge Sludge Treatment Centre			
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity	Unit
Please see Application Support Document				
and responses to Part C3 - Maple Lodge STC				
Table C3-2a				
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity	Unit
None				
Please see Application Support Document				
Point source emissions to sewers, effluent treatment plants or other transfers off site				
Emission point reference and location	Source	Parameter	Quantity	Unit
Please see Application Support Document				
and responses to Part C3 - Maple Lodge STC				
Table C3-2b				
Point source emissions to land				
Emission point reference and location	Source	Parameter	Quantity	Unit
None				
Please see Application Support Document				

Supporting information

3 Operating techniques

3a Technical standards

Fill in Table 3a for each waste operation you refer to in Table 1a above and list the 'appropriate measures' you are planning to use. If you are using the standards set out in the relevant technical guidance(s) (TGN) there is no need to justify using them within your documents in Table 3a.

You must justify your decisions in a separate document if:

- there is no technical standard
- the technical guidance provides a choice of standards, or
- you plan to use another standard

This justification could include a reference to the Environmental Risk Assessment provided in part C2 of the application form.

Table 3a should summarise:

- the operations undertaken
- the measures you will use to control the emissions from your process, as identified in your risk assessment or the relevant technical guidance
- how you will meet other standards set out in the relevant technical guidance

Table 3a – Technical standards

Fill in a separate table for each waste operation.

Waste operation		
Description of the waste operation Add extra rows if you need them	Appropriate measure (TGN reference)	Document reference (if appropriate)
Anaerobic Digestion Plant S5.4 A1 (b)(i)	Will be updated as and when the EA guidance is	
Storage of waste (DAA)	issued	
Spark ignition gas engines and emergency	LFTTGN08: Guidance for Monitoring Landfill	
flare (DAA)	Gas Engine Emissions	

In all cases, describe the type of facility or operation you are applying for and provide site infrastructure plans, location plans and process flow diagrams or block diagrams to help describe the operations and processes undertaken. Give the document references you use for each plan, diagram and description.

Document reference: Please see Application Support Document, Appendix A

3b General requirements

Fill in a separate table for each waste operation.

Table 3b – General requirements

Name of the waste operation	Maple Lodge Sludge Treatment Centre
If the technical guidance or your risk assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them	Document reference or references See response to Part C3 - Maple Lodge STC.
If the technical guidance or your risk assessment shows that odours are an important issue, send us your odour management plan. **If your activity type is listed in the guidance document 'Control and monitor emissions for your environmental permit' as needing an odour management plan, or your risk assessment shows that odours are an important issue, you need to send us your odour management plan.**	Document reference or references See response to Part C3 - Maple Lodge STC. Please see Application Support Document, Appendix E for Odour Management Plan.
If the technical guidance or your risk assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)	Document reference or references See response to Part C3 - Maple Lodge STC.

3 Operating techniques, continued

We may need to ask for management plans or risk assessments in other circumstances based on our regulatory experience. If you are unsure as to whether you need to submit a management plan with your application, please discuss this with the Environment Agency prior to submission.

Search for 'Risk assessment for your environmental permit' at www.gov.uk/government/organisations/environment-agency.

3c Information for specific sectors

For some of the sectors, we need more information to be able to set appropriate conditions in the permit. This is as well as the information you may provide in sections 5, 6 and 7. For those activities listed in Table 3c, you must answer the questions in the related document.

Table 3c – Questions for specific sectors

Sector	Appendix
Recovery to land for agricultural benefit of compost like outputs from the treatment of mixed municipal solid wastes	See the questions in appendix 1
Inert landfill and deposit of waste on land for construction, land reclamation, restoration or improvement	See the questions in appendix 2

General information

4 Monitoring

4a Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

You should also describe any environmental monitoring. Tell us:

- how often you use these measures
- the methods you use
- the procedures you follow to assess the measures

Document reference: See Application Support Doc, Ch. 5 Qu4 and Ch. 6, Qu4a

4b Point source emissions to air only

Provide an assessment of the sampling locations used to measure point source emissions to air. The assessment must use M1 (search for 'M1 sampling requirements for stack emission monitoring' at www.gov.uk/government/organisations/environment-agency).

Document reference of the assessment: See Application Support Doc, Ch. 5 Qu4 and Ch. 6, Qu4a

5 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422 549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendices 1 to 2.

Appendix 1 – Specific questions for the recovery to land for agricultural benefit of compost like outputs from the treatment of mixed municipal solid wastes

1 Please provide an accurate and reliable characterisation of your compost like outputs (CLO). This should be based on sampling and analysis of the CLO produced by the treatment (MBT) process over a 12-month period and in accordance with section 2 of TGN 6.15

Document reference

2 Please provide an agricultural benefit assessment for the use of your CLO. This should be based on section 2 of TGN 6.15 and should be signed and dated by an appropriate technical expert

Document reference

3 Please provide a site-specific risk assessment of risks to soil and food chain receptors. This should be based on Schedule 2 of TGN 6.15 and include a map with a green outline showing the boundary of the area being treated and include:

- locations where the waste will be stored and spread
- any spring, well or borehole used to supply water for domestic or food production purposes that is within 250 metres of the area being treated
- any spring, well or borehole not being used for domestic or food production purposes that is within 50 metres of the area being treated
- any European designated sites (candidate or Special Area of Conservation, proposed or Special Protections Area in England and Wales or Ramsar Site) or Sites of Special Scientific Interest (SSSI) which are within 500 metres of the place where waste is to be stored or spread
- the location of public rights of way
- any Groundwater Source Protection Zones
- surface watercourses
- any buildings or houses within 250 metres of the area being treated
- land drains within the boundary

Document reference

4 Are the technical standards and measures fully in line with those set out in section 3 of TGN 6.15?

No ☐ Provide justification for departure from TGN 6.15 and a copy of the proposed technical standards, measures or procedures

Document reference

Yes ☐

Appendix 2 – Specific questions for inert waste landfill and deposit for recovery operations

1 Please provide your Environmental Setting and Site Design (ESSD) report

Document reference

Note: You should use the Environment Agency template to help you develop an environmental setting and site design (ESSD) report.

2 Please provide your Waste Acceptance Procedures (including Waste Acceptance Criteria)

Document reference

3 Have you provided a hydrogeological risk assessment (HRA) for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

4 Have you completed an outline engineering plan for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

5 Have you provided a stability risk assessment (SRA) for your site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

Appendix 2 – Specific questions for inert waste landfill and deposit for recovery operations, continued

6 Have you completed a monitoring plan for the site?

No ☐ Please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ Document reference

7 Have you completed a plan for closing the site and procedures for looking after the site once it has closed?

No ☐ If no for deposit for recovery activities please refer to the section of your ESSD that explains why this is unnecessary for your site

Yes ☐ For inert waste landfill you must provide a closure plan

Document reference

Spreading waste to support plant growth

8a Does the activity involve the deposit of waste to create or treat a growing medium (R10 for land treatment)?

No ☐

Yes ☐

8b If you answered 'yes' to question 8a, does the R10 activity include the spreading of waste to improve the quality of the growing medium (e.g. soil conditioner to improve existing soil profile)?

No ☐

Yes ☐ Go to question 8c

8c If you have answered 'Yes' to question 8b, have you completed a benefit statement?

No ☐ Please explain why

Document reference

Yes ☐

Note: Refer to our guidance when completing your statement (including EPR 8.01, section 6).

Application for an environmental permit Part C6 – Variation to a bespoke water discharge activity or groundwater activity (point source discharge), or point source emission to water from an installation

Environment Agency

Fill in this part of the form, together with part C2 and part F1, if you are applying to vary (change) the conditions or any other part of the permit for a water discharge or groundwater activity.

Fill in this part of the form, together with parts C2, C3 and F1 if you are applying to vary or add a point source emission to water, groundwater or sewer from an installation.

Please check that this is the latest version of the form available from our website.

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

It will take less than three hours to fill in this part of the application form.

Contents

About the effluent – details and type

From the list below, choose which type of effluent you are applying for on this form and answer the questions shown in Table 1.

You must fill in a separate copy of this form and the appropriate appendix or appendices for each type of effluent you plan to discharge.

Table 1 – About the effluent

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Sewage effluent (non-water company)	1.3.3 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water from domestic household or organisation operating for charitable purposes	☐	All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.4 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater from domestic household or organisation operating for charitable purposes	☐	All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All
	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Sewage effluent (non-water company)	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)	☐	All	a, b, c, d	b, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, f	-	a, b	All	-	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)	☐	All	a, b, c, d	b, f	-	a, b	All	b, c, d, e	b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Water company WwTW treated sewage effluent	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Water company WwTW treated sewage effluent	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)	☐	All	a, b	a, f (b is optional)	-	-	All	a, b, c, d, e	a, d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	a, f (b is optional)	-	-	All	-	a, b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)	☐	All	a, b	a, f (b is optional)	-	-	All	a, b, c, d, e	a, b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Settled storm sewage	1.3.19 Combined sewer overflow	☐	All	a, b	-	a, b, c, d, f, g, h, i, j, k	-	All	-	a, b*, d*, f*	b, g, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Storm sewage	1.3.19 Combined sewer overflow	☐	All	a, b	-	a, b, c, e, f, g, h, i, j, k	-	All	-	a, b*, d*, f*	b, g, h, i	All
Emergency overflow	1.3.20 Emergency overflows	☐	All	a, b	-	a, l, m, n, o	-	All	-	a, b*, d*, f*	b, g, h, i	All
Trade and/or non-sewage – known volume	1.3.12 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume up to and including 5 m^3/day (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, d*, f*	b, f*, h, i	All
	1.3.13 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume greater than 5 m^3/day (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, d*, f*	b, d*, e*, f*, h, i	All
	1.3.14 Trade and/or non-sewage effluent discharge to surface water or groundwater requiring specific substances assessment (any volume)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, c, d*, f*	b, d*, e*, f*, h, i	All
Trade and/or non-sewage – rainfall-dependent	1.3.12 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume up to and including 5 m^3/day (not requiring specific substances assessment)	☐	All	a, b	b, e, f	-	-	All	b, c, d, e	b*, d*, f*	b, f*, h, i	All
	1.3.13 Trade and/or non-sewage effluent discharge to surface water or groundwater with a volume greater than m^3/day (not requiring specific substances assessment)	☐	All	a, b	b, e, f	-	-	All	b, c, d, e	b*, d*, f*	b, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Trade and/or non-sewage – rainfall-dependent	1.3.14 Trade and/or non-sewage effluent discharge to surface water or groundwater requiring specific substances assessment (any volume)	☐	All	a, b	b, e, f	-	-	All	b, d, e	b*, c, d*, f*	b, d*, e*, f*, h, i	All
Mixed effluent (sewage combined with trade and/or non-sewage) – known volume	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f	a, b, c, d*, e*, f*, h, i	All
	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Mixed effluent (sewage combined with trade and/or non-sewage) – known volume	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)	☐	All	a, b, c, d	b, c, f	-	a, b	All	b, c, d, e	b, c, d	a, b, c, d*, e*, f*, h, i	All
Mixed effluent (sewage combined with trade and/or non-sewage) containing rainfall-dependent effluent	1.3.5 Sewage effluent discharge with a volume up to and including 5 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.6 Sewage effluent discharge with a volume up to and including 5 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.7 Sewage effluent discharge with a volume greater than 5 m^3/day up to an including 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, f*, h, i	All
	1.3.8 Sewage effluent discharge with a volume greater than 15 m^3/day to groundwater (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Mixed effluent (sewage combined with trade and/or non-sewage) containing rainfall-dependent effluent	1.3.9 Sewage effluent discharge to groundwater requiring specific substances assessment (any volume)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	d, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.10 Sewage effluent discharge with a volume greater than 5 m^3/day up to and including 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, f*, h, i	All
	1.3.11 Sewage effluent discharge with a volume greater than 50 m^3/day to surface water (not requiring specific substances assessment)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, f*	a, b, c, d*, e*, f*, h, i	All
	1.3.11 Sewage effluent discharge to surface water requiring specific substances assessment (any volume)	☐	All	a, b	b, c, d, e, f	-	a, b	All	b, c, d, e	b*, c, f*	a, b, c, d*, e*, f*, h, i	All
Trade – returned abstracted water (including ground source heating and cooling)	1.3.15 Cooling water or thermal discharge to surface water or groundwater (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	-	All	b, c, d, e, f, g	b*, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.16 Cooling water or thermal discharge to surface water or groundwater requiring specific substances assessment	☐	All	a, b, c, d	b, c, f	-	-	All	b, c, d, e, f, g	b*, c, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.17 Aquaculture (not requiring specific substances assessment)	☐	All	a, b, c, d	b, c, f	-	-	All	b, c, d, e	b*, d*, f*	a*, b, d*, e*, f*, h, i	All
	1.3.18 Aquaculture requiring specific substances assessment	☐	All	a, b, c, d	b, c, f	-	-	All	b, c, d, e	b*, c, d*, f*	a*, b, d*, e*, f*, h, i	All

Type of effluent	Charge band	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Effluent and/or contaminated surface water run-off arising from the operation of an installation	No additional charge, as already included as part of the installation variation application charge	✔	a, b, d	c	b, c, d, f		a, b2	a, b, c	b, c, d, e, f, g	d*, e*, f	a, b, d, e, f, h, i	a, b, c

* Check the relevant question and our guidance notes on part C6 to see if you need to give an answer.

1 About the variation you are applying for

1a Give a brief description of the changes you want to make to your permit

This effluent is a mixture of waste liquors from the operation of the installation for the anaerobic treatment of separated sewage sludge. It primarily comprises of dewatering liquors returned to the work inlet following the dewatering of treated sewage sludge. Lower volume constituents will include rainfall; biogas condensate; siloxane filtrate; boiler blowdown water; contaminated run off and washdown water. The only wastes treated within the installation are sewage related, either being separated from the UWWTD flow in the wider works, or comprise of waste imports, principally of sludge from smaller satellite treatment works, with lower volumes of cess, septic tank and similar sewage related arisings delivered by third parties.

1b Give this effluent a unique name

Liquor returns

You must use this name to identify this effluent throughout this application and all associated documents.

1c Is this a release from a dam, weir or sluice ('reservoir release') under Schedule 21 of the EPR meaning of water discharge activity?

- ☐ Yes
- ☑ No

1d Have you obtained all the necessary permissions in addition to this environmental permit to be able to carry out the discharge (see C6 guidance notes for more details)?

- ☑ Yes
- ☐ No
- ☐ N/A

2 About the effluent – how long will you need to discharge the effluent for?

2a What date do you want the permit for this effluent to start?

_____ (DD/MM/YYYY)

Please note that charges will start on this date, even if you have not started to discharge, unless you contact us to change (delay) the start date (see the guidance notes on part C6). The start date cannot be before the permit is issued and cannot be changed (delayed) after it has already passed.

2b Is the discharge time limited?

- ☐ Yes Please give the date you expect the discharge to end but please note that your permit will not end on that date and you will still need to notify us to surrender the permit

_____ (DD/MM/YYYY)

- ☐ No

2c Will the discharge take place all year?

- ☑ Yes
- ☐ No Please give details of the months when you will make the discharge

_____

2d Will the discharge take place on more than six days in any year?

☐ Yes

☐ No

3 How much do you want to discharge?

3a What is the daily dry weather flow?

| | cubic metres

3b What is the maximum volume of effluent you will discharge in a day?

1,500 | cubic metres

Show how you calculated the figure given in the box below and continue on a separate sheet if necessary, giving a reference for the extra sheet

See Application Support Document, Chapter 7, Q3f.

Document reference

|

3c What is the maximum rate of discharge?

17.4 | litres a second

3d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day?

1,500 | cubic metres

3e What is the maximum rate of rainfall dependent discharge?

| litres a second

3f For each answer in question 3, show how you worked out the figure on a separate sheet

Document reference

See Application Support Document, Chapter 7, Q3f.

4 Intermittent sewage discharges

4a For each answer to b to o below, show how you worked out the figure on a separate sheet

Document reference

4b What is the total volume of the off-line/storm tank storage?

cubic metres

4c What is the total volume of on-line storage?

cubic metres

4d What is the pass forward flow at the settled storm overflow setting?

litres per second

4e What is the pass forward flow at the storm overflow setting?

litres per second

4f Is the discharge screened?

☐ Yes Answer the relevant questions from 4g to 4j

☐ No Now go to 4k

4g What is the mesh screen spacing?

millimetres

4h What is the minimum screen capacity flow through the mesh screen?

litres per second

4i What is the bar screen spacing?

millimetres

4j What is the minimum screen capacity flow through the bar screen?

litres per second

4k Is the overflow constructed to good engineering design?

☐ Yes

☐ No On a separate sheet explain what standards the overflow has been constructed to

Document reference

4l What is the emergency storage capacity of the sewer and wet well?

cubic metres

4m What is the storage time within the sewer and the wet well above the top water level at dry weather flow?

hours and minutes

4n What is the pass forward flow at the pumping station?

litres per second

4o For intermittent emergency overflows you must provide a document setting out the key protection measures you will provide

Document reference for pumping station key protection measures

5 Should your discharge be made to the foul sewer?

Foul sewer means public or private foul sewer.

Before answering these questions, you must read the guidance notes to part C6.

You will also need to contact your sewerage undertaker (usually your local water company) and you may need to check if it is possible to connect to a private foul sewer.

5a How far away is the nearest foul sewer from the boundary of the premises?

n/a metres

5b To assess whether it is reasonable to discharge your effluent into the foul sewer, please answer 5b1 or 5b2

5b1 Discharges from domestic properties

Multiply the number of properties served by the sewage treatment system by 30 metres.

Number of domestic properties served by the sewage treatment system

n/a x 30 metres =

0 metres

5b2 Discharges from all other premises including trade effluent

Divide the volume of the discharge (in cubic metres) by 0.75 and then multiply this figure by 30 metres

Volume of the discharge (answer to question 3b)

n/a cubic metres / 0.75 =

0 x 30 =

0 metres

Is your answer to question 5b1 or 5b2 above greater than the distance to the nearest foul sewer (answer to 5a)?

☑ No You do not need to explain why you cannot discharge your effluent into the foul sewer at this point. However, we may request this information from you when we determine your application. Now go to question 6.

☐ Yes You must explain on a separate sheet why you cannot discharge your effluent into the foul sewer, giving a reference for the extra sheet. Before you submit the application, you must explore the possibility of connecting to the foul sewer, and send us evidence that you have approached the sewerage undertaker, including their formal response regarding connection, if relevant. You must also show the extra cost of connecting to a sewer compared with the treatment system you propose, and details of any physical obstacles such as roads, railways, rivers or canals.

We will only agree to the use of private treatment systems within sewered areas if you can demonstrate that:

- the additional cost of connecting to the foul sewer would be unreasonable
- connection is not practically feasible, or
- the proposed private treatment system can be shown to significantly benefit the environment

We are unlikely to grant a permit for a discharge of treated domestic sewage in circumstances where a private sewerage system is being proposed due to a lack of capacity in the nearest public sewerage network.

The guidance notes to part C6 will help you understand what information you need to provide in order to answer this question.

Document reference for where you have given this justification

6 How will the effluent be treated?

6a Do you treat your effluent?

☐ Yes Now go to question 6b

☑ No You must explain why the effluent will not be treated

Document reference for where you have given this justification

See Application Support Document, Chapter 7, Q6a.

6b Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out

For installations with point source emission to water or sewer, there is no need to duplicate information already provided in part C3 form. Where this information is already provided, give the document reference and go to question 7.

Document reference

See Application Support Document, Chapter 7, Q6b.

Table 2 – Treatments carried out on your effluent

Order of treatment	Code number	Description
First		
Second		
Third		
Fourth		

Continue on a separate sheet if you need more rows. If you prefer, you can also send us an overall design for the whole treatment process.

Document reference

See Application Support Document, Chapter 7, Table 6b.

7 What will be in the effluent?

For all applications, whether to surface water, or onto or into ground, you should still check to see if your discharge is likely to contain any of the specific substances listed in the guidance documents on 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' (see https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit).

Answer the relevant questions for your discharge below.

7a Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' likely to enter the sewerage system upstream of the discharge through any authorised or known inputs?

☐ Yes

☐ No

7b Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' added to or present in the effluent as a result of the activities on the site?

☐ Yes

☑ No

7c Have any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

☐ Yes

☑ No

7d Are there any other harmful or specific substances in your effluent not mentioned in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater'?

☐ Yes

☑ No

7e If you have answered 'No' to any of questions 7a to 7d provide details on a separate sheet of how you have established that the effluent is not likely to contain specific substances.

Document reference

See Application Support Document, Chapter 7, Qu 7e.

7f What is the maximum temperature of your discharge?

20 degrees Celsius

7g What is the maximum expected temperature change compared to the incoming water supply?

0 increase in degrees Celsius

0 decrease in degrees Celsius

8 Environmental risk assessments and modelling

You may need to carry out an environmental risk assessment or modelling to support your application. Please answer all the questions that are relevant to your discharge. If an environmental risk assessment or modelling is required, you must send it to us with your application.

8a Sewer modelling report (for discharges of final effluent from a water company WwTW or intermittent sewage discharges)

You must carry out sewer modelling following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit.

Send us details of how the modelling was carried out and the outcome.

Document reference for the sewer modelling report

8b Discharges to lakes, estuaries, coastal waters or bathing waters

You must carry out modelling following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit. Send us details of how the modelling was carried out and the outcome.

Document reference for the modelling report

See Application Support Document, Chapter 7, Qu 8b.

8c Discharges to freshwater (non-tidal) rivers

If the discharge contains, or potentially contains, any specific substances, you must carry out screening following the guidance 'Surface water pollution risk assessment for your environmental permit' at https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit. The guidance notes on part C6 outline the information you must provide.

Have you answered yes to any of 7a to 7d?

☐ Yes Send us the completed screening tool, along with the raw data used to create the summary statistics

Document reference for the screening tool and raw data

☐ No

8d Discharges to groundwater

You must carry out a groundwater quantitative risk assessment following the guidance in 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit. Send us details of how the modelling was carried out and the outcome.

For groundwater remediation schemes you must send us a site-specific remediation strategy that has been agreed with the local Environment Agency Groundwater and Contaminated Land Team.

Document reference for the groundwater remediation report

See Application Support Document, Chapter 7, Qu 8d.

8e Discharges to freshwater (non-tidal) rivers from an installation, including discharges via sewer

If the discharge contains, or potentially contains, any specific substances, you must carry out screening following the guidance (see https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit). The guidance notes on part C6 outline the information you must provide.

Have you answered yes to any of 7a to 7d?

☐ Yes Send us the completed screening tool, along with the raw data used to create the summary statistics. Where the discharge is via sewer, include sewage treatment reduction factors in the calculations.

Document reference for the screening tool and raw data

See Application Support Document, Chapter 7, Qu 8e.

There is no need to duplicate information already provided in part C3 form. Where this information is already provided, give the document reference above.

8f Environmental impact assessment

Have you carried out an environmental impact assessment?

☐ Yes Send us details of how the assessment was carried out and the outcome

Document reference for the environmental impact assessment

☑ No

9 Monitoring arrangements

Note: If your effluent has a maximum volume of no more than 50 cubic metres a day you do not need to complete question 9d or 9e.

9a What is the national grid reference of the inlet sampling point? (for example, SJ 12345 67890)

See Application Support Document, Chapter 7, Qu 9a.

9b What is the national grid reference of the effluent sample point?

See Application Support Document, Chapter 7, Qu 9b.

9c Do you have an Urban Waste Water Treatment Directive final effluent sampling point?

☐ Yes Please provide the national grid reference

☐ No

9d What is the national grid reference of the flow monitoring point?

See Application Support Document, Chapter 7, Qu 9d.

9e Does the flow monitor have an MCERTS certificate?

☐ Yes Please give the certificate number

☑ No

9f Do you have a UV disinfection efficacy monitoring point?

☐ Yes Please provide the national grid reference

☑ No

9g Do you have an event duration monitoring point(s)?

☐ Yes Please provide the national grid reference

☐ No

9h You should clearly mark on the plan the locations of any of the above that apply to this effluent

Document reference for the plan

See Application Support Document, Chapter 7, Qu 9h.

9i Do you intend to do your own effluent monitoring?

☐ Yes

☐ No

10 Where will the effluent discharge to?

10a Mark in Table 3 where this effluent discharges to and fill in the relevant appendix or appendices.

You must use the name you gave to this effluent in answer to question 1b of this form when filling in your relevant appendix or appendices.

Table 3 – Where the effluent discharges to

Receiving environment		Relevant appendix
Borehole or well	☐	1
Into land (for example, through a drainage system)	☐	2
Onto land	☐	3
Tidal river, tidal stream, estuary or coastal waters	☐	4
Non-tidal river, stream or canal	☑	5
Lake or pond	☐	6

10b Is this effluent discharged through more than one outlet?

☐ Yes Give details, on a separate sheet, of the circumstances under which each outlet would be used by this effluent

Document reference

☑ No

10c If you answered yes to question 10b above make sure you show clearly on your discharge point appendix or appendices and site plan that this one effluent can discharge to more than one discharge point.

You must give us all the details we need for each of the discharge points used by this effluent.

11 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: https://www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, please tell us how we can improve it.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

- ☐ Yes please
- ☐ No thank you

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

- ☐ No
- ☐ Yes

Amount received

£

Plain English Campaign's Crystal Mark does not apply to appendices 1 to 6.

Appendix 1 – Discharges to a borehole or well (or other deep structure)

If you are discharging the effluent to a borehole or well or other deep structure (such as concrete rings, natural swallow hole or deep soakage pit) you must ensure that the discharge is indirect to groundwater. Direct discharges to groundwater cannot be permitted. We will undertake a groundwater quantitative risk assessment on your behalf in line with the guidance 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit.

For us to do this you must answer the following questions relevant to your application and provide us with additional information as summarised in Table 4.

Without this information we will be unable to complete the risk assessment and it is likely your application will be rejected.

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

1.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

1.2 Give the national grid reference of the discharge point

1.3 Is the discharge to ground via a

- ☐ Well
- ☐ Borehole
- ☐ Other deep structure Please give details (e.g. concrete ring structure, shaft, natural swallow hole, soakage pit etc.)

1.4 What is the diameter of the borehole, well or other deep structure that the effluent will be discharged into?

metres

1.5 Is the borehole, well or other structure already constructed?

- ☐ Yes Now answer questions 1.6 to 1.9
- ☐ No Now answer questions 1.10 to 1.12

Existing borehole, well or other deep structure

1.6 What is the total depth to the bottom of the existing well, borehole or other structure?

_____ metres below ground level

If you are unaware of the actual depth please estimate the depth based on the following categories:

☐ 0–5 metres

☐ 5–10 metres

☐ Greater than 10 metres

☐ Uncertain

What evidence is the estimated depth above based on?

_____

1.7 Does the well, borehole or other structure extend into groundwater?

☐ Yes – always contains water

☐ Sometimes – water is present occasionally

☐ No – never contains water

If groundwater is always, or sometimes, present, what is the highest level that the standing water reaches?

☐ Measured

_____ metres below ground level

☐ Estimated

_____ metres below ground level

1.8 Please provide any records, diagrams or borehole logs you may have that could help us understand:

- the method of construction (including any solid casings or linings used)
- the likely depth of the deep structure
- the local groundwater conditions

Please provide photocopies where possible. If it is not possible (for example, if the documents are large or bulky) please summarise any additional information you have on a separate sheet.

Document reference for the records, diagrams, or borehole logs

_____

1.9 If any maintenance has been carried out on your well, borehole or other deep structure (for example, to aid effective drainage), please give details below

Please now answer question 1.13

Proposed borehole, well or other deep structure that has not yet been constructed

1.10 Please tell us why you are unable to install a shallow engineered drainage system. This information forms an important part of our permit determination process. Which methods of shallow disposal have you considered, and why did you decide these were not feasible to take forward? Please answer questions 1.10a and 1.10b to provide the results of soakage tests and summarise in the box any relevant information supporting your decisions (for example, permission refusals from landowners or physical constraints, or land availability or proximity to buildings).

1.10a What was your percolation value (Vp) result?

⌊_____⌋ seconds per millimetre

You must show in Table 4 how you worked out the percolation value.

Table 4 – Percolation value

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

1.10b If a shallow engineered drainage system were feasible, what would be the required surface area of your infiltration system?

square metres

Supporting information to explain why you are unable to install a shallow engineered drainage system can be appended to your application.

Document reference for these details

1.11 Please tell us the type of deep structure (for example, borehole, well, deep soakage pit) you propose to install

What will the total depth be?

metres below ground level

1.12 Please tell us the reason this depth has been selected and, if you are aware of any relevant existing information on local water levels, please also tell us the depth to groundwater (in metres below ground level). What measures will you undertake to ensure the discharge is not direct into groundwater? If the discharge will be direct to groundwater explain why you cannot make it indirect. Direct discharges to groundwater cannot be permitted.

Proximity of your discharge to other receptors

1.13 Is the borehole, well or other deep structure where the discharge is being/will be made within 50 metres of any other well, spring or borehole used to supply water for drinking water or food production purposes?

☐ Yes Please show the location of the well, spring or borehole you identified in answer to question 1.13 on the plan you have provided for section 4 of the main application form. Please now answer question 1.14

☐ No Please now answer question 1.15

1.14 Please tell us about the water supply (or supplies) used for drinking water or food production purposes identified in question 1.13 above; for example, the name of the property or properties served by the water supply, what they use the water for (drinking water, food production) and where they are in relation to your discharge

1.15 What is the distance to the nearest watercourse (for example, surface water, river, stream or ditch)?

⌊_____⌋ metres

Please tell us whether you have considered discharging to surface water and why this is not feasible

In Table 5 please provide any further information required for us to complete a groundwater quantitative risk assessment on your behalf in line with the guidance 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit. Without this information we will be unable to carry out a hydrogeological risk assessment on your behalf.

Table 5 summarises the information required to allow us to undertake a hydrogeological risk assessment of your discharge to a deep infiltration system. Without this information your application will be rejected. You will already have provided some of this information earlier in this application form. We also need you to provide additional information indicated by a tick (✓) in Table 5. For further guidance on the additional information required please search for 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit and the guidance notes on part C6. You may require the advice of an environmental consultant to collate this information.

For some of the risk assessment inputs we are better placed to provide the information and will do so for those parameters indicated by an asterisk (*) as far as possible. However, if you wish to provide site-specific information for those parameters with an asterisk you are welcome to do so.

Table 5 – Further information required for the Environment Agency to complete a groundwater quantitative risk assessment on your behalf

Information	Description	Existing structure	Proposed structure	Information supplied?
Information supplied by the applicant This has already been requested earlier in the application form				Information you have already supplied on the application form
National grid reference of the discharge point		Appendix 1 Q2	Appendix 1 Q2	
Volume of effluent (m^3 per day)		Q3b	Q3b	
Type of effluent treatment	Septic tank, package treatment plant, other	Q6	Q6	
Type of deep infiltration system	Borehole, well, concrete ring structure, other	Appendix 1 Q3	Appendix 1 Q3	
Diameter of deep infiltration system (metres)		Appendix 1 Q4	Appendix 1 Q4	
Depth to the base of deep infiltration structure (metres)		Appendix 1 Q6	Appendix 1 Q11	
Depth to water table (metres)	Is discharge above or below water table?	Appendix 1 Q7, Q8	Appendix 1 Q12	
Justification for a deep infiltration system	Why are you unable to install a shallow infiltration system? What other options for disposal have been considered? Provide full details of the infiltration tests undertaken plus results	Appendix 1 Q8 if available	Appendix 1 Q10	
Information supplied by the applicant This is additional information we need from you that is not provided elsewhere on the application form. Site data should be given where it is already available. If not, you can submit the relevant literature values quoting the source of the data and justification of the values you have selected. Please tick the right-hand column to confirm you have provided this essential information.				

Information	Description	Existing structure	Proposed structure	Information supplied?
Concentration of relevant substances entering the infiltration system	For discharges of domestic effluent we will routinely assess the concentration of nitrogen species, particularly the ammonium concentration	✓	✓	☐
Length of screened borehole section below the water table (metres)	Depth in metres of the borehole screened section that is below the water table (This applies only to boreholes that have groundwater in the base)	✓	✓	☐
Calculated area of infiltration system (square metres)	Explain how the area of the infiltration system has been calculated – this is especially relevant if a non-circular system is used	✓	✓	☐
Unsaturated zone parameters	The following represent the strata above the water table: • hydraulic conductivity (metres per day) • water-filled porosity (per cent) • bulk density (grammes per cubic centimetre)	✓	✓	☐
Saturated zone parameters	The following represent the strata above the water table: • hydraulic conductivity (metres per day) • water-filled porosity (per cent) • bulk density (grammes per cubic centimetre) • hydraulic gradient of the water table (fraction)	✓	✓	☐
Information provided by the Environment Agency where possible You are free to provide this information if you wish, or in some specific cases we may need to ask for this at a later stage. Please tick if you have provided this information (optional).				

Information	Description	Existing structure	Proposed structure	Information supplied?
Environmental standard	The relevant environmental standard or compliance value against which we will assess your effluent discharge	*	*	☐
Half-life for degradation of the substance (days)	If you wish to know more about these parameters see 'Groundwater risk assessment for your environmental permit' at https://www.gov.uk/guidance/groundwater-risk-assessment-for-your-environmental-permit	*	*	☐
Soil water partition coefficient (litres per kilogramme)		*	*	☐
Mixing zone thickness (metres)		*	*	☐
Distance to compliance point (metres)		*	*	☐

Appendix 2 – Discharges into land

Answer the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

2.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

2.2 Give the national grid reference of the discharge point

2.3 Is your infiltration system new or existing?

☐ New Now go to question 2.5

☐ Existing Now go to question 2.4

2.4a When was it built?

2.4b Now answer questions 2.5–2.8 if you are able to, if not leave them blank and go to question 2.9

2.5 Is your infiltration system designed and built to British Standard 6297:2007 + A1:2008 or the British Standards in force at the time of installation?

☐ Yes

☐ No Please provide details, on a separate sheet, of the design criteria used for your infiltration system

Document reference

2.6 On what date did you carry out a percolation test and dig a trial hole in line with British Standard 6297:2007 + A1:2008?

(DD/MM/YYYY)

2.7 What is your percolation value (Vp) result?

seconds per millimetre

You must show in Table 6 how you worked out the percolation value. Please also provide your test sheets and any field notes or observations made regarding ground conditions.

Table 6 – Percolation value

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

2.8 Please show us how you have calculated the area (A) of your infiltration system

p ⌊_____⌋ x

Vp ⌊_____⌋ x

0.25 for septic tanks =

A ⌊0_____⌋ square metres

or

p ⌊_____⌋ x

Vp ⌊_____⌋ x

0.20 for package treatment plants =

A ⌊0_____⌋ square metres

p Population based on maximum occupancy

Vp Percolation value in seconds/mm

2.9 If known, mark on the plan you have provided the extent of the infiltration system. Please write on the plan the length and width of the sides in metres.

2.10 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

☐ No

☐ Yes Identify the location of the well, spring or borehole on the plan you have provided and answer question 2.11

2.11 Is the well, spring or borehole you have identified used to supply water?

☐ No

☐ Yes You must describe what the water supplied is used for

2.12 Is any part of your infiltration system within 10 metres of a watercourse?

☐ No

☐ Yes Identify the location of the watercourse on the plan you have provided for section 4 of part C2

Appendix 3 – Discharges onto land

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

3.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

3.2 Give the national grid reference of the discharge point

3.3 Select from the table below the type of area where the effluent is disposed of

Area type		
Unlined reed bed	☐	
Unlined grass plot	☐	
Unlined wetland	☐	
Other	☐	Please specify below

3.4 What is the surface area of the land used for your disposal?

square metres

3.5 Is any part of your infiltration system within 50 metres of a well, spring or borehole?

☐ No

☐ Yes Identify the location of the well, spring or borehole on the plan you have provided and answer question 3.6

3.6 Is the well, spring or borehole you have identified used to supply water?

☐ No

☐ Yes You must describe what the water supplied is used for

3.7 Is any part of your infiltration system within 10 metres of a watercourse?

☐ No

☐ Yes Identify the location of the watercourse on the plan you have provided for section 4 of part C2

Appendix 4 – Discharges to tidal river, tidal stream, estuary or coastal waters

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

4.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

4.2 Give the national grid reference of the discharge point

4.3 Give the name of the tidal river, tidal stream, estuary or area of coastal water if you know it

4.4 Is the discharge into a

- ☐ Tidal river
- ☐ Tidal stream
- ☐ An estuary
- ☐ Coastal water

4.5 Does the discharge reach the watercourse by flowing through a surface water sewer?

- ☐ Yes Give the national grid reference where the discharge enters the surface water sewer
- ☐ No

4.6 Is the discharge point above the mean low water spring tide mark?

- ☐ Yes Please explain, on a separate sheet, why the discharge cannot be made below this point

  Document reference
- ☐ No

4.7 How is the effluent dispersed?

For example, open pipe or diffuser system

If diffuser system go to question 4.8

4.8 Give details, on a separate sheet, of the design of the diffuser system

Document reference

4.9 Is the discharge made to a roadside drain or ditch?

☐ No

☐ Yes If yes, it is your responsibility to ascertain whether the relevant highways authority is responsible for the roadside drain or ditch. If it is, you need to secure the appropriate permissions from the relevant highways authority before submitting an application for an environmental permit to the Environment Agency. A copy of the written permission from the relevant highways authority must be submitted with the environmental permit application.

Document reference for the written permission from the relevant highways authority

Appendix 5 – Discharges to non-tidal river, stream or canal

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

5.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

See Application Support Document, Chapter 7, Qu A 5.1.

5.2 Give the national grid reference of the discharge point

See Application Support Document, Chapter 7, Qu A 5.2.

5.3 Give the name of the watercourse, canal or the main watercourse it is a tributary of if you know it

See Application Support Document, Chapter 7, Qu A 5.3.

5.4 Is the discharge into a

- ☑ Non-tidal river
- ☐ Stream
- ☐ Canal

5.5 Does the discharge reach the watercourse or canal by flowing through a surface water sewer?

- ☐ Yes Give the national grid reference where the discharge enters the surface water sewer
- ☑ No

5.6 Does the watercourse dry up for part of the year?

- ☑ No
- ☐ Yes How many months per year is the watercourse dry?

Do you agree to install perforated pipe work before the discharge point?

The discharge must be made via a perforated pipe. Any section of that pipe which lies within 10 metres of the bank of any watercourse shall be perforated, but this perforated section shall not extend more than 10 metres from the bank of any watercourse.

- ☐ Yes
- ☐ No

5.61 If the watercourse does dry up for part of the year can you indicate a typical period when the surface water runs dry each year – start and finish (in months)

Watercourse typically becomes dry in:

January	☐	May	☐	September	☐
February	☐	June	☐	October	☐
March	☐	July	☐	November	☐
April	☐	August	☐	December	☐

Watercourse typically flows again in:

January	☐	May	☐	September	☐
February	☐	June	☐	October	☐
March	☐	July	☐	November	☐
April	☐	August	☐	December	☐

5.6.2 If the watercourse does dry up for part of the year, how many metres downstream of the discharge is it before the discharged effluent soaks in?

5.7 Is the discharge made to a roadside drain or ditch?

☑ No

☐ Yes If yes, it is your responsibility to ascertain whether the relevant highways authority is responsible for the roadside drain or ditch. If it is, you need to secure the appropriate permissions from the relevant highways authority before submitting an application for an environmental permit to the Environment Agency. A copy of the written permission from the relevant highways authority must be submitted with the environmental permit application.

Document reference for the written permission from the relevant highways authority

Appendix 6 – Discharges to a lake or pond

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point. Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

6.1 Give the discharge point a unique name

For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

6.2 Give the national grid reference of the discharge point

6.3 Give the name of the lake or pond if you know it

6.4 Select from the following table the type of lake or pond you will be discharging to and answer the relevant questions

Type of lake or pond		Relevant questions
Lake or pond which is not connected to a river or watercourse	☐	Permit not required*
Lake or pond which is not connected to a river or watercourse, where you have had a notice served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016	☐	6.5, 6.6, 6.7
Lake or pond that discharges into a river or watercourse	☐	6.5, 6.6, 6.7

* Unless a Notice has been served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016

6.5 What is the surface area of the lake or pond?

square metres

6.6 What is the maximum depth of the lake or pond?

metres

6.7 What is the average depth of the lake or pond?

metres

Application for an environmental permit
Part F1 – Charges and declarations

Environment Agency

Fill in this part for all applications for installations, waste operations, mining waste operations, water discharges, point source groundwater discharges and groundwater discharges onto land. Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it.

The form can be:

1) **saved onto a computer and then filled in. Please note that the form follows a logic that means questions will open or stay closed depending on a previous answer. So you may not be able to enter text in some boxes.**
2) **printed off and filled in by hand. Please write clearly in the answer spaces.**

It will take less than two hours to fill in this part of the application form.

Contents

Each individual who is applying for their name to appear on the permit must complete the declaration in section 5. You will have to print a separate copy of the declaration page for each additional individual to complete.

1 Working out charges

You must fill in this section.

You have to submit an application fee with your application. You can find out the charge by searching for 'Environment Agency charging scheme and guidance: environmental permits' at www.gov.uk/government/organisations/environment-agency.

Please remember that the charges are revised on 1 April each year and that there is an annual subsistence charge to cover the costs we incur in the ongoing regulation of the permit.

Table 1 – Type of application (fill number of activity being applied for in each column)

Installation	Waste	Mining waste	Medium Combustion Plant (MCP)/Specified Generator (SG)	Water discharge/point source discharge to groundwater	Groundwater spreading onto land
1	1		1		

Table 2 – Charge type (A)

Charge activity reference	Charge activity description	What are you applying to do? E.g. new, minor variation, normal variation, substantial variation, surrender, low risk surrender, transfer	Amount
e.g. 1.17.3	e.g. Sect 5.2 landfill for hazardous waste	e.g. transfer	e.g. £5,561
1.16.2.1	Section 5.4 (b)(i) non-hazardous waste	New application	£ 13,984.00
	installation - biological treatment		
1.16.12	Physical treatment of non-haz waste - New	New application	£ 3,965.00
	Secondary @ 50%		
Total A			£ 17,949.00

1 Working out charges (you must fill in this section), continued

Table 3 – Additional assessment charges (B)

Part 1.19 Charges for plans and assessments			Tick appropriate
Reference	Plan or assessment	Charge	
1.19.1	Waste recovery plan	£1,231	☐
1.19.2	Habitats assessment (except where the application activity is a flood risk activity)	£779	☑
1.19.3	Fire prevention plan (except where the application activity is a farming installation)	£1,241	☐
1.19.4	Pests management plan (except where the application activity is a farming installation)	£1,241	☐
1.19.5	Emissions management plan (except where the application activity is a farming installation)	£1,241	☐
1.19.6	Odour management plan (except where the application activity is a farming installation)	£1,246	☑
1.19.7	Noise and vibration management plan (except where the application activity is a farming installation)	£1,246	☐
1.19.8	Ammonia emissions risk assessment (intensive farming applications only)	£620	☐
1.19.9	Dust and bio-aerosol management plan (intensive farming applications only)	£620	☐
	Advertising	£500	☐
Total B			£ 2,025.00

Total charges

Total A plus total B £ 19,974.00

2 Payment

Tick below to show how you have paid.

Cheque ☐

Postal order ☐

Cash ☐ Tick below to confirm you are enclosing cash with the application

Credit or debit card ☐

Electronic transfer (for example, BACS) ☑

Remittance number PSCAPPTHAMES102

Date paid (DD/MM/YYYY)

How to pay

Paying by cheque, postal order or cash

Cheque details

Cheque made payable to

Cheque number

Amount £

You should make cheques or postal orders payable to 'Environment Agency' and make sure they have 'A/c Payee' written across them if it is not already printed on.

Please write the name of your company and application reference number on the back of your cheque or postal order. **We will not** accept cheques with a future date on them.

We do not recommend sending cash through the post. If you cannot avoid this, please use a recorded delivery postal service and enclose your application reference details. Please tick the box below to confirm you are enclosing cash.

I have enclosed cash with my application ☐

2 Payment, continued

Paying by credit or debit card

If you are paying by credit or debit card we can call you. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro card only.

Please call me to arrange payment by debit or debit card ☐

Paying by electronic transfer BACS reference

If you choose to pay by electronic transfer you will need to use the following information to make your payment.

Company name	Environment Agency
Company address	SSCL (Environment Agency), PO Box 797, Newport Gwent, NP10 8FZ
Bank	RBS/NatWest
Address	London Corporate Service Centre, CPB Services, 2nd Floor, 280 Bishopsgate, London EC2M 4RB
Sort code	60-70-80
Account number	10014411
Account name	EA RECEIPTS
Payment reference number	PSCAPPXXXXXYYY

You need to create your own reference number. It should begin with PSCAPP (to reflect that the application is for a permitted activity) and it should include the first five letters of the company name (replacing the X's in the above reference number) and a unique numerical identifier (replacing the Y's in the above reference number). The reference number that you supply will appear on our bank statements.

If you are making your payment from outside the United Kingdom, it must be in sterling. Our IBAN number is GB23NWK60708010014411 and our SWIFTBIC number is NWBKGB2L.

If you do not quote your reference number, there may be a delay in processing your payment and application.

Provide a unique reference number for the application, i.e. do not only use the company name only: PSCAPPTHAMES102

State who is paying (full name and whether this is the agent/ applicant/other):

Fee paid: £

Date payment sent (DD/MM/YYYY):

Now read section 3 below

You should also email your payment details and reference number to ea_fsc_ar@gov.sscl.com.

3 Privacy notice

The Environment Agency runs the environmental permit application service.

We are the data controller for this service. A data controller determines how and why personal information is processed.

Our personal information charter explains:

- your rights
- what we do with your personal information

We're allowed to process your personal information because we have official authority as the environmental regulator. We need this information to carry out a task in the public interest that is set out in law. As the data controller, when you apply for an environmental permit, we have a legal obligation to process your personal data under the Environmental Permitting Regulations. The second lawful basis for processing your personal data is to comply with this legal obligation.

We need your personal information to process your environmental permit application. If you do not give us this information we cannot issue a permit to you. After we've issued a permit to you, we use your personal information:

- to check that you're complying with your permit
- during any potential enforcement action

What personal information we collect

If you're the individual applicant, director or company secretary of a company applying or a technically competent manager we need your:

- name
- date of birth

3 Privacy notice, continued

- address
- email address

If you're the agent, consultant, employee responsible for the activity or the employee responsible for billing and invoicing we need your:

- name
- address
- email address

If you're the applicant we need details of any:

- convictions
- bankruptcy

We also collect any questions or feedback you leave, including your email address if you contact us.

Your responsibility with other people's personal information

If you've included personal information about other people on your application, you must tell them. You must provide them with a copy of this privacy notice so that they know how their personal information will be used.

What we do with your personal information

We use your personal information to help us decide whether to issue you with a permit.

The information (except dates of birth) is available online on our consultation website during the consultation period. This website is available to everyone so your information may be seen outside the European Economic Area.

After consultation we put all the information (except dates of birth) you give us in your application on our public register.

If you can demonstrate that any information you send us is commercially or industrially confidential, we'll consider withholding that information from our public register.

If you think that the information you'll send us may be a threat to national security you must contact the Secretary Of State before you apply. You must still send us that information with your application. We will not include this information on our public register unless the Secretary of State decides it can be included.

See the environmental permitting guidance for guidance on national security.

We may use your email address to contact you for user research to improve our service. You don't have to take part in the research.

Where your personal information is processed and stored

We store and process your personal information on servers in the UK. We will not host your personal information outside the European Economic Area.

We do not use your personal information to make an automated decision or for automated profiling.

How long we keep your personal information

We keep your personal information while your permit is in use and for 7 years after you surrender your permit. If the permit is for a landfill site, we keep the data for 10 years after surrender.

Removing personal information from the public register

We will remove your personal information from the public register if:

- you withdraw your application
- we refuse your application and the time limit for appealing the decision has expired or an appeal is dismissed
- the information is no longer relevant for public participation purposes under the Environmental Permitting Regulations

Contact

Our Data Protection Team gives independent advice. They monitor how the Environment Agency uses your personal information.

If you have questions or concerns about how we process personal information, or to make a complaint or request relating to data protection, please contact:

Address: Data Protection Team
Environment Agency
Horizon House
Deanery Road
Bristol
BS1 5AH

3 Privacy notice, continued

Email: dataprotection@environment-agency.gov.uk

You can also make a complaint to the Information Commissioner's Office (ICO).

The ICO is the supervisory authority for data protection legislation. The ICO website has a full list of your rights under data protection legislation.

Now read section 4 below

4 Confidentiality and national security

Confidentiality

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential.

You can ask for information to be made confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application. You can find guidance on confidentiality in 'Environmental permitting guidance: core guidance', published by Defra and available via our website at www.gov.uk/government/organisations/environment-agency.

Only tick the box below if you wish to claim confidentiality for your application

Please treat the information in my application as confidential ☐

National security

You can tell the Secretary of State that you believe including information on a public register would not be in the interests of national security. You must enclose a letter with your application telling us that you have told the Secretary of State and you must still include the information in your application. We will not include the information in the public register unless the Secretary of State decides that it should be included.

You can find guidance on national security in 'Environmental permitting guidance: core guidance', published by Defra and available via our website at www.gov.uk/government/organisations/environment-agency.

You cannot apply for national security via this application.

Now fill in section 5

5 Declaration

If you knowingly or carelessly make a statement that is false or misleading to help you get an environmental permit (for yourself or anyone else), you may be committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

A relevant person should make the declaration (see the guidance notes on part F1). An agent acting on behalf of an applicant is NOT a relevant person.

Each individual (or individual trustee) who is applying for their name to appear on the permit must complete this declaration. You will have to print a separate copy of this page for each additional individual to complete.

If you are transferring all or part of your permit, both you and the person receiving the permit must make the declaration. You must fill in the declaration directly below; the person receiving the permit must fill in the declaration under the heading 'For transfers only'.

Note: we will issue a letter to both current and new holders to confirm the transfer. If you are changing address we will need to send this letter to your new address; therefore please tell us your new address in a separate letter.

If you are unable to trace one or more of the current permit holders please see below under the transfers declaration.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

If you deliberately make a statement that is false or misleading in order to get approval you may be prosecuted.

I confirm that my standard facility will fully meet the rules that I have applied for (this only applies if the application includes standard facilities) ☐

Tick this box to confirm that you understand and agree with the declaration above, then fill in the details below (you do not have to provide a signature as well) ☑

Tick this box if you do not want us to use information from any ecological survey that you have supplied with your application (for further information please see the guidance notes on part F1) ☐

5 Declaration, continued

Name

Title (Mr, Mrs, Miss and so on)	Mr
First name	Nick
Last name	Lutt
on behalf of (if relevant; for example, a company or organisation and so on)	Thames water Utilities Limited
Position (if relevant; for example, in a company or organisation and so on)	See letter of authorisation
Today's date (DD/MM/YYYY)	01/08/2022

For transfers only – declaration for person receiving the permit

A relevant person should make the declaration (see the guidance notes on part F1). An agent acting on behalf of an applicant is NOT a relevant person.

I declare that the information in this application to transfer an environmental permit to me is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

Note: If you cannot trace a person or persons holding the permit you may be able to transfer the permit without their declaration as above. Please contact us to discuss this and supply evidence in your application to confirm you are unable to trace one or all of the permit holders.

If you deliberately make a statement that is false or misleading in order to get approval you may be prosecuted.

Tick this box to confirm that you understand and agree with the declaration above, then fill in the details below (you do not have to provide a signature as well)	☐

Name

Title (Mr, Mrs, Miss and so on)	
First name	
Last name	
on behalf of (if relevant; for example, a company or organisation and so on)	
Position (if relevant; for example, in a company or organisation and so on)	
Today's date (DD/MM/YYYY)	

Now go to section 6

6 Application checklist

You must fill in this section.

If your application is not complete we will return it to you. If you aren't sure about what you need to send, speak to us before you submit your application.

You must do the following:

Complete legibly all parts of this form that are relevant to you and your activities	☑
Identify relevant supporting information in the form and send it with the application	☑
List all the documents you are sending in the table below. If necessary, continue on a separate sheet. This separate sheet also needs to have a reference number and you should include it in the table below	☑
For new permits or any changes to the site plan, provide a plan that meets the standards given in the guidance note on part F1	☑
Provide a supporting letter for any claim that information is confidential	☐
Get the declaration completed by a relevant person (not an agent)	☑
Send the correct fee	☑

6 Application checklist, continued

Question reference	Document title	Document reference
2	Payment reference	Payment: BACS reference PSCAPPTHAMES102
Form A	Part A - Maple Lodge STC	
Form C2	Part C2 - Maple Lodge STC	
Form C3	Part C3 - Maple Lodge STC	
Form C4	Part C4 - Maple Lodge STC	
Form C6	Part C6 - Maple Lodge STC	
Form F	Part F - Maple Lodge STC	
Non-technical Summary	Environmental Permit Variation Application - Maple	Chapter 1
	Lodge Sludge Treatment Centre	
Site Information	As above	Appendix A
BAT Assessment	As above	Appendix D
Odour Management Plan	As above	Appendix E
Bioaerosol RA	As above	Appendix F
Containment Assessment	As above	Appendix G

7 How to contact us

If you need help filling in this form, please contact the person who sent it to you or contact us as shown below.

General enquiries: 03708 506 506 (Monday to Friday, 8am to 6pm)

Textphone: 03702 422549 (Monday to Friday, 8am to 6pm)

Email: enquiries@environment-agency.gov.uk

Website: www.gov.uk/government/organisations/environment-agency

If you are happy with our service, please tell us. It helps us to identify good practice and encourages our staff. If you're not happy with our service, or you would like us to review a decision we have made, please let us know. More information on how to do this is available at: https://www.gov.uk/government/organisations/environment-agency/about/complaints-procedure.

Please tell us if you need information in a different language or format (for example, in large print) so we can keep in touch with you more easily.

8 Where to send your application

For how many copies to send see the guidance note on part F1.

Please send your filled in application form to:

For water discharges by email to PSC-WaterQuality@environment-agency.gov.uk

For waste and installations by email to PSC@environment-agency.gov.uk

Or

Permitting Support, NPS Sheffield
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

Do you want all information to be sent to you by email?

Please tick this box if you wish to have all communication about this application sent via email (we will use the details provided in part A) ☐

Feedback

(You don't have to answer this part of the form, but it will help us improve our forms if you do.)

We want to make our forms easy to fill in and our guidance notes easy to understand. Please use the space below to give us any comments you may have about this form or the guidance notes that came with it.

How long did it take you to fill in this form?

We will use your feedback to improve our forms and guidance notes, and to tell the Government how regulations could be made simpler.

Would you like a reply to your feedback?

Yes please ☐

No thank you ☐

For Environment Agency use only

Date received (DD/MM/YYYY)

Our reference number

Payment received?

No ☐

Yes ☐ Amount received

£

4. Form C2 Questions

1 About the permit

1a Discussions before your application

The pre-application process is currently not available due to Environment Agency resourcing issues, although discussions have been held with the local area Environment Agency staff. Nature and heritage conservation screening was requested and received via email from the pre-application advice service of the Environment Agency.

1b Permit number

What is the permit number that this application relates to?

EPR/FP3435LA/V004 issued 22/08/2018.

1c What is the site name, address, postcode and national grid reference?

Thames Water Utilities Limited

Maple Lodge Sludge Treatment Centre

Maple Lodge Sewage Treatment Works

Denham Way

Maple Lodge

Rickmansworth

WD3 9SQ

2 About your proposed changes

2a Type of variation

This is a substantial variation.

2b Changes or additions to existing activities

Table C2-1 Proposed changes to current activities.

Name	Installation schedule 1 references	Description of the installation activity	Description of waste operations	Proposed changes document reference
Maple Lodge STC	*Section 5.4 Part A(1) (b); i*	Biological treatment by means of Anaerobic digestion		This document

Name	Installation schedule 1 references	Description of the installation activity	Description of waste operations	Proposed changes document reference
Maple Lodge CHP Plant			Operation of CHP engines and boilers, now a DAA to installation	
Maple Lodge STW			Operation of MCPD standby emergency generators	

2c Consolidating (combining) or updating existing permits

Yes.

2c1 Do you want to have a modern style permit?

Yes.

2c2 Identify all the permits you want to consolidate (combine)

See Table 2 below:

Table C2-2

Table 2 – Permit Numbers
EPR/FP3435LA/V004 – Maple Lodge Combined Heat and Power Plant
MB3295YC - Low Risk Specified Generator / Medium Combustion Plant Standard Rules Permit

2d Treating batteries

The installation is not treating batteries.

2d1 Are you planning to treat batteries?

No, this application is not for the treatment of batteries.

2e Ship recycling

2e1 Is your activity covered by the Ship Recycling Regulations 2015?

No, this application is not covered by the Ship Recycling Regulations 2015.

2f Low impact installations (installations only)

2f1 Are any of the regulated facilities low impact installations?

No, this application is not for a low impact installation.

2g Multi - operator installation

No. This is not a multi-operator installation.

3 Your ability as an operator

3a Relevant offences

3a1 Have you, or any other relevant person, been convicted of any relevant offence?

Yes. The applicant has been convicted of a relevant offence within the last 12 months.

Event Name	Court	Date of hearing	Fine	Summary
EA v TWUL - Henley STW	Aylesbury Crown Court	26-Feb-21	£2,300,000.00 £87,944.00 (costs)	TWUL pleaded guilty to one charge (Count 2) and one charge (Count 1) lay on the file after a not guilty plea. Count 1: Between the 17th day of April 2016 and 26th April 2016 at Henley Sewage Treatment Works, Fawley, Henley-On-Thames, Oxfordshire, you failed to comply with or contravened an environmental permit, namely CNTD.D61 Schedule 01 Condition 1 (1), in that the works was not operated and effluent was not treated in a manner which so far as reasonably practicable minimised the polluting effects of the discharge made from the works on controlled waters. Contrary to Regulation 38(2) of the Environmental Permitting (England and Wales) Regulations 2016 Count 2: On the 23rd day of April 2016 at Henley Sewage Treatment Works, Fawley, Henley-On-Thames, Oxfordshire you contravened Regulation 12 (1) (b) of the Environmental Permitting (England and Wales) Regulations 2016 by causing a water discharge activity, namely the discharge of partially treated effluent consisting of ammoniacal nitrogen into the Fawley Court Ditch and Fawley Court Stream except under and to the extent authorised by an environmental permit. Contrary to Regulations 38(1) (a) and

Event Name	Court	Date of hearing	Fine	Summary
				12 (1) (b) of the Environmental Permitting (England and Wales) Regulations 2016.
EA v TWUL	Aylesbury Crown Court	21 & 26 May 2021	£4,000,000 £84,669 (costs)	Three charges as follows: (i) Depositing of controlled waste on land contrary to section 33(1)(a) and section 33(6) of the Environmental Protection Act 1990 – on 8 February 2016; (ii) Causing a water discharge activity, contrary to Regulation 12(1)(b) and Regulation 38(1)(a) of the Environmental Permitting (England Wales) Regulations 2019 – on 8 February 2016 & (iii) Failure to comply with an environmental permit condition, contrary to Regulation 38(2) of the Environmental Permitting (England and Wales) Regulations 2016 – on or about 8 February 2016. Plus, four subsequent charges taken into consideration (TICs), with the first (TIC 1) considered alongside the third charge.
EA v Thames Water - Hinksey/Seacourt Stream	Aylesbury Crown Court	19-Nov-21	£4,000,000.00 £90,713.52 (costs) and victim's surcharge of £170	TWUL pleaded guilty to one charge: Between 23 – 27 July 2016, in breach of Condition 2 of permit CAWM.0064 for an emergency overflow, TW failed to have a documented maintenance programme covering maintenance of the syphon/downstream sewer, resulting in a discharge due to its own act or default and undue delay identifying the asset and source of pollution, in contravention of Reg 38(2) of the EPR 2016.

3b Technical ability

Thames Water uses WAMITAB qualified staff at their waste facilities. The name of the relevant person for the site has been named below and full details have been provided separately on a spreadsheet:

Mr Daniel Scurtu.

Please see Appendix B for evidence of competency.

3c Finances

Installations, waste operations and mining waste operations only.

Do you or any relevant person or a company in which you were a relevant person have current or past bankruptcy or insolvency proceedings against you?

No.

3d Management systems

What management system will you provide for your regulated facility?

Identify the form of the management system from the list:

• Own management system

Thames Water has a SharePoint based Environmental Management System, with site specific elements and procedures linked from across the organisation. Thames Water also has an Asset Management System accredited to ISO 55001 and an Energy Management System accredited to ISO 50001.

Scope

Thames Water has an EMS in place for its permitted assets.

Environmental Policy

Implementation of Thames Water's Environmental Policy is approved by the Thames Water Executive Committee of the Thames Water Board and is the responsibility of all employees, with the Chief Executive being accountable for its implementation. The policy covers all company activities, including this installation, and applies to all individuals who are employed by, or carry out work on behalf of, any Thames Water company including contractors, temporary staff and agency workers. The Management Systems Team is responsible for the implementation and assurance of the EMS, the site operations teams will be responsible for maintaining ongoing compliance with the EMS and managing the site.

Management and Responsibilities

The Management Systems Team (EMS specialists) have responsibility for the management and upkeep of the EMS. Compliance with specific elements of environmental legislation is managed by the relevant Business Areas across the Company. The Environmental Assurance Team maintain a Legal Register and, in consultation with Operations Teams, the environmental permitting team and other specialists, assess environmental risks for in-scope areas using a significance scoring method under normal, abnormal and emergency conditions. Significant environmental aspects and impacts consider legal and other requirements, cost to the business, scale of impact and interested parties.

Management Systems Team are responsible for setting internal environmental standards which are then implemented by the relevant business areas. The Standards and other relevant information are communicated

through several routes. Incident and corrective action routes exist to promote continual improvement. The team run a programme of Management System Audits to determined adherence to the environmental policy and environmental standards.

Local operating procedures are the responsibility of the operational teams that operate the sewage works.

The defined roles and responsibilities are allocated to relevant personnel, depending on their job description, qualifications, knowledge, experience and training. Training and competency are based on specific roles.

Operational Control

Procedures are in place within the EMS to identify and control environmental issues arising from company activities. Each department is required to achieve operational control of its activities using standardised systems.

Routine sewage treatment operations and activities are recorded within the corporate management database, SAP. These include routine inspections, monitoring and maintenance tasks.

Non-routine activities, such as major overhauls/refurbishments, which involve the use of sub-contractors are assessed for health & safety concerns; relevant environmental risks and with accompanying method statements to respond to these.

Contractors who are required to carry out major services are closely managed by operational or other staff to ensure that compliance with Thames Water's H&S and environmental policies is achieved. No contractors may work on site without having undergone a full site induction and being issued with a Thames Water Operational Safety Authorisation (TWOSA) for the task(s) they intend to complete.

Processes on site operate continuously, 24-hours per day, 7-days per week, apart from maintenance periods. The plant is designed to operate unattended with process parameters being monitored continuously. Operating logs are stored electronically.

Maintenance and Monitoring

Management will have the ultimate responsibility for the effective maintenance of plant throughout the company. The facility has named staff that are responsible for day-to-day maintenance operations and contractors are also used as required. All maintenance is logged on SAP. The following basic inspections and maintenance activities are indicative of those carried out on site:

- Daily operation of plant (24/7) involves visual inspection of operational assets;
- Daily inspection of temporary pipe work installed;
- Routine maintenance programme for plant; and
- Routine lubrication programme.

Personnel responsible for the inspection, testing and maintenance of pollution prevention infrastructure are trained to an appropriate level.

All regular maintenance of all plant and equipment will be completed on the time scale specified by the equipment manufacturer including routine inspections.

Environmental Improvement

Thames Water is committed to environmental improvements and has established environmental targets and plans relating to materials and waste management, transport, climate change mitigation and adaptation (energy efficiency and renewable energy generation), water resources, biodiversity, river water quality, and drainage asset performance. TWUL's Environmental Governance Board meets on a regular basis to provide strategic direction, and interrogative review, attached to any environmental issue of substantive concern including emerging risks as well as current topics.

Competence, Training and Training Records

Thames Water aims to ensure that all employees are in possession of the knowledge, skills and experience necessary to perform their role in accordance with the company's operating procedures and in full compliance with the law. Training needs are identified by the employee's immediate supervisor or line manager.

For those sites treating 'waste' as defined by the Waste Regulations 2011, coverage at all permitted sites by staff who hold the appropriate level of WAMITAB 'Certificate of technical Competence' is monitored centrally. This aspect of the staff training is currently being reviewed in light of the change in permitting requirements for sludge treatment centres.

For each internal training course held a Training Record is issued.

Induction training is carried out by the responsible line manager and consists of an introduction to the Company's Environmental Health and Safety Policy and description of emergency response and spill prevention procedures.

Staff receive specific training in the plant's operation and the environmental impact of the process as well as health and safety. The operators will have a detailed understanding of the operational procedures for the site for both normal and abnormal operation. As part of the training, operators will receive specific instructions relating to those aspects of plant operation that have the potential for a negative impact on the environment. This training will be provided by the equipment manufacturers or in-house staff as appropriate.

Contractors

There are several procedures to ensure contractors have the required skills and environmental competencies to carry out works at the site.

Initially, contractors are assessed by the procurement department for inclusion on the approved supplier list, which includes health and safety and environmental criteria for example, waste documentation such as waste carrier's licence/training certificates. Even when the contractors are on the approved supplier list, they are still further assessed for each specific contracted activity.

The contactor is required to submit a method statement prior to any commencement of work, identifying how work is to be undertaken and the associated risks. The method statement must be approved by the Site Manager, who will also identify any site hazards and issue an Authorisation to Work/Enter the site, following a site induction. When on-site, the contractor must carry this Authorisation to Work at all times.

Incidents, Non-Compliances and Complaints

Thames Water has procedures for incidents, non-compliances and environmental complaints.

Incidents are managed through corporate and site-specific procedures which ensure that all incidents are logged and that necessary preventative and/or corrective actions are taken.

Customer complaints are made via the Customer Services Centre which will log all complaints electronically. An action is raised to Waste Operations Control Centre (WOCC) who contact the CSM by telephone and email the complaint information to both the CSM and Performance Manager. The CSM and Performance Manager will review the complaint and take action to investigate the complaint. The CSM is responsible for contacting the customer and updating them on the outcome of the investigation and any actions taken. Where complaints relate to odour/noise/amenity, typical follow up action would include physical checks onsite of the operation of plant; offsite checks where needed; with all the actions taken being logged. Where appropriate, site management may contact the customer to discuss the outcome of the complaint, otherwise, there is a customer communication plan that identifies how and when contact will be made with customers and other stakeholders.

Information regarding complaints is recorded to allow determination of an appropriate response (corrective action) and identify what measures need to be taken in the future to prevent its reoccurrence (preventive action).

Communication

There are regular meetings held on site to discuss all aspects of the treatment works and performance against targets. These meetings include the operation and performance of the installation. Other communication methods to promote environmental management issues and continual improvement include: toolbox talks, environmental alerts, OSC portal forums, formalised event learning processes following an operational incident and compliance audits.

4 Consultation

Could the waste operation or installation involve releasing any substance into any of the following?

4a A sewer managed by a sewerage undertaker?

Yes. The site discharges into a drainage system of the wider sewage treatment works, controlled and operated by the applicant.

4b A harbour managed by a harbour authority?

No.

4c Directly into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries committee?

No.

4d Is the installation on a site for which:

4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?

No.

4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards Regulations 2015, or a safety report is needed under regulation 7 of those Regulations?

Yes, Maple Lodge Sewage Treatment Works is a Lower tier site under COMAH due to Flammable liquids and gases. The existing policy document remains as at present.

5 Supporting information

5a Provide a plan or plans for the site

Please see Appendix A for:

- Site location plan;
- Site layout plan;

- Site Impermeable and permeable surfaces plan;
- Site drainage plan; and,
- Block Flow Diagram of site operations.

5b Do any of the variations you plan to make need extra land to be included in the permit?

Yes.

The area upon which the Installation is located is industrial land, which has been used as a STW since at least the 1950's. Full details of historical use are provided in the Site Condition Report, which can be found in Appendix C, H5 template site condition report.

The measures put in place will ensure that operations during the life of the Permit will not lead to deterioration of the state of the land.

Substances used and stored on-site are recorded in Table C3-3c and historical substance use and assessment is identified in the Site Condition Report. All potentially polluting substances are provided with containment, which broadly meets Environment Agency guidelines other than where stated. Any incidents that arise, or may have arisen, which could impact on the site condition will be documented by TWUL, along with the measures taken to mitigate their impact on the site condition as described in the Accident Management Plan (which can be found in Table C3-3b (iv)) and the wider site EMS in line with the Environment Agency's lifetime records approach.

Large areas of operations at Maple Lodge STC are situated on hard standing but some tank operations take place on unmade ground. Activities occurring in areas not on hardstanding are carefully controlled both by local containment and operational techniques. It can be concluded that pollution to groundwater or the ground, from current or proposed activities is unlikely, however, there is an increased risk from underground pipelines surrounded by unmade ground, unmade ground surrounding the eight primary digester tanks and surrounding the secondary digester tanks. Due to the age of the works, there have been operational and infrastructure changes over an extended period which may have given rise of potential issues. As a result of this, coupled with the long-established use of the site as a STW, TWUL have concluded that the identification of baseline conditions is not appropriate given a proportionate review of the risk

5c Provide a non-technical summary of your application

Please see earlier text in Section 1.

5d Risk of fire from sites storing combustible waste

No. The site processes sit outside the scope of the Environment Agency fire prevention plan guidance, as set out in the Environment Agency guidance document 'Appropriate measures for the biological treatment of waste'.

5f Adding an installation

Please see the response to Q5b for the baseline report which is in the H5 template.

6 Environmental risk assessment

An environmental risk assessment of the site changes has been carried out in line with the requirements of the Horizontal Guidance Note H1 and Guidance given on gov.uk. This guidance specifies the following approach to carrying out an environmental risk assessment for a proposed activity:

- Identify potential risks that your activity may present to the environment;
- Screen out those that are insignificant and don't need detailed assessment;

- Assess potentially significant risks in more detail if needed;
- Choose the right control measures, if needed; and,
- Report your assessment.

Site tank inventory

Tank Purpose	Number	Operational Volume (m^3)	Construction
Picket Fence Thickener	4	430	Steel
Sludge Tank	1	565	Concrete
SAS Tank	1	336	Concrete
Drum Thickener	1	312	Steel
Reception Tank	1	525	Steel
Sludge Blending Tank	1	1,050	Steel
Primary Digester Tank	8	3,407	Steel
Secondary Digester Tank	14	2,200	Concrete
Digested Sludge Polymer Silo	1	25 tonnes	Steel
Boiler Fuel Oil Tank	1	56,160 litres	Steel
Generator Fuel Oil Tank	1	84,000 litres	Steel

Designated site review

Site Name	Designation	Direction from site	Distance from site
Burnham Beeches	SAC	South-West	9,800m
Old Park Wood	SSSI	South-East	450m
Mid Colne Valley	SSSI	South	960m
Stockers Lake	LNR	North-East	720m

Site Name	Designation	Direction from site	Distance from site
Rickmansworth Aquadrome	LNR	North-East	1,540m
n/a	Ramsar	n/a	n/a
n/a	SPA	n/a	n/a
n/a	NNR	n/a	n/a
n/a	MPA	n/a	n/a
Old Park Wood	Ancient and Semi-Natural Woodland	South-East	450m
List of Local Wildlife Sites			
Springwell and Stocker's Lakes Springwell Pit Wood Summerhouse Lane Chalk Pit Colne Valley Gravel Pits Maple Lodge Nature Reserve London's Canals			All sites <2,000 m

Data taken from MAGIC.gov.uk website, accessed June 2022 and also from the EA Pre-Application Nature and Heritage Conservation Screening Report (May 2022) for the site. For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI – 2km); Local and National Nature Reserves, LWSs and areas of Ancient Woodland (2km).

There are a total of five designated habitat sites within the relevant distances of the site. The closest is the Old Park Wood SSSI, which is located approximately 450 m to the South-East of the site, whilst the Mid Colne Valley SSSI is located approximately 960 m to the South of the site. There are two LNRs to the North-East, with Stockers Lake approximately 720 m to the North-East and Rickmansworth Aquadrome approximately 1.5km to the North-East. Finally, there is one SAC, Burnham Beeches, approximately 9.8km to the South-West. There are no SPAs, Ramsar sites or MPAs within 10 km of the site and no NNRs within 2km of the site.

There is one area of Ancient Woodland within 2 km of the site, comprising Old Park Wood Ancient and Semi-Natural Woodland located approximately 450m to the South-East of the site.

There are six non-statutory designated LWS's within 2 km of the site, with the Maple Lodge LWS and Springwell and Stocker's Lakes LWS representing the closest LWSs to the site.

There are also protected species records (protected fish and protected fish migratory routes) located within the specified screening distance (within 500m) of the site associated with the River Colne and its tributaries. There is also protected habitat (Chalk Rivers and Deciduous Woodland) located within the specified screening distance (within 50m) of the site associated with the River Colne and surrounding woodland habitat.

The site sits within the boundaries of a SPZ. Parts of the site, including sludge assets, are within a SPZ 1 Inner Protection Zone. Other parts of the site, including sludge digestion assets, are within SPZ 2 and SPZ3.

The permitted area of the site sits within Flood Zones 1 (<1:1000 annual probability of flooding), 2 (between a 1:100 and 1:1000 annual probability of flooding) and 3 (a 1:100 or greater annual probability of river flooding); part of the site benefits from flood defences on the River Colne. The cess/waste import point, picket fence thickeners, sludge import, sludge reception tank, blending tanks, boiler house and standby generators are within Flood Zone 2 while part of the sludge dewatering plant and sludge tank are within Flood Zone 3. The cake pad and secondary digesters are mostly Flood Zone 1, although some of the secondary digester tanks are within a Flood Zone 2 area.

The site is not located within an AQMA. The nearest AQMA is more than 2.5 km to the south-west of the site.

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Amenity issues: Litter, vermin and pests	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. The STC is located at the STW, in a mainly rural area east of the village of Maple Cross. The nearest residential dwellings are located approximately 180 m to the west of the cess import point and approximately 240 m to the south-east of the wider site. The nearest commercial/industrial premises is a social club located approximately 120 m and 180 m to the west and north-east of the site respectively and a farm is located approximately 250m south-west of the site. Ecological receptors: There are two LNRs within 2 km of the site: Stockers Lake is located approximately 720 m to the North-East of the site and Rickmansworth Aquadrome is located approximately 1.5 km to the North-East of the site. There are two SSSIs within 2 km of the site: Old Park Wood is located approximately 450 m to the South-East of the site and Mid Colne Valley is located approximately 960 m to the South of the site. Burnham Beeches SAC is located approximately 9.8 km to the South-West of the site. There is also a locally designated nature reserve adjacent to the site. There are no MPAs, SPAs or Ramsar sites within 10km of site and no NNRs within 2km of the site. There is one area of Ancient Woodland within 2 km of the site, comprising Old Park Wood Ancient and Semi-Natural Woodland located approximately 450m to the South-East of the site. There are six non-statutory designated LWS's within 2 km of the site, with the Maple Lodge LWS and Springwell and Stocker's Lakes LWS representing the closest LWSs to the site.	The wastes handled at the site are primarily liquids and sludges, along with UWWTD derived material delivered by sewer. As such, there is no source of litter within the materials handled at the site. In the unlikely event pests or vermin are observed on site a suitable contractor is called in as soon as practicable.	X
Dust and bioaerosols	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Litter above.	The wastes handled at the site are liquids, sewage sludges and sewage cake, along with UWWTD derived material delivered by sewer.	√

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	The impact of dust on human health will depend on the distance and wind direction. For bioaerosols this is 250 m.	The site will not be handling inherently dusty or powdery wastes. Digested sludge cake retains a high moisture content and is not prone to being dusty. A wheel wash is used for vehicles exiting the digested sludge cake pad and roads will be maintained to avoid the production of dust. Anerobic digestion of sludge takes place within a closed system. Digested sludge cake is stored on the cake pad on the north-western side of the site, more than 250 m away from sensitive receptors and the risk from bioaerosols is low and monitoring is not required. Please see Appendix F for the site specific bioaerosol risk assessment.	
Assessment of point source emissions to air Emissions deposited from air to land	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above. The impact of emissions from air on human health will depend on the distance and wind direction.	The site is not located within an AQMA. Air emissions have previously been assessed by the Environment Agency and deemed satisfactory. The emergency flares are limited to emergency situations and during planned maintenance activities to either the CHP engines or the boilers. Pressure relief valves are not used routinely to control biogas volumes and would only operate in an emergency. Fugitive emissions to air are assessed in Table C3-3b(i).	X
Assessment of point source and fugitive emissions to water	The River Colne is located on the site's northern and eastern boundary and the Grand Union Canal runs parallel to the River Colne along the eastern boundary. Lynsters Lake is approx. 50 m to the south of the site and Marsh Lake is approx. 30 m to the west of the site. An engineering channel, known local as Flakes Channel is within the wider STW site The majority of the wider works is in Flood Zone 1 but parts of the wider site also include Flood Zones 2 and 3. Part of the site benefits from flood defences. The greatest flood risk is associated with the eastern perimeter of the site. Areas of the site to be permitted will be within Flood Zone 3.	Site is not known to have been impacted by flooding. The main product of the process is a digested sludge cake, which is stored within Flood Zone 1, on a concrete pad equipped with drainage Other aqueous discharges generated by biological waste treatment and DAAs are limited (comprising only biogas condensate, dewatering liquors and surface water run off). These sources are discharged to the on-site drainage system where they are transferred to main sewage works inlet.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	Surface water drainage within the site drains returns to points within the works inlet and at the head of the works of the adjacent sewage treatment works for full treatment prior to discharge.	Due to the nature and small quantity of these emissions no further assessment of point source emissions is deemed necessary.	
Assessment of odour	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, recreation areas such as playing fields and playgrounds. Industrial estates and rail stations. For human health and ecological receptors, see notes for Amenity issues above. The impact of emissions from odour on human receptors will depend on the distance and wind direction.	The wider sewage treatment works, which includes the area of the STC to be permitted, has processes in place to minimise odour which includes physical containment, odour abatement, management systems, procedures and monitoring to control fugitive emissions of odour at the plant. The sewage treatment works has an odour management plan which is appended as Appendix E. The site has received occasional odour complaints from local residents.	X
Energy	Global atmosphere (direct and indirect emissions).	Use of biogas on site within the CHP engine and/or boilers minimises the need to import non-renewable electricity from the National Grid. Export of renewable electricity to the National Grid can offset consumption of fossil fuels within the energy mix, lowering the carbon intensity of power. Good maintenance procedures will help the plant run efficiently and reduce site energy consumption. Use of LED lighting reduces site consumption.	X
Land and disposal of waste to other processes	Rivers and streams – see Assessment of point source and fugitive emissions to water above. Drainage systems/sewers. Part of the site lies inside a Groundwater Source Protection Zone 1 (SPZ) while a SPZ 2 and SPZ 3 underly parts of the site. Aquifers are classified as Principal (bedrock deposits) and Secondary A (superficial deposits).	All waste streams are taken off-site for recovery or disposal and will continue to be transferred (and consigned where hazardous) to appropriately permitted facilities.	X
Noise and vibration	Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths, amenity and recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.	Site design has been chosen to minimise the impact of noise on offsite receptors through building orientation, finishes and location of openings.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
	The STC is located at the STW, in a mainly rural area east of the village of Maple Cross. The nearest residential dwellings are located approximately 180m to the west of the cess import point and approximately 240m to the south-east of the wider site. The nearest commercial/industrial premises is a social club located approximately 120 m and 180 m to the west and north-east of the site respectively and a farm is located approximately 250m south-west of the site. Ecological receptors: There are two LNRs within 2 km of the site: Stockers Lake is located approximately 720 m to the North-East of the site and Rickmansworth Aquadrome is located approximately 1.5 km to the North-East of the site. There are two SSSIs within 2 km of the site: Old Park Wood is located approximately 450 m to the South-East of the site and Mid Colne Valley is located approximately 960 m to the South of the site. Burnham Beeches SAC is located approximately 9.8 km to the South-West of the site. There is also a locally designated nature reserve adjacent to the site. There are no MPAs, SPAs or Ramsar sites within 10km of site and no NNRs within 2km of the site. There is one area of Ancient Woodland within 2 km of the site, comprising Old Park Wood Ancient and Semi-Natural Woodland located approximately 450m to the South-East of the site. There are six non-statutory designated LWS's within 2 km of the site, with the Maple Lodge LWS and Springwell and Stocker's Lakes LWS representing the closest LWSs to the site.	Noise from plant and equipment will be minimised through purchasing decisions and a robust preventative maintenance programme. The site has traffic management procedures including one-way system around part of the site, site speed limits and marked vehicle routes. There will be no sources of vibration within the facility. Noise and vibration emissions are assessed in Table C3-3b(iii). Noise complaints have been received from local residents, associated with waste imports from customer vehicles and there is a separate goods vehicle entrance that avoids residential roads.	
Other issues (including visual impact)	Protected Species & Habitats	There are protected species records (protected fish and protected fish migratory routes) located within the specified screening distance of the site associated with the River Colne and its tributaries. There is also protected habitat (Chalk Rivers and Deciduous Woodland) located within the specified screening distance of the site associated with the River Colne and surrounding woodland habitat. The installation does not discharge directly to the above watercourse and the final effluent	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
		discharge is regulated under a separate environmental permit which takes into account these designations.	

Appendix 2 – Date of birth information for Relevant offences and/or Technical ability questions only

This information has been supplied separately for the ease of exclusion from the public register.

5. Form C3 Questions

1 – What activities are you applying to vary?

Table C3-1a – Types of activities

Installation name	Schedule 1 references	Description of the Activity	Activity Capacity	Annex I and II codes and descriptions	Non-hazardous waste treatment capacity
Maple Lodge Sludge Treatment Works AR1	S5.4 A1 (b) (i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment Anaerobic digestion of permitted waste in 22 digesters followed by combustion of biogas produced from the process	From receipt of permitted waste through to digestion and recovery of by-products (digestate and biogas).	1,500 tonnes per day	R1 Use principally as a fuel or other means to generate energy. R3: Recycling reclamation of organic substances which are not used as solvents R13 Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where the waste is produced). D10: Incineration on land	Maximum waste throughput 600,000 tonnes per annum including indigenous UWWTD derived sludge from within the wider Sewage Treatment Works
Directly Associated Activities					
AR2	Imports of waste, including sludge from other sewage treatment works and imports of municipal liquids or sludges similar in composition to UWWTD derived materials				
AR3	Blending of indigenous sludges and imported wastes/waste sludge prior to treatment				
AR4	Storage of digestate prior to dewatering				
AR5	Dewatering of digested sewage sludge				
AR5	Transfer of dewatering liquors via site drainage back to the head of the sewage treatment works				

AR7	Transfer of surface water run-off via site drainage back to the head of the sewage treatment works
AR8	Storage of dewatered digested sludge cake prior to offsite recovery
AR9	Storage of biogas
AR10	Transfer of biogas condensate via site drainage back to the head of the sewage treatment works;
AR11	Combustion of biogas (or fuel oil) in MCPD (and SG) compliant biogas CHP engines and boiler units
AR12	Combustion of fuel oil in a MCPD and SG compliant emergency standby generator (which operates less than 50 hours per annum)
AR13	Transfer of biogas condensate via site drainage back to the head of the sewage treatment works
AR14	Storage of oil
AR15	Storage of wastes, including waste oils
AR16	Operation of siloxane filter plant
AR17	Operation of biogas flare stacks
AR18	Storage of diesel;
AR19	Storage of raw materials.

Waste Operations				
	Description of the waste operation	**Annex I (D codes) and Annex II (R codes) and descriptions**	**Hazardous waste treatment capacity**	**Non-hazardous waste treatment capacity**
AR18	Imports of wastes to the works inlet for treatment through the UWWTD route	D9: Physico-chemical treatment of waste not specified elsewhere in Annex IIA which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12	n/a	Maximum waste throughput 100,000 tonnes per annum

		D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)		
	Digested sludge cake for temporary storage pending off-site removal	R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced). R3: Recycling or reclamation of organic substances which are not used as solvents	n/a	Maximum waste throughput 10,000 tonnes per annum
For all Waste Operations		Total storage capacity	62,564 m^3	
For waste imports to the head of the works		Annual throughput (tonnes each year)	Imports: 100,000 tonnes	
For waste imports of digested sludge cake for temporary storage		Annual throughput (tonnes each year)	Imports: 10,000 tonnes	

Table 1b Types of waste accepted

Table C3-1b(i): Waste accepted for anerobic digestion

Waste Code	Description of Waste
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01 [note 1]
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)

Waste Code	Description of Waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil / water separation containing only edible oil and fats [note 2]
19 09 02	sludges from water clarification [note 2]
19 09 03	sludges from decarbonation [note 2]
19 09 06	solutions and sludges from regeneration of ion exchangers [note 2]
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only)

Note 1 – comprising but not limited to:

Centrate liquor [Note 2 if not derived from UWWTD wastes];

Final effluent from water treatment works [Note 2];

Final effluent from waste water treatment works

Note 2 – Where wastes are imported which would cause the digester outputs to fall outside of the Sludge Use in Agriculture Regulations, those wastes in Table 1 will not currently be accepted. Null waste returns will be provided to demonstrate that these wastes have not been processed.

Table C3-1b(ii): Waste accepted at the head of the works import point

Waste Code	**Description of Waste**
16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01 [note 1] [note 3]
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only) **[note 3]**
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only) **[note 3]**
19 06 99	wastes not otherwise specified (waste from de-gritting AD digester)
19 08 05	sludges from treatment of urban waste water **[note 3]**

19 08 09	grease and oil mixture from oil / water separation containing only edible oil and fats
19 09 02	sludges from water clarification
19 09 03	sludges from decarbonation
19 09 06	solutions and sludges from regeneration of ion exchangers
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11 (sewage sludge only) [note 3]
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation
20 03 04	septic tank sludge [note 3]
20 03 06	waste from sewage cleaning [note 3]
Note 1 – comprising but not limited to: Centrate liquor [Note 3 if derived from UWWTD wastes]; Cesspool waste [Note 3]; Waste from a portable toilet Final effluent from water treatment works Waste water treatment works arisings e.g. final effluent or raw sewage [note 3] Note 3 – waste stream included for reference only and to confirm that an import of said waste is excluded from requirements of the permit by way of the waste being exempt under Controlled Waste (England and Wales) Regulations 2012, Reg 3(2)(a).	

Table C3-1b(iii): Waste accepted for temporary storage and transfer or treatment

Waste Code	Description of Waste
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 06 99	wastes not otherwise specified (waste from de-gritting AD digester)
19 08 01	screenings

19 08 02	sewage grit (waste from de-sanding) only
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil / water separation containing only edible oil and fats
19 09 02	sludges from water clarification
19 12 12	other waste (including mixtures of materials) from mechanical treatment of waste other than those mentioned in 19 12 11 (sewage sludge only)
20 03 06	waste from sewage cleaning

1c Recovery of hazardous waste on land

Are you applying for a waste recovery activity involving the permeant deposit of inorganic hazardous waste to land for construction or land reclamation?

No - Where the answer is no, there is no requirement to answer further questions in 1c.

2 – Point source emissions to air, water and land

Table C3-2a – Emissions to Air

Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**	Monitoring Frequency
A5a	Combustion exhaust gases from dual fuel boiler 2a via release point A5a	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150	mg/m^3	Annually

Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**	Monitoring Frequency
A5b	Combustion exhaust gases from dual fuel boiler 2b via release point A5b	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150	mg/m^3	Annually
A5c	Combustion exhaust gases from dual fuel boiler 2c via release point A5c	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150	mg/m^3	Annually
A5d	Combustion exhaust gases from dual fuel boiler 2d via release point A5d	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150	mg/m^3	Annually
A6	Biogas flare [note B]	Combustion gases	-	-	-
A8a	Combustion exhaust gases from CHP Engine 2a via dual flue stack 8a	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500	mg/m^3	Annually
		Carbon monoxide	1,400	mg/m^3	
		Total VOCs	No limit set	-	

Emission point reference and location	**Source**	**Parameter**	**Quantity**	**Unit**	Monitoring Frequency
A8b	Combustion exhaust gases from CHP Engine 2b via dual flue stack 8b	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	500	mg/m^3	Annually
		Carbon monoxide (CO)	1,400	mg/m^3	
		Total VOCs	No limit set	-	
A9	Biogas flare [note E]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	150 [note F]	mg/m^3	
		Carbon monoxide (CO)	50 [note F]	mg/m^3	
		Total VOCs	10 [note F]	mg/m^3	
A10	Import OCU	-	-	-	
A11	MCP Standby Generator Engine1 (Individually above 5MWth net)	Sulphur Dioxide (SO_2)	N/A	-	Once every 1,500hrs of operation with a minimum frequency of once every fiver years (the determination date being 28/1/2020).
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	No limit	-	
		Carbon monoxide (CO)	No limit	-	
A12	MCP Standby Generator Engine 2 (Individually above 5MWth net)	Sulphur Dioxide (SO_2)	N/A	-	Once every 1,500hrs of operation with a minimum frequency of once every fiver years (the determination
		Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	No limit	-	
		Carbon monoxide (CO)	No limit	-	

Emission point reference and location	Source	Parameter	Quantity	Unit	Monitoring Frequency
					date being 28/1/2020).
A13	Primary digester pressure relief valve	-	-	-	
A14	Primary digester pressure relief valve	-	-	-	
A15	Primary digester pressure relief valve	-	-	-	
A16	Primary digester pressure relief valve	-	-	-	
A17	Primary digester pressure relief valve	-	-	-	
A18	Primary digester pressure relief valve	-	-	-	

Emission point reference and location	Source	Parameter	Quantity	Unit	Monitoring Frequency
A19	Primary digester pressure relief valve	-	-	-	
A20	Primary digester pressure relief valve	-	-	-	

Note B - When the flare stack which emits via point A6 has been removed, monitoring or reporting will no longer be required.

Note E – These limits are based on normal operating conditions and load – temperature 0°C (273K); pressure: 101.3 kPa and oxygen: 3 per cent (dry gas). The measurement uncertainty specified in LFTGN05 v2 2010 shall apply.

Note F – Monitoring to be undertaken in the event the emergency flare has been operational for more than 10 per cent of a year (876 hours). Record of operating hours to be submitted annually to the Environment Agency.

Table C3-2b – Emissions to Sewer

Emission point reference and location	Source	Parameter	Limit	Unit
All surface water drains at site boundary	Compressor/boiler blow-down, gas condensate and site drainage.	No parameters set	No limit set	-
T1	Surface water drainage; cleaning residues and any small spillages in the permitted area	No parameters set	No limit set	-
T2	Surface water drainage (roof);	No parameters set	No limit set	-

T3	Surface water drainage; dewatering liquors; biogas condensate; cleaning residues and any small spillages in the permitted area	No parameters set	No limit set	-
T4 -tbc	Surface water drainage; biogas condensate; cleaning residues and any small spillages in the permitted area	No parameters set	No limit set	-
T5 – tbc	Surface water drainage; biogas condensate, boiler blowdown; cleaning residues and any small spillages in the permitted area	No parameters set	No limit set	-

There are no permitted emissions to water or land from the activities covered by this permit.

3 – Operating techniques

3a - Technical standards

Description of the schedule 1 activity or directly associated activity	Relevant technical guidance note or Best available techniques as described in BAT conclusions under IED	Document Reference
Anaerobic Digestion plant S5.4A1(b)(i); Storage of waste (DAA)	Will be updated as and when the EA guidance is issued	
Spark ignition gas engines and emergency flare (DAA)	LFTGN08: Guidance for Monitoring Landfill Gas Engine Emissions	

3a1 Does your permit (in Table 1.2 Operating Techniques or similar table in the permit) have references to any of your own documents or parts of documents submitted as part of a previous application for this site?

Yes, please refer to ADMS modelling from the previous application, which remains valid.

3b - General requirements

If the TGN or H1 assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them.

Although screened out of the detailed Risk Assessment (Question C2 Q6), due to the nature of the process the installation has the potential to generate fugitive emissions to air and water, which are subject to a number of process controls.

Risk Matrix and Terminology for Accident for Risk Assessment

Likelihood ↓	Consequence		
	Low	Medium	High
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

Classification of Likelihood

Classification	Definition
Low	Probability of an event is low and likely only to occur in the long-term (a yearly basis or less frequent).
Medium	It is probable that an event will occur periodically in the medium-term (twice yearly basis).
High	An event is very likely to occur in the short-term (monthly or weekly basis) and is almost inevitable over the long-term OR there is evidence at the receptor of harm or pollution.

Classification of Consequences

Classification	Definition
Low	Impact is low or a minor, short-term nuisance. Minor release to a non-sensitive receptor or pollution of water course. Non-permanent health effects to human health (easily prevented by appropriate use of PPE). Minor surface damage to a building, structure, service or the environment which can be repaired immediately.
Medium	Impact is noticeable in the short to medium-term. Large release impacting on the receiving media which kills flora and fauna and requires remediation. Nuisance causing non-permanent health effects to human health. Damage to buildings, structures and services which prevents use in the short-term and/or requires a specialist repair.
High	Impact is significant, wide-ranging and long-lasting effect. Has either a chronic or acute impact on human health. Very large release that has a major impact on flora and fauna which may be very difficult to remediate. Significant damage to a single or multiple building, structure and service which prevents use over a long-term and may require complete replacement. May cause a long-term impact or contribute towards a global issue due to releases of greenhouse gases.

The following categorisation of risk has been developed and the terminology adopted as follows:

Term	Definition
Low	A level of harm is possible although this may not be noticeable to a receptor and would be a short-term event without lasting effects. Level of harm can be reduced using industry best practice and appropriate measures and techniques.
Medium	A level of harm may arise to a receptor which is noticeable although not long-lasting and may require some remedial actions in order to prevent re-occurrences.
High	A level of harm is likely to arise to a receptor that is severe causing significant harm to human health or the environment without appropriate remedial and mitigation measures being implemented. Remedial works to infrastructure and processes is required in the long-term.

Although screened out of the detailed Risk Assessment (Question C2 Q6), due to the nature of the processes, the anaerobic digestion operations and digested sludge cake storage, along with biogas utilisation have the potential to generate fugitive emissions to air and water, which are subject to a number of process controls.

Table C3-3b(i) Fugitive emissions risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Emissions to air of NOx, SO_2, CO_2 and VOCs	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors	High	Low	Medium	Activities are managed and operated in accordance with the site management system (including inspection and maintenance of equipment, including engine management systems), point source emissions to air (CHP engines, boilers and emergency flare stack) have emission limits for NOx, CO_2, SOx. Flare stack height approx. 3m, CHP stack approx. 15m and boiler flues approx. 35m. Site has a siloxane filter fitted on the main biogas pipeline connected to the CHP engine to remove impurities within the biogas. Previous modelling, which remains unchanged, did not find unacceptable impacts.	Low
Gas transfer systems, gas storage, CHP engines, flares or PRVs failure causing emissions of biogas	Abnormal	Emissions to air and dispersion leading to: inhalation by local human and animal receptors. Odour impact. Global warming potential. Risk of fire and explosion	Low	Medium	Low	The plant is designed to capture and utilise all biogas possible, combusting the biogas in order to maximise recovered value from the biological treatment of sludge. The gas system utilised is subject to regular preventative maintenance to minimise the potential for leaks occurring. The system is also	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						protected with a comprehensive array of pressure and flow sensors and with isolation valves to minimise the potential for release if a leak is detected. Personnel on site wear portable gas detectors in order to alert staff to presence of biogas. Biogas flares (emergency flares) are utilised for the safe disposal of surplus gas in the event of plant breakdown, or a surplus of gas above the level that can be safely stored or utilised. Use of emergency flare is recorded. PRVs are in place on the floating roof gas holders to be operated in the event of failure of the emergency flare to prevent over-pressurisation and catastrophic failure.	
Catastrophic loss of biogas emissions from gas transfer systems, gas storage, gas engines, flares or PRVs	Abnormal	Emissions to air and dispersion leading to: inhalation by local human and animal receptors. Odour impact. Global warming potential. Risk of significant fire and explosion	Low	High	Medium	The plant is designed to capture and utilise all biogas possible, combusting the biogas in order to maximise recovered value from the biological treatment of sludge. The gas system utilised is subject to regular preventative maintenance to minimise the potential for leaks occurring. The system is also protected with a comprehensive array of pressure and flow sensors and with isolation valves to minimise the potential for release if a leak is detected.	Medium

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Biogas flares (emergency flares) are utilised for the safe disposal of surplus gas in the event of plant breakdown, or a surplus of gas above the level that can be safely stored or utilised. Use of emergency flare is recorded. PRVs are in place on the floating roof gas holders to be operated in the event of failure of the emergency flare to prevent over-pressurisation and catastrophic failure.	
Combustion of biogas within CHP engines and emergency flares. Combustion of biogas or fuel oil within boilers	Normal	Emissions to air and dispersion leading to: inhalation by local human and animal receptors. Global warming potential	High	Low	Medium	Combustion plant is regularly maintained and appropriately sized to manage volumes of biogas with multiple outlets providing contingency. Combustion plant operates within permitted ELVs subject to routine monitoring against permit compliance. CHP engine and emergency flare are located away from the nearest residential properties which are located approx. 450m to the west of the CHP engines, with the nearest commercial buildings located approx. 440m to the east.	Low
Release of bioaerosols and dust	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors. Odour impact of	High	Low	Medium	The risk of bioaerosol and dust is as a result of digested sludge cake storage within an open engineered cake pad, located within the north-west of the site away. The nearest residential receptors are located approx. 350m to the	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
		bioaerosols. Nuisance impact of dust.				north-west of the digested sludge cake pad and the nearest commercial buildings are located approx. 300m to the north-west. There are also LWSs located adjacent to the boundaries of the site. Digested sludge cake on the pad retains a high moisture content and is not prone to windblown dispersion leading to the generation of dust. Vehicle egress from the pad is through a wheel wash facility, which minimises the transfer of digested sludge cake to internal roads which could generate emissions of dust. Internal site roads are made from concrete/asphalt and not prone to the generation of dust. Please see Appendix F for the site specific bioaerosol risk assessment.	
Release of bioaerosols and dust from spillages	Abnormal	Emissions to air and dispersion leading to inhalation by local human and animal receptors with potential harm to health. Odour impact of bioaerosols. Nuisance impact of dust.	Low	Low	Low	Staff responsible for site housekeeping and cleaning of spillages in a timely manner. Sludge retains a high moisture content and is not prone to windblown dispersion which could cause the generation of dust in the event of a spillage.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Internal site roads are made from concrete/asphalt and not prone to the generation of dust. Vehicle egress from the cake pad is through a wheel wash to reduce incidents of transfer from the barn to site roads. Exit from the site is via a separate goods vehicle route away from residential receptors.	
Spillage of liquids, including chemicals and oils.	Abnormal	Emissions to surface waters close to and downstream of site. Acute effect resulting in loss of flora and fauna. Chronic effect resulting in deterioration of water quality Emissions to ground and ground water.	Low	High	Medium	Surface water bodies can be found on the site northern and eastern perimeter and within the wider STW site. Lakes can be found to the south and west. Parts of the site are within Source Protection Zone 1. Chemicals and oils all stored within suitably bunded tanks and IBCs with rainwater removed as required to maintain 110% capacities. All combustion plant and associated fuel tanks are situated on concrete hardstanding. Penstock valves are available within the fuel oil delivery areas and are used during deliveries to isolate drainage and to contain any potential large spillages. Bulk fuel is stored in compliance with Oil Storage Regulations. Handling and use of chemicals and oils is carried out by trained personnel. COSHH data sheets available.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Spill kits available on site. Staff are trained in their use There are no point source emissions to water with drainage system pumping back to works inlet.	
Spillage from storage and digestion tanks, overtopping of tanks, leakage from same tanks and from buried pipes	Abnormal	Emissions to surface waters close to and downstream of site. Acute effect resulting in loss of flora and fauna. Chronic effect resulting in deterioration of water quality Emissions to ground and ground water.	Low	High	Medium	Parts of the site lie within Groundwater Source Protection Zone 1. Tanks are in close proximity to surface water bodies. Provision of suitably structurally integral tanks constructed from concrete or steel and glass reinforced plastic. All tanks are subject to asset inspection and proactive maintenance programme including regular visual inspection for cracks or weeping. Visual checks during regular day-to-day operations and scheduled preventative maintenance of equipment, such as pumps, pipes, joins etc Spill kits available on site with staff trained in their use. Biogas condensate discharged back to the works inlet through site drainage system.	Medium

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						There are no point source emissions to water with drainage system pumping back to works inlet.	
Generation of solid waste resulting in litter	Normal	Releases of litter to the environment. Visual nuisance and local loss of amenity	Low	Low	Low	Site operations do not give rise to large amounts of solid wastes and litter that would be prone to dispersion by wind. Rags are stored within skips and retain high moisture content. Waste is stored securely for collection by appropriately licensed approved contractors. Litter picking activities are completed as required.	Low

Where the TGN or H1 assessment shows that odours are an important issue, send us your odour management plan.

Due to the nature of the process, the installation has the potential to generate odorous emissions resulting from the permitted activities. Odour management is a key operational objective, as summarised in the risk assessment table below. A copy of the site-specific odour management plan has been appended to this application as Appendix E.

Table C3-3b(ii) Odour risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
H_2S/biogas emissions from uncovered tanks	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	High	Low	Medium	Biogas will principally be generated in primary digestion tanks which are covered with floating roof gas holders. The nearest residential properties are located approx. 300m to the south-east of the digesters and the nearest commercial buildings are located approx. 330m to the north-east. Picket fence thickeners, SAS tank, reception tank and blending tank are all uncovered and routinely used for sludge processing and are located approx. 400m from residential receptors and approx. 260m from commercial buildings. Small amounts may be generated within uncovered secondary digesters which are located on north of site away from residential receptors. Residential receptors are located approx. 440m to the north-west and commercial buildings are located approx. 300m to the north-east. H_2S production is controlled through the digestion process which can be manually overridden.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Loss of containment from biogas storage and biogas pipework	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	Medium	Low	Biogas is principally stored within the floating roof gas holders which are suitably sized to manage biogas generation. The gas system utilised is subject to regular preventative maintenance to minimise the potential for leaks occurring. The system is also protected with a comprehensive array of pressure and flow sensors and with isolation valves to minimise the potential for release if a leak is detected. Personnel on site wear portable gas detectors in order to alert staff to presence of biogas. Physical protection measures in place for biogas storage, including lightning protection, secure access to the top of the primary digesters (where biogas storage is located) and biogas pipework is guarded. PRVs available to safely manage pressures within the biogas storage and prevent under or over pressurization.	Low
Activation of biogas pressure relief valve	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors	Low	Low	Low	PRVs are only activated in emergency situations to maintain safety within the biogas system and are re-seated/repaired promptly to minimize biogas emissions.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
		Loss of amenity from odour nuisance				PRVs subject to monitoring visual checks by site personnel. Biogas is principally stored within floating roof gas storage which is suitably sized to manage biogas generation and act as buffer storage for biogas. Site has two CHP engines, four boilers and multiple flares which are used in order of preference to maximise recovery of energy. CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets, with flares maintained in good working order should they need to be used. The nearest residential properties approx. 300m south-east from biogas storage and nearest commercial buildings approx. 330m north-east.	
H_2S/biogas emitted when biogas cannot be combusted in engine, boilers or flare	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	Low	Low	Biogas is principally stored within the floating roof gas storage which is suitably sized to manage biogas generation and act as buffer storage when biogas cannot be combusted. Site has two CHP engines, four boilers and two flares giving several outlets for biogas. The nearest residential properties are located approx. 300m to the south-east of the biogas storage with the nearest commercial buildings located approx. 330m to the north-east.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets, with flares maintained in good working order should they need to be used.	
Storage of treated digested sludge cake	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	High	Low	Medium	Digested sludge cake is stored on an open, engineered pad within the northern part of the site located approx. 350m from the nearest residential properties and approx. 300m to the north-west of the nearest commercial receptors. Digested sludge cake is an inherently low odour material and air dispersion is reduced by shielding provided by vegetation and tree screening to the north and west.	Low
Failure of odour control unit	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	High	Medium	The odour control unit is subject to regular preventative maintenance. Media is replaced in line with the manufacturer's recommendations	Low
Storage of site generated wastes	Normal	Emissions to air and dispersion leading to inhalation by local human receptors	Low	Low	Low	Wastes generated on site are not inherently odorous and is stored securely for collection by appropriately licensed approved contractors.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
		Loss of amenity from odour nuisance					
Transfers of cess waste via site customers	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Medium	Medium	Medium	Waste transfers take place via dedicated import point via transfer pipework, with odour abatement via an OCU. Residential receptors are located approx. 180m from the waste import logger. Fugitive emissions of odour will be short-lived episodes and the impact on receptors will be dependent on distance and wind direction. Customers delivering highly odorous wastes repeatedly can have site access withdrawn. CCTV and data from site logger is accessible to cross-reference odour complaints.	Low

If the TGN or H1 assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)

The installation has the potential to generate noise as a result of the permitted activities. Potentially noisy activities are subject to a number of process controls and noise management is a key operational objective, as summarised in the risk assessment table below.

Table C3-3b(iii)Noise risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Operation of CHP engines	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors	High	Low	Medium	The CHP engines are acoustically baffled, self-contained and designed for external applications therefore noise emissions are already low. The CHP engine is located away from sensitive human receptors, approx. 430m from the nearest residential properties and approx. 430m from the nearest commercial buildings. Good maintenance of plant to ensure that excessive noise levels are not generated. Regular checks of noise mitigation measures fitted to items of plant. Such measures include silencers and baffles fitted to specific areas of plant. Where repair or replacement is required, the plant will, where possible, be taken out of service until repair or replacement of parts has been undertaken.	Low
Operation of fans on air cooled radiators	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors	High	Low	Medium	Air cooled radiators do not give rise to high levels of noise and are only used as required. Such assets are located away from sensitive human receptors, approx. 430m from the nearest residential properties and approx. 430m from the nearest commercial buildings.	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
						Good maintenance of fans to ensure that excessive noise levels are not generated. Where repair or replacement is required, this will be completed promptly.	
Vehicle movements - tanker deliveries of waste and bulk collections of digested sludge cake. Site vehicle operations.	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors. Generation of vibration with ground transmission, causing loss of amenity to local human receptors.	High	Medium	High	Imports can be made 24/7 and take place to an import point on the Western side of site, approx. 180m from nearby residential receptors. Vehicles access the site via a good vehicle access road that avoids passing residential receptors. Tanker deliveries of inter site sludge can take place 24/7 but the import point is on the eastern side of the site, away from sensitive receptors. Vehicle movements along the access road and across the site subject to speed limit to reduce generation of noise. Shovel loading of digested sludge cake takes place on the open, engineered pad. However, this only takes place during daytime hours and does not routinely happen seven days per week.	Low
Vehicle movements - tanker deliveries	Normal	Generation of noise with air transportation, causing loss	High	Medium	High	Deliveries likely to take place during daytime hours to delivery areas that centrally or	Low

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
of chemicals and raw materials		of amenity to local human receptors. Generation of vibration with ground transmission, causing loss of amenity to local human receptors.				southern located and away from sensitive receptors. Vehicle movements across the site subject to speed limit to reduce generation of noise.	
Operation of emergency flare	Abnormal	Generation of noise with air transportation, causing loss of amenity to local human receptors.	High	Low	Medium	Use of the emergency flares is minimized by prioritizing use of the CHP and boilers with use of the flare recorded. The emergency flare is located away from sensitive receptors, approx. 390m from nearby residential properties and approx. 450m from the nearest commercial property.	Low

Table C3-3b (iv) - Environmental Risk Assessment and Accident Management Plan

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
Major fire and/or explosion causing the release of polluting materials to air, water or land.	Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality. Injury to staff, fire fighters or arsonists/vandals.	Low	High	Medium	Follow site Incident Response Plan and inform relevant authorities. Management systems requires DSEAR assessment which is adhered to by site operations. Designated ATEX zones on site and lightning protection system in place around biogas storage. Fire alarm systems installed and maintained. Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop gas flows, electric temperature sensor, pressure monitors, flame arrestors, etc. Warning signs clearly displayed, and staff wear gas alarms to alert to the presence of biogas. All visitors subject to site inductions and accompanied. Permit-to-work system in place. Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively. Smoking only permitted in designated areas of site.	Low
Minor fire causing the release of polluting	Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory	Low	Medium	Low	Follow site Incident Response Plan and inform relevant authorities.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
materials to air, water or land	irritation, illness and nuisance to local population Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality. Injury to staff, fire fighters or arsonists/vandals.				Management systems requires DSEAR assessment which is adhered to by site operations. Designated ATEX zones on site and lightning protection system in place around biogas storage. Fire alarm systems installed and maintained. Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop gas flows, electric temperature sensor, pressure monitors, flame arrestors, etc. Warning signs clearly displayed, and staff wear gas alarms to alert to the presence of biogas. All visitors subject to site inductions and accompanied. Permit-to-work system in place. Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively. Smoking only permitted in designated areas of site.	
Failure to contain firefighting water	Emissions to ground and ground water of contaminated firefighting water entering soil and/or groundwater. Run-off from site to surface water courses. Harm to aquatic flora and fauna.	Low	Medium	Low	Follow site Incident Response Plan and inform relevant authorities. Site surfaces fall to the site drainage system which has been designed to sufficient capacity to contain firefighting water.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
	Chronic effect on water quality				Arrange for off-site tankering of firefighting water, if required.	
Accidental explosion of biogas	Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land	Low	High	Medium	Follow site Incident Response Plan and inform relevant authorities. Management systems requires DSEAR assessment which is adhered to by site operations. Designated ATEX zones on site and lightning protection system in place around biogas storage. Fire alarm systems installed and maintained. Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop gas flows, electric temperature sensor, pressure monitors, flame arrestors, etc. Lightning protection system installed Likelihood reduced by availability of multiple on site uses of biogas (CHP, boilers and emergency flares) and use of pressure release valves as a safety measure.	Low
Significant leak of biogas to atmosphere	Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population.	Low	Medium	Low	Site assets are protected by physical means to prevent vehicle strike and exposed pipework is guarded. Regular proactive and preventative maintenance and regular visual checks.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
	Global warming potential of greenhouse gases.				Pressure relief valves are present to avoid over-pressurisation of biogas system.	
Leaks of emission to air, but principally NOx.	Emissions to air and dispersion leading to harm to protected nature conservation sites – SSSIs, SAC and SPA. Harm to protected site through toxic contamination, nutrient enrichment, disturbance etc.	Medium	Low	Low	Site is not located within the boundaries of an AQMA. The nearest designated protected habitat is a SSSI 450m from the site. There is one additional SSSI and two LNRs within 2 km of the site and one SAC within 10 km of the site. There are also six non-statutory designated LWS's within 2 km of the site, with the Maple Lodge LWS and Springwell and Stocker's Lakes LWS located adjacent to the boundaries of the site. Previous emissions modelling submitted shows that deposition and impacts on habitats sites are unlikely to be unacceptable. There are no changes to emissions sources with this variation Site operations will be subject to emission limits under current Regulations with infrastructure designed to minimise uncontrolled releases. Checks, monitoring and preventative maintenance will further minimise fugitive emissions.	Low
Spillage of sludges or liquid during tanker transfer operations e.g. pipework leaks	Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.	Low	Low	Low	Transfer operations of waste materials is largely an automatic process controlled by the Process Controllers and parameters set within the SCADA system. All pipework is standardised, including tanker couplings. Tanker offloading area at the inlet and	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
	Harm to aquatic flora and fauna. Chronic effect on water quality				sludge reception tank is of concrete construction with kerbing to prevent release to ground. Tanker offloading operations are supervised. In event of a spillage, follow site spillage response plan and inform relevant site personnel and relevant authorities. Spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage. Site drainage returns to works inlet providing treatment process for sludge or arrange off-site tankering of waste to another site. Sludge is relatively viscous and not highly mobile.	
Spillage of raw materials during (e.g. fuel oil, polymer, anti-foam) during use, transfer and disposal operations.	Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses. Harm to aquatic flora and fauna. Chronic effect on water quality	Low	High	Medium	Parts of the site lie within Groundwater Source Protection Zone 1 although raw materials are not generally stored within these areas. Raw materials are stored on made ground, within bunded containers and/or on bunds to contain spillages of 110% of the volume. Raw materials are stored away from surface water bodies. Contents of bunds are regularly checked during environmental audits and after periods of heavy rainfall and emptied as required. Transfer pipework is aboveground and double walled, with a leak detection system.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
					In event of a spillage, follow site spillage response plan and inform relevant site personnel. COSHH data sheets available. Deliveries to site are made by approved suppliers. Use of raw materials is carried out by trained personnel or automatically controlled processes. Penstock valves available within fuel oil and chemical delivery areas to contain large spillages. In the event of a minor spillage, spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage if suitable. Site drainage returns to works inlet providing treatment process for suitable materials or arrange off-site tankering of waste, if required.	
Spillage of sludges (e.g. raw sludge, digested sludge) during processing and transfer operations e.g. tank overtopping, pipework leaks	Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses. Harm to aquatic flora and fauna. Chronic effect on water quality	Low	High	Medium	Parts of the site lie within Groundwater Source Protection Zone 1. Open topped tanks are in close proximity to surface water bodies. Processing and transfer operations of waste materials is largely an automatic process controlled by the Process Controllers and parameters set within the SCADA system.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
					Storage and digestion tanks are fitted with sensors to monitor levels within a tank and can inhibit additional pumping if high alarms activate. Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively and minimise the risk of spillages. In event of a spillage, follow site spillage response plan and inform relevant site personnel and relevant authorities. Spill kits are provided around the site which can be used to contain a spillage and direct it towards site drainage. Site drainage returns to works inlet providing treatment process for sludge or arrange off-site tankering of waste to another site. Sludge is relatively viscous and not highly mobile.	
Failure of sludge storage tanks / digester tanks	Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses. Harm to aquatic flora and fauna. Chronic effect on water quality.	Low	High	Medium	Follow site Incident Response Plan and inform relevant authorities. Regular infrastructure inspections for tanks and pipework and planned preventive maintenance system in place. Regular visual inspections for tanks and pipework and reactive maintenance. In-line flow monitoring in key locations and tank level monitoring would identify losses and enable a quick response.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
					Sludge is relatively viscous and not highly mobile limiting the distance it can spread in a short time period. Spillages to made ground connect to site drainage, which returns to the head of the works. Spillages to unmade ground are removed as soon as possible to minimise infiltration.	
All on-site hazards: machinery	Direct physical contact with human population and /or livestock after gaining unauthorised access to the installation Bodily injury	Low	High	Medium	Direct physical contact is minimised by activity being carried out within enclosed digesters and tanks. Site activities are managed and operated in accordance with a management system. Site physical security measures, including site security personnel, perimeter fence, CCTV and access control to prevent unauthorised access. Site is manned 24/7. Assets are protected by various physical means including fencing, kerbing and bollards to prevent vehicle strikes. Site has traffic management including partial one-way systems to minimise the need to reverse. Use of banksmen as appropriate. Vehicles equipped with reversing alarms.	Low
Vandalism causing the release of polluting materials to air (smoke	Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory	Low	High	Medium	Unauthorised access is unlikely to happen and minimised by physical site security measures and effective management systems.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
or fumes), water or land.	irritation, illness and nuisance to local population Emissions to ground and ground water of digestate contaminating soil and/or groundwater. Run-off from site polluting surface water courses. Harm to aquatic flora and fauna and chronic effect on water quality. Injury to staff, fire fighters or arsonists/vandals.				Site has access controlled barrier entry for all vehicular access. Fence runs the perimeter of the site. Additional security fences around some assets and other assets are kept within locked containers or buildings. Warning signs are displayed.	
Flooding from rivers, streams and groundwater	Emissions to surface water course and harm to aquatic flora and fauna. Infiltration to ground and groundwater. Harm to aquatic flora and fauna and chronic effect on water quality.	Medium	Medium	Medium	Large areas of the site are within a Flood Zone 2 and parts of the site are within Flood Zone 3. Part of the site is protected by flood defences. Import areas and sludge dewatering plant is within Flood Zone 2, indicating there is a medium risk of flooding. Sludge digestion tanks and the cake pad are within Flood Zone 1 meaning there is a low probability of river flooding for these assets. General wider works designed to minimise risk of localised works flooding due to storm surges. Follow site Incident Response Plan and inform relevant authorities.	Low

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
					Take appropriate corrective and preventative actions to minimise environmental impact. Site has implemented flood resilience works on some assets, but site is not known to suffer from flooding.	
Flooding due to drain blockages and/or excessive rainfall causing localised on-site surface water flooding	Emissions to surface water course and harm to aquatic flora and fauna. Infiltration to ground and groundwater. Harm to aquatic flora and fauna and chronic effect on water quality.	Medium	Low	Low	Site wide drainage system linked to main sewage works, which includes additional capacity in storm tanks within the works to manage additional flows. Follow site Incident Response Plan and inform relevant authorities. Take appropriate corrective and preventative actions to minimise environmental impact	Low
Loss of mains power leading to failure of pumps / control systems and possible leaks and escape of sludge.	Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses. Harm to aquatic flora and fauna.	Low	Medium	Low	Site CHP engine is able to supply electricity to the site using biogas supplies on site. Standby generators provide back-up power / contingency plans to provide power to critical operations in the event of an electrical outage. Failsafe systems in place to ensure sludge remains in situ in the event of a loss of power and that systems are promptly returned into operation. Site wide drainage system linked to main sewage works in the event of a spillage.	Low

Table C3-3b (v) - Bioaerosol Risk Assessment

The installation has the potential to generate bioaerosols which may pose a risk to nearby sensitive receptors. Please see site-specific bioaerosol risk assessment presented in Appendix F.

3c - Types and amounts of raw materials

Table C3-3c – Types and amounts of raw materials

Name of the installation:	Maple Lodge Sludge Treatment Centre				
Schedule 1 Activity	Description of raw material and composition	Maximum storage amount (tonnes or as stated)	Annual throughput (tonnes per annum or as stated)	Description of the use of the raw material including any main hazards (include safety data sheets	Alternatives
	Sludge polymer – belt thickeners Product name: Flopam EM640HIB	6,000 L stored in IBCs on portable bunds	20 tonnes	Agent used in sludge thickening process	Standard industry chemical
	Sludge polymer – drum thickener Product name: Flopam EM640HIB	6 ,000 L stored in IBCs on portable bunds	20 tonnes	Agent used in sludge thickening process	Standard industry chemical
	Sludge polymer – centrifuges Product name: Flopam FO4650VHM /BULK	28 tonnes stored in a bunded silo	400 tonnes	Agent used in sludge thickening process	Standard industry chemical
	Anti-foam Product name: Flofoam 139F	3,000 L stored in IBCs on portable bunds	20 tonnes	Agent used to control foaming within primary digester tanks and centrate.	Standard industry chemical
	Anti-struvite chemical Product name: FLOSPERSE PX 60 N	2,000 L stored in IBCs on portable bunds	20 tonnes	Agent used to reduce struvite formations from the centrate	
	Fuel oil White diesel	140,000 litres stored in double skinned fuel tanks	50 tonnes 15 tonnes*	Back-up fuel for boilers and standby generators Monthly generator testing	

	Lubricating oils Product name: MOBIL DTE 10 EXCEL 46 MOBIL SHC 630	4,800 litres stored in oil tanks, within engine container	5 tonnes	Equipment lubricant	
	Glycol coolant Texaco Delo XLC Antifreeze/Coolant - Premixed 40/60	2.0 tonnes stored in bunded IBCs	4.0 tonnes	CHP engine coolant	
*15 tonnes used during monthly testing for two back-up generators (approx. 8,000 litres per generator per annum) but excludes fuel used from emergency use during periods of grid failure.					

4 - Monitoring

4a - Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

The air emission points A4-A9 and A10-A11 are monitored in accordance with EA guidance and the requirements of MCPD.

The site has a number of emission points to air. Points, A8a and A8b (CHP engines) and A5a and A5b (boilers) are subject to gas monitoring in accordance with the requirements of the current environmental permit, MCPD and Environment Agency guidance.

Emission points A11 and A12 are subject to emissions monitoring in accordance with the requirements of the current MCPD permit and Environment Agency guidance.

Hours of operation of the biogas flares (A6 and A9) are monitored and logged. In the unlikely event that the total annual hours of operation exceed 10% of the hours in a year (876 hours), emissions from the flares would be subject to monitoring in accordance with EA guidance.

There is no routine monitoring proposed for points A10 (OCU) and A13-A20 (PRVs).

4b - Point source emissions to air only

4b1 Has the sampling location been designed to meet BS EN 15259 clause 6.2 and 6.3?

No.

4b2 Are the sample ports large enough for monitoring equipment and positioned in accordance with section 6 and appendix A of BS EN 15259?

No.

4b3 Is access adjacent to the ports large enough to provide sufficient working area, support and clearance for a sample team to work safely with their equipment throughout the duration of the test?

No.

4b4 Are the sample location(s) at least 5 HD from the stack exit

No.

4b5 Are the sample location(s) at least 2 HD upstream from any bend or obstruction?

No.

4b6 Are the sample location(s) at least 5 HD downstream from any bend or obstruction?

No.

4b7 Does the sample plane have a constant cross-sectional area?

No.

4b8 If horizontal, is the duct square or rectangular (unless it is less than or equal to 0.35 m in diameter)

No.

4b9 If you have answered 'No' to any of the questions 4b1 to 4b8 above, provide an assessment to how the standards in BS EN 15259 will be met.

Monitoring has been completed under the current permit via a combination of other standards and methods, as per previous monitoring requirements stated within the Environmental Permit. This has been in accordance with Environment Agency guidance note M2 'Monitoring of stack emissions to air' which is based on BS EN 15259.Not all sampling ports and locations may meet all requirements and therefore the answer 'no' has been provided while these are checked onsite.

5 - Environmental impact assessment

5a Have your proposals been the subject of an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment]?

No.

6 - Resource efficiency and climate change

6a - Describe the basic measures for improving how energy efficient your activities are

The CHP engines are suitably sized to maximise energy utilisation for the parasitic load, while minimising the use of the flare. Recovered heat from the CHP engines is sufficient, under normal conditions, to supply hot water to the digester heat exchanges in order to maintain the optimum digester operating temperatures (approximately 35°C +5°C / -3°C). This reduces requirements of auxiliary boilers which would normally only be used during periods of low ambient temperatures or CHP engine down time.

Low energy lighting is installed across the plant.

6b - Provide a breakdown of any changes to the energy your activities use up and create

The main site energy source is electricity from the CHP engines using indigenous biogas, supplemented by fuel oil as a back-up source for standby generator use. The CHP engines combust indigenous biogas with the electricity used on site and exported to the National Grid – electricity could also be imported from the National Grid in the event of there being insufficient electricity generation. The CHP engines also provide useable heat for hot water to the digesters, via heat exchanges. Four auxiliary boilers are available on site to supplement heat from the CHP engines, as required. These boilers are dual fuelled and can use either indigenous biogas or imported fuel oil as a back-up fuel.

Use of heat from the CHP engine reduces the demand on supplementary fuels in the four boilers.

6c - Have you entered into, or will you enter into, a climate change levy agreement?

No, the activities are not eligible to take part in the CCL Scheme.

Describe the specific measures you use for improving your energy efficiency

The production and use of biogas to generate electricity and produce heat (which is used in the digesters heat exchange system) on site minimises the use of fossil fuels onsite, whilst recovering biological wastes. Location of the heat exchange, boilers and CHP engines within close proximity minimises transmission losses on site, improving the efficiency of the process. Thames Water has a 100% renewable energy supplier.

Regular and proactive maintenance of pumps and insulation of pipework will improve efficiency and minimise the electrical demands and heat losses on site.

6d - Explain and justify the raw and other materials, other substances and water that you will use

See response to question 3c above.

The processes take digested sludge which would otherwise require additional disposal and recover energy and nutrients which can be put to beneficial use.

Small quantities of chemical raw materials are required to control and maintain the process. These are all proven materials that are extensively used within the water industry.

The other main raw materials are used in the generation of electricity and heat and maintenance of combustion plant which is supplied to the treatment process.

All raw materials are purchased via approved suppliers in accordance with quality standards/quality systems to pre-established material specifications, as recommended by manufacturers, with preference given to materials with lower environmental impacts where possible.

6e Describe how you avoid producing waste in line with Council Directive 2008/98/EC on waste

The facility is a waste treatment plant, and the primary wastes produced through the processes on site are maintenance wastes. Production of maintenance waste is minimised by ensuring that preventative maintenance is carried out based on a combination of manufacturers' best practice and operational experience.

6. Form C4 Questions

1 About the permit

1a What waste operations are you applying to vary?, Waste operations which do not form part of an installation

The original CHP permit was a waste level permit. This has now been incorporated within the installation permit as a DAA.

See response to Form C2 Q2C2 for full list of permits at the site.

1b –types of waste accepted and restrictions

The EWC list is included in the responses to form C3.

1c Deposit for recovery purposes

This is not a deposit for recovery application.

2 Point source emissions to air, water and land

Please see responses to form C3.

3 Operating techniques

3a Technical standards

Please see responses to form C3.

3b General requirements

Please see responses to form C3.

4 Monitoring

4a Describe the measures you use for monitoring emissions by referring to each emission point in Table 2 above

Please see responses to form C3.

4b Point source emissions to air only

Please see responses to form C3.

7. Form C6 Questions

The relevant questions within the form are those applicable to effluent and / or surface water run-off arising from the operation of an installation.

Q1About the effluent – details and type, continued

1a Give a brief description of the effluent discharge you want a permit for, for example, treated domestic sewage effluent

This effluent is a mixture of waste liquors from the operation of the installation for the anaerobic treatment of separated sewage sludge. It primarily comprises of dewatering liquors returned to the work inlet following the dewatering of treated sewage sludge. Lower volume constituents will include rainfall; biogas condensate; siloxane filtrate; boiler blowdown water; contaminated run off and washdown water. The only wastes treated within the installation are sewage related, either being separated from the UWWTD flow in the wider works, or comprise of waste imports, principally of sludge from smaller satellite treatment works, with lower volumes of cess, septic tank and similar sewage related arisings delivered by third parties.

1b Give this effluent a unique name

Liquor returns.

1d Have you obtained all the necessary permissions in addition to this environmental permit to be able to carry out the discharge (see B6 guidance notes for more details)?

Yes. The discharge is into the inlet of a sewage works controlled by the applicant.

Q2 About the effluent – how long will you need to discharge the effluent for?

2c Will the discharge take place all year?

Yes, the discharge will take place all year.

Q3 How much do you want to discharge?

3b What is the maximum volume of effluent you will discharge in a day?

1,500 Cubic metres

3c What is the maximum rate of discharge?

17.4 Litres / second

3d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day?

1,500 Cubic

3f For each answer in question 3, show how you worked out the figure on a separate sheet

Q3b –based on the maximum site input of 1,500 tonnes per day to the digesters, assuming 1 tonne = 1 cubic metre. The liquor arisings must come from the installation inputs as there is limited additional water inputs

(primarily boiler feed water). Actual discharge will be slightly lower as no allowance has been made for water entrained in the produced sewage cake.

Q3c – this is based on 1,500,000 litres (1,500 x 1000) divided by 86,400 seconds (24 x60 x 60). Arisings from sources such as dewatering are constant as the plant runs continuously. This gives a value of 17.3611, rounded to 17.4 litres per second.

Q3d – based on the maximum site input of 1,500 tonnes per day to the digesters, assuming 1 tonne = 1 cubic metre. The liquor arisings must come from the installation inputs as there is limited additional water inputs (primarily boiler feed water). Actual discharge will be slightly lower as no allowance has been made for water entrained in the produced sewage cake.

Q4 No questions

Q5 Should your discharge be made to the foul sewer?

5a How far away is the nearest foul sewer from the boundary of the premises?

Not applicable, the site is located within the curtilage of a sewer treatment works and discharges into the works inlet via the site drainage system.

5b2 Discharges from all other premises including trade effluent

Not applicable, the site is located within the curtilage of a sewer treatment works and discharges into the works inlet via the site drainage system.

Q6 How will the effluent be treated?

6a Do you treat your effluent?

No. The Effluent generated by the process of treating sewage and sewage related arisings within the installation is returned to the inlet of the wider STW, where it is subject to aerobic treatment in a mixture with UWWTD related waste waters.

6b Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out

Order of Treatment	Code Number	Description
First	09	Primary settlement within sewage works
Second	31	Activated sludge process
Third	21	Sand filtration

6c You must provide details on a separate sheet of the final effluent discharge quality that the overall treatment system is designed to achieve

The final effluent discharge from the wider sewage treatment works is specified in Environmental Permit TH/CNTD.0071/008.

Q7 What will be in the effluent?

7b Are any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' added to or present in the effluent as a result of the activities on the site?

At present, no sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken. Only limited chemicals are added to the process within the installation boundary, primarily antifoam (in low doses, as required), polymer to aid dewatering of sludge and caustic soda to alter the pH. A review of the appropriate MSDS data does not indicate the presence of 'specific substances' within those chemicals.

7c Have any of the specific substances listed in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater' been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

At present, no routine sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken either for effluent from the installation or within the wider sewerage catchment.

7d Are there any other harmful or specific substances in your effluent not mentioned in 'Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater'?

At present, no sampling or analysis for all substances listed within the referenced risk assessment at the site has been undertaken. A review of the MSDS sheets for chemicals used within the installation does not indicate the presence of any other harmful or specific substances.

7e If you have answered 'No' to any of questions 7a to 7d provide details on a separate sheet of how you have established that the effluent is not likely to contain specific substances

A review has been undertaken of the relevant MSDS sheets for chemical used routinely within the installation to look for substances identified within the risk assessments listed.

7f What is the maximum temperature of your discharge?

20°C back into the sewage works.

7g What is the maximum expected temperature change compared to the incoming water supply?

0°C.

Q8 Environmental risk assessments and modelling

8b Discharges to lakes, estuaries, coastal waters or bathing waters

The installation does not discharge to lakes, estuaries, coastal waters or bathing waters.

8d Discharges to groundwater

The installation does not discharge to groundwater.

8e Discharges to freshwater (non-tidal) rivers from an installation, including discharges via sewer

No modelling has been undertaken on the output from the installation at present, due to a lack of quality data and confirmation of flows. The final effluent discharge from the wider works, which includes the installation arisings has previously been subjected to modelling as part of the environmental permitting discharge application process.

8f Environmental impact assessment

No environmental impact assessment has been carried out on the installation, as it is an existing facility.

Q9 Monitoring arrangements

9a What is the national grid reference of the inlet sampling point? (for example, SJ 12345 67890)

Not applicable to this installation.

9b What is the national grid reference of the effluent sample point?

No sampling point installed at present.

9d What is the national grid reference of the flow monitoring point?

No flow meter installed.

9e Does the flow monitor have an MCERTS certificate?

No. No flow meter installed.

9f Do you have a UV disinfection efficacy monitoring point?

No. Not installed as part of this installation.

9h You should clearly mark on the plan the locations of any of the above that apply to this effluent

Please see site emission point plan.

Q10 Where will the effluent discharge to?

10a Where the effluent discharges to

Non-tidal river, stream or canal.

Appendix 5 – Discharges to non-tidal river, stream or canal

A5.1 Give the discharge point a unique name, for example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

Outlet 1.

A5.2 Give the national grid reference of the discharge point

TQ 04200 91940.

A5.3 Give the name of the watercourse, canal or the main watercourse it is a tributary of if you know it

Grand Union Canal & River Colne, via the wider UWWTD sewage treatment works.

A5.4 Is the discharge into a:

Non-tidal river.

A5.5 Does the discharge reach the watercourse or canal by flowing through a surface water sewer?

No.

A5.6 Does the watercourse dry up for part of the year?

No.

A5.61 If the watercourse does dry up for part of the year can you indicate a typical period when the surface water runs dry each year – start and finish (in months)

N / A.

A5.6.2 If the watercourse does dry up for part of the year, how many metres downstream of the discharge is it before the discharged effluent soaks in?

N / A

A5.7 Is the discharge made to a roadside drain or ditch?

No.

10b Is this effluent discharged through more than one outlet?

No.

10c If you answered yes to question 10b above make sure you show clearly on your discharge point appendix or appendices and site plan that this one effluent can discharge to more than one discharge point

N / A.

Appendix A. Figures

A.1 Site location plan

KEY:

Site Location

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprvd
P01	MAY. 2021	FOR INFORMATION	AR	MM	JK	MM

Jacobs

Jacobs House, Shrewsbury Business Park, SY2 6GG
Tel:+44(0)1743 284 8000 Fax:+44(0)1743 284 800
www.jacobs.com

Client

Thames Water

Project

STC IED PERMIT
MAPLE LODGE

Drawing title

FIGURE 1
SITE LOCATION PLAN

Drawing status

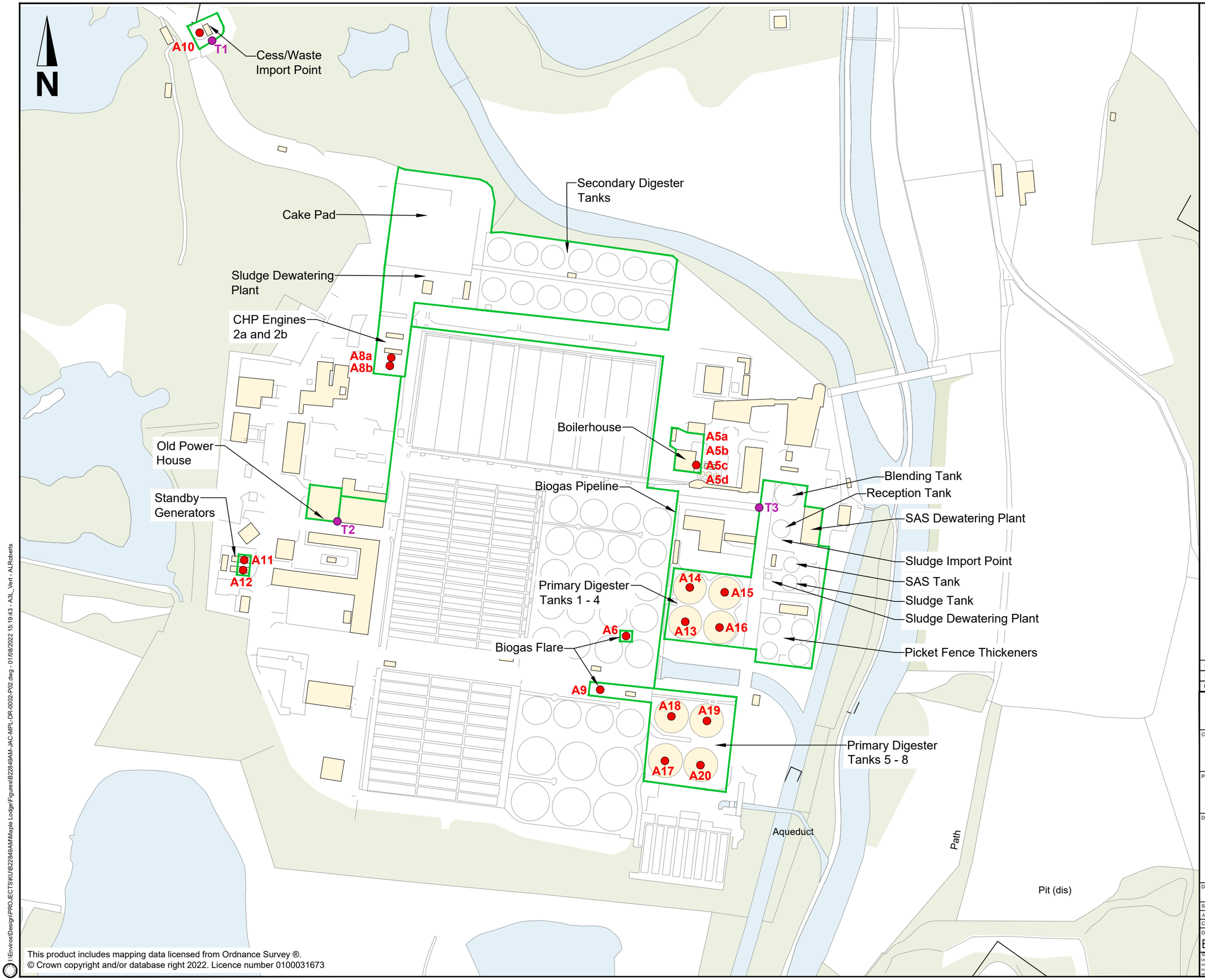
PERMITTING

Scale	1:25,000	DO NOT SCALE
Jacobs No.	B22849AM	Rev P01
Client no.		

Drawing number

B22849AM-JAC-MPL-DR-0001

A.2 Site layout



KEY:

- Installation Boundary
- Air Emission Point
- Liquor Transfer Point

A5a - Boiler 2a
A5b - Boiler 2b
A5c - Boiler 2c
A5d - Boiler 2d
A6 - Biogas Flare
A7 - Biogas Flare
A8a - CHP Engine 2a
A8b - CHP Engine 2b
A9 - Biogas Flare
A10 - OCU
A11 - Standby Engine 1
A12 - Standby Engine 2
A13 - Primary Digester PRV
A14 - Primary Digester PRV
A15 - Primary Digester PRV
A16 - Primary Digester PRV
A17 - Primary Digester PRV
A18 - Primary Digester PRV
A19 - Primary Digester PRV
A20 - Primary Digester PRV

0 20 40 60 80 100
METRES

P02	JUL. 2022	FOR INFORMATION	AR	MM	JK	MM
P01	APR. 2021	FOR INFORMATION	AR	MM	JK	MM
Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd

Jacobs
1108 Eskdale Road, Winnersh, Reading, RG41 5TU
Tel:+44(0)118 946 7000
www.jacobs.com

Client: Thames Water

Project: STC IED PERMIT
MAPLE LODGE STW

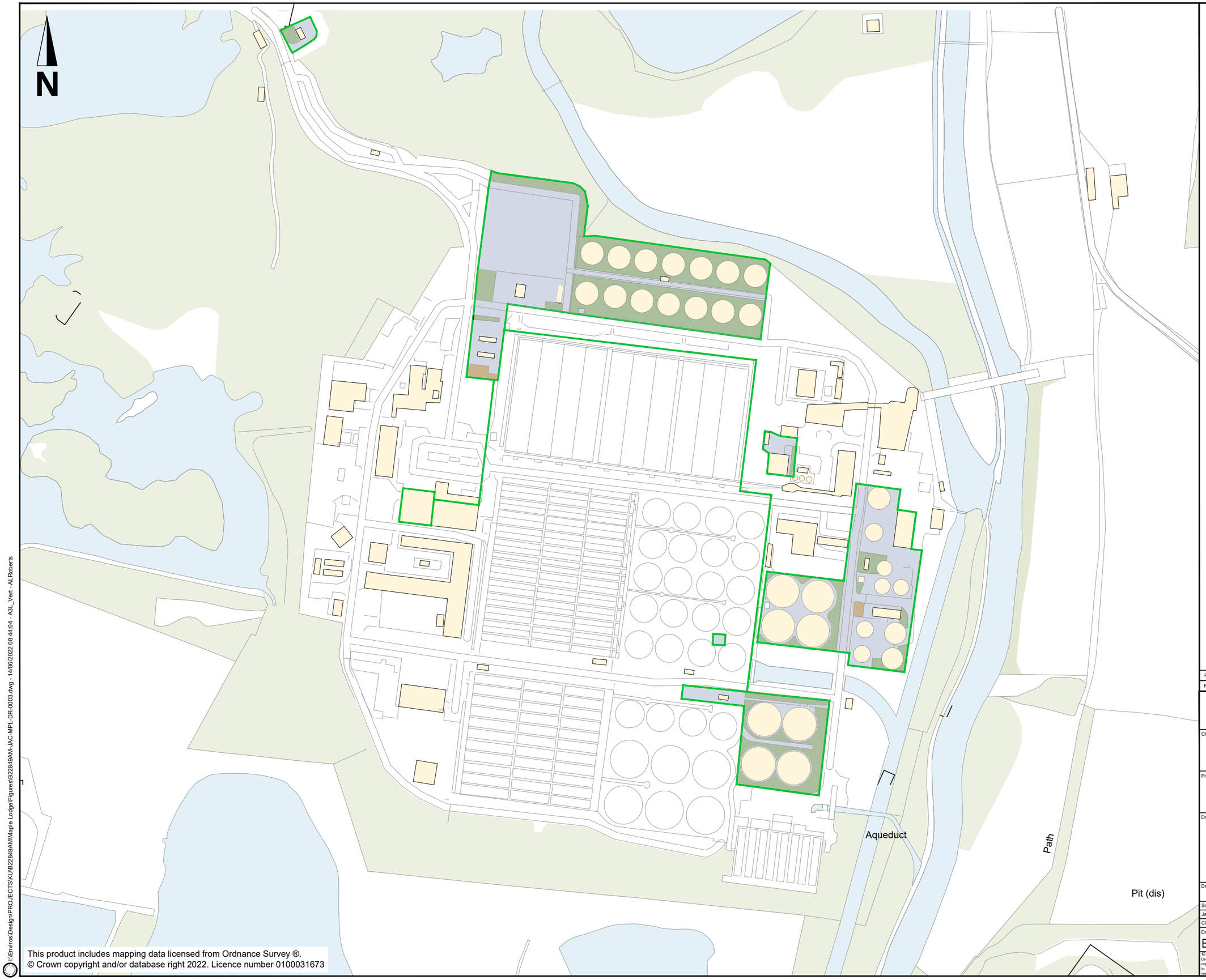
Drawing title: FIGURE 2
INSTALLATION BOUNDARY
AND AIR EMISSION POINTS

Drawing status: PERMITTING

Scale	1:2500	DO NOT SCALE
Jacobs No.	B22849AM	Rev P02
Client no.		

Drawing number: B22849AM-JAC-MPL-DR-0002

A.3 Site Impermeable and permeable surfaces plan



KEY:

- Installation Boundary
- Unmade Ground
- Area of Concrete
- Area of Gravel

0 20 40 60 80 100
METRES

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
P01	MAY. 2022	FOR INFORMATION	AR	TJ	JK	MM

Jacobs
1108 Eskdale Road, Winnersh, Reading, RG41 5TU
Tel:+44(0)118 946 7000
www.jacobs.com

Client: Thames Water

Project: STC IED PERMIT
MAPLE LODGE STW

Drawing title: FIGURE 3
SITE AREAS WITHIN THE INSTALLATION BOUNDARY

Drawing status: PERMITTING

Scale	1:2500	DO NOT SCALE
Jacobs No.	B22849AM	Rev P01
Client no.		

Drawing number: B22849AM-JAC-MPL-DR-0003

A.4 Site drainage plan

DO NOT SCALE - IF IN DOUBT ASK

Maple Lodge STW

KEY:

- Manhole (Combined)
- Manhole (Storm Water only)
- Gulley (Combined)
- Gulley (Surface Water Only)

Combined Sewer connection
Surface Water connection
Assumed Connection

EOT: End of Trace
UTT: Unable to Trace (Silted / Blocked)
ONV: Outlet Not Visible
RGY: Road Gully
UTL: Unable To Lift
KI: Kerb Inlet

Rev	Description	Authored	Checked	Approved	Date
A	Original	TC	OR	ED	03/06/2021

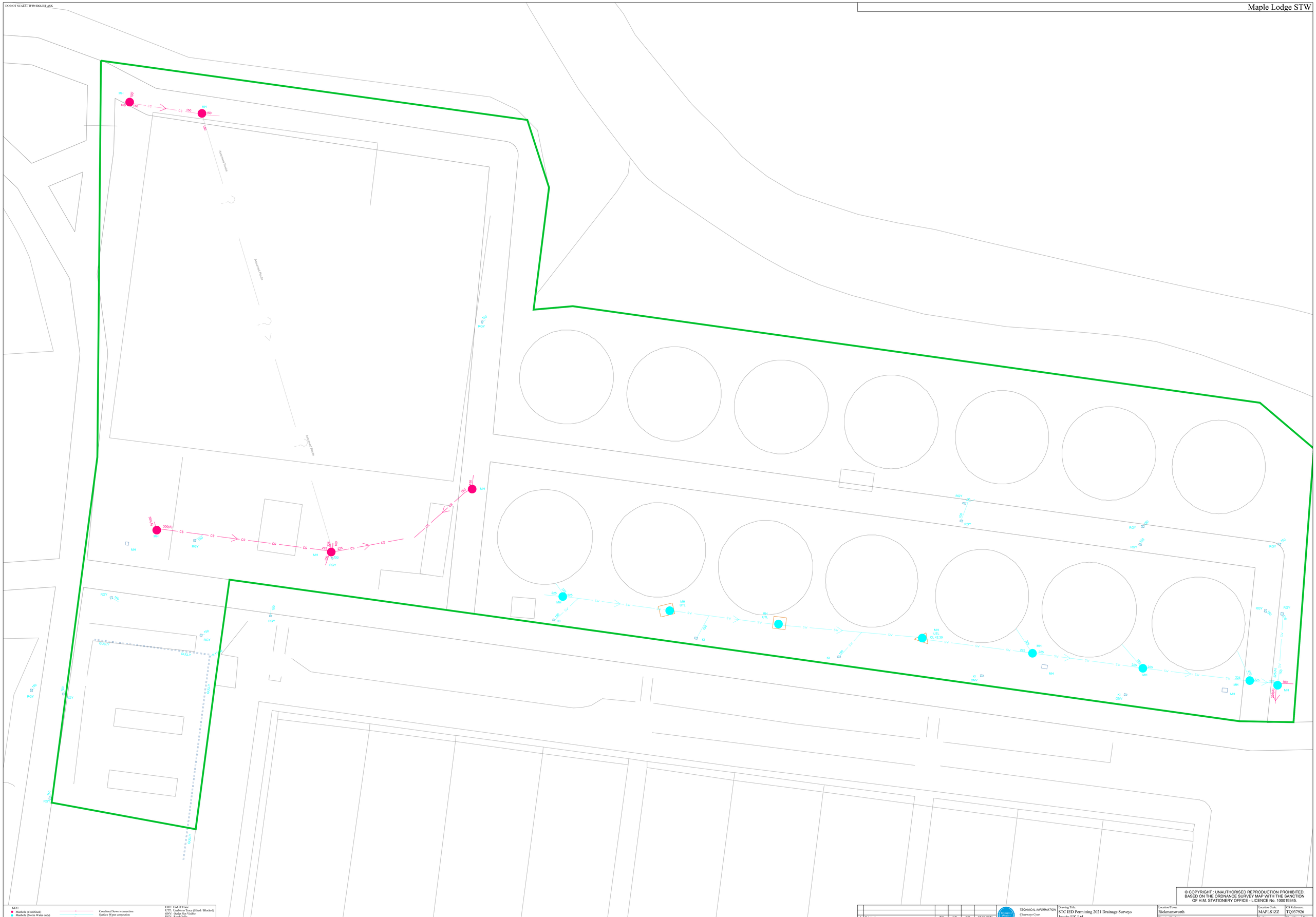
TECHNICAL INFORMATION
Clearwater Court
Vastern Road
Reading, RG1 8DB

Drawing Title: STC IED Permitting 2021 Drainage Surveys Jacobs UK Ltd

Location/Town:	Location Code:	OS Reference:	
Rickmansworth	MAPLS1ZZ	TQ037926	
Drawing Number:	Scale:	Sheet Size:	Rev:
MAPLS1ZZ-DPL-001-A	1:200	A0	A

DO NOT SCALE - IF IN DOUBT ASK

Maple Lodge STW



KEY:
- Manhole (Combined)
- Manhole (Storm Water only)
- Gulley (Combined)
- Gulley (Surface Water Only)
- Combined Sewer connection
- Surface Water connection
- Assumed Connection

EOT: End of Trace
UTT: Unable to Trace (Silted / Blocked)
ONV: Outlet Not Visible
RGY: Road Gully
GULLY: Gully / Lift
KI: Kerb Inlet

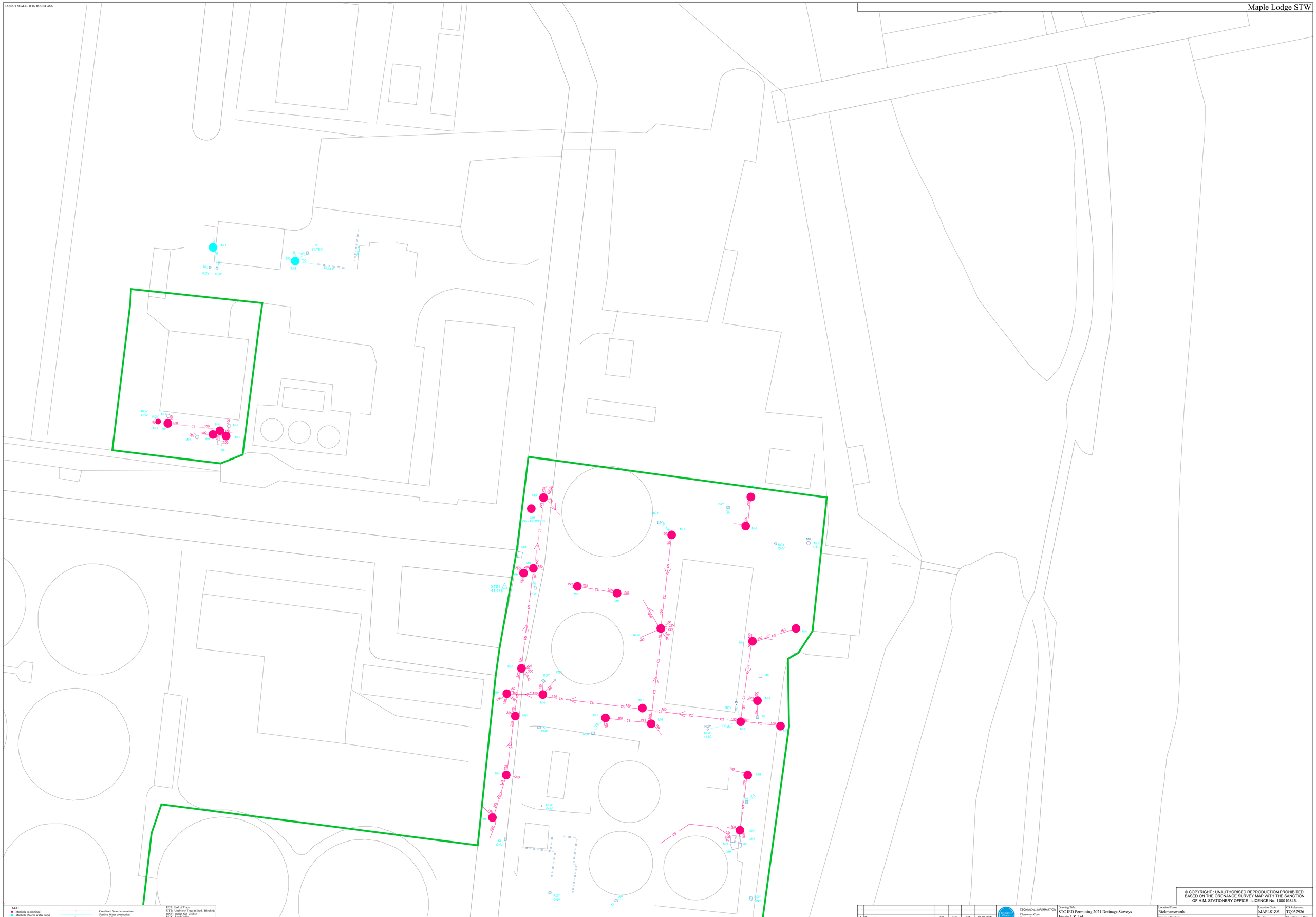
Rev	Description	Authored	Checked	Approved	Date
A	Original	TC	OR	ED	03/06/2021

TECHNICAL INFORMATION
Clearwater Court
Vastern Road
Reading, RG1 8DB

Drawing Title:	STC IED Permitting 2021 Drainage Surveys Jacobs UK Ltd
Location/Town:	Rickmansworth
Location Code:	MAPLS1ZZ
OS Reference:	TQ037926
Drawing Number:	MAPLS1ZZ-DPL-002-A
Scale:	1:200
Sheet Size:	A0
Rev:	A

DO NOT SCALE - IF IN DOUBT ASK

Maple Lodge STW



KEY:
- Manhole (Combined)
- Manhole (Storm Water only)
- Gulley (Combined)
- Gulley (Surface Water Only)
- Combined Sewer connection
- Surface Water connection
- Assumed Connection

EOT: End of Trace
UTT: Unable to Trace (Silted / Blocked)
ONV: Outlet Not Visible
MH: Manhole
UTL: Unable To Lift
KI: Kerb Inlet

Rev	Description	Authored	Checked	Approved	Date
A	Original	TC	OR	ED	03/06/2021

TECHNICAL INFORMATION
Clearwater Court
Vastern Road
Reading, RG1 8DB

Drawing Title:	STC IED Permitting 2021 Drainage Surveys
	Jacobs UK Ltd
Location/Town:	Rickmansworth
Location Code:	MAPLS1ZZ
OS Reference:	TQ037926
Drawing Number:	MAPLS1ZZ-DPL-003-A
Scale:	1:200
Sheet Size:	A0
Rev:	A

DO NOT SCALE - IF IN DOUBT ASK

Maple Lodge STW

ST02
43.280

ST03
44.095

KEY:

- Manhole (Combined)
- Manhole (Storm Water only)
- Gulley (Combined)
- Gulley (Surface Water Only)
- Combined Sewer connection
- Surface Water connection
- Assumed Connection

EOT: End of Trace
UTT: Unable to Trace (Silted / Blocked)
ONV: Outlet Not Visable
RGY: Road Gully
UTL: Unable To Lift
KI: Kerb Inlet

Rev	Description	Authored	Checked	Approved	Date
A	Original	TC	OR	ED	03/06/2021

TECHNICAL INFORMATION

Clearway Court
Vastern Road
Reading, RG1 8DB

Drawing Title:
STC IED Permitting 2021 Drainage Surveys
Jacobs UK Ltd

Location/Town:
Rickmansworth

Location Code:
MAPLS1ZZ

OS Reference:
TQ037926

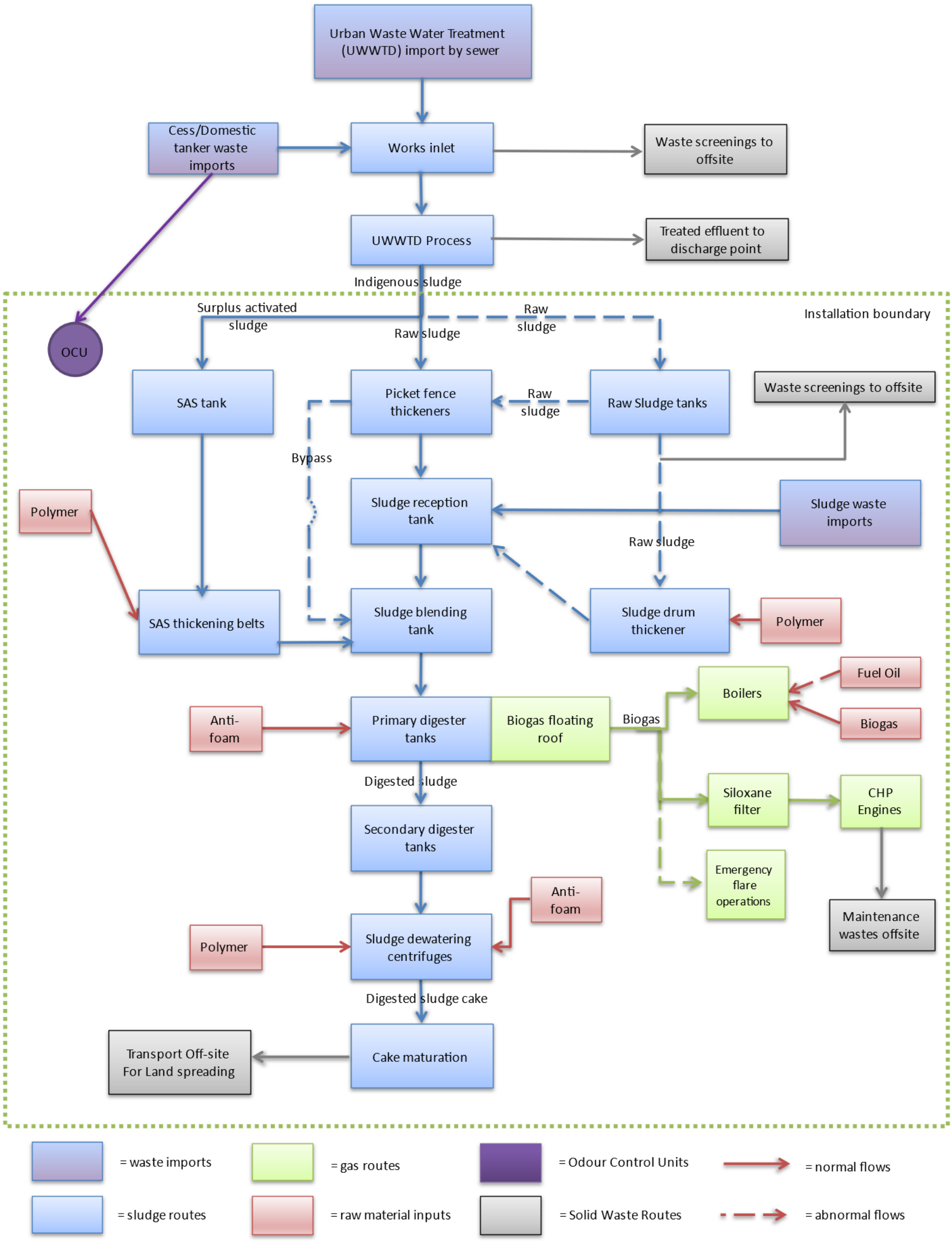
Drawing Number:
MAPLS1ZZ-DPL-004-A

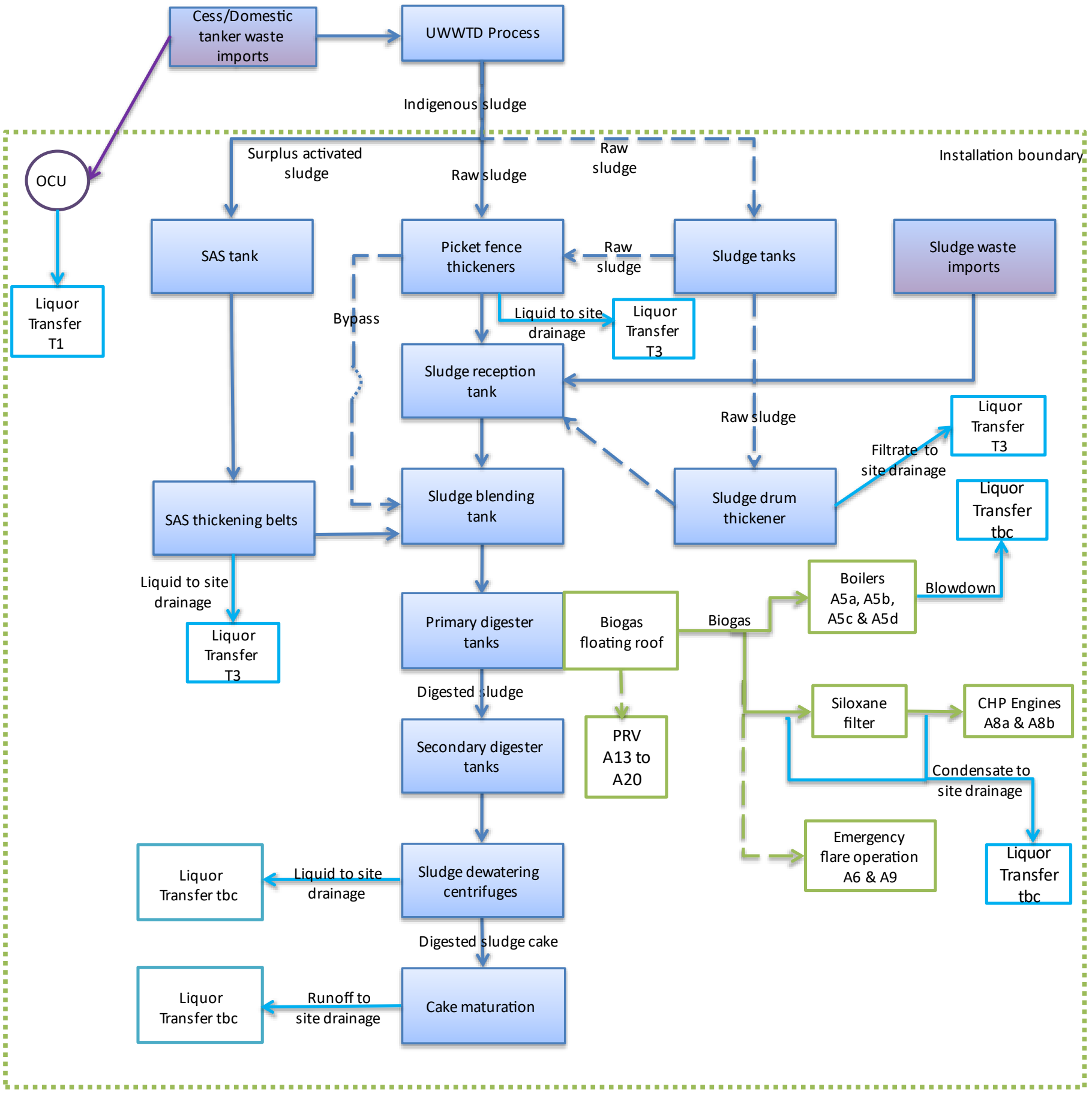
Scale:
1:200

Sheet Size:
A0

Rev:
A

A.5 Block flow diagram




Cess/Domestic tanker waste imports
UWWTD Process
Indigenous sludge
Installation boundary
OCU
Surplus activated sludge
Raw sludge
Raw sludge
SAS tank
Picket fence thickeners
Raw sludge
Sludge tanks
Sludge waste imports
Liquor Transfer T1
Bypass
Liquid to site drainage
Liquor Transfer T3
Sludge reception tank
Raw sludge
Liquor Transfer T3
Filtrate to site drainage
SAS thickening belts
Sludge blending tank
Sludge drum thickener
Liquor Transfer tbc
Liquid to site drainage
Boilers A5a, A5b, A5c & A5d
Blowdown
Liquor Transfer T3
Primary digester tanks
Biogas floating roof
Biogas
Digested sludge
Siloxane filter
CHP Engines A8a & A8b
PRV A13 to A20
Secondary digester tanks
Condensate to site drainage
Emergency flare operation A6 & A9
Liquor Transfer tbc
Liquor Transfer tbc
Liquid to site drainage
Sludge dewatering centrifuges
Liquor Transfer tbc
Digested sludge cake
Liquor Transfer tbc
Runoff to site drainage
Cake maturation
= waste imports
= gas routes
= Odour Control Units
= normal flows
= sludge routes
= Waste Water Flows
A'n'
= Emission Points
= abnormal flows

A.6 Site Photographs

Cess/waste import data logger. Waste passes through a wet well and into the sewer network where it is pumped to the inlet for treatment.

Sludge reception tank and import logger. Imported sludge is discharged into this reception tank, which is screened and passed to the blending tank.

Sludge blending tank. Imported sludge and dewatered indigenous sludges are blending in this tank prior to being pumped to a digester tank.

Photo of one of the eight primary digester tanks on site. Digested sludge is transferred to the secondary digester tanks.

Biogas is captured in the floating roof gas holder, which can also be seen in the photo.

Photo of one of the secondary digester tanks on site. Digested sludge is transferred to the digested sludge dewatering plant.

Photos of the cake pad.

On the left of the image is on of the conveyors from digested sludge dewatering plant.

On the right shows the storage area and the extent of the pad.

Appendix B. CoTC

CIWM (WAMITAB) Qualifications

HSEC Services

6b The Walk, Beccles, Suffolk NR34 9AJ
01502 712209 info@hsecservices.co.uk www.hsecservices.co.uk

Mr Daniel Scurtu
Thames Water
Maple Lodge STW
Denham Way
Rickmansworth
WD3 9SQ

Date: 08/02/2022

Notification of Registration with CIWM (WAMITAB) and Health, Safety & Environmental Compliance Services Limited.

Dear Mr Daniel Scurtu

We are pleased to confirm that you have been registered with Health, Safety & Environmental Compliance Services Ltd and the Awarding Organisation ''CIWM (WAMITAB)'' for the below award / unit:

- ✓ **Award**: CIWM (WAMITAB) Level 4 Certificate In waste and Resource Management – VRQ
- ✓ **Optional Unit 1**: VRQ407 – Principles and practices of managing a biological treatment processing facility (Anaerobic Digestion and Composting)

Please see below registration numbers and dates that you will be required to provide, when contacting either the Centre or the Awarding Organisation – CIWM (WAMITAB).

- ✓ **Centre Delegate Number**: H00397S
- ✓ **CIWM (WAMITAB) Number**: 121962
- ✓ **CIWM (WAMITAB) Registration Date**: 07/02/2022
- ✓ **Expiry Date**: 07/02/2023 – (Please do not input the expiry date into your question papers)

You now have 12 months from the above mentioned CIWM (WAMITAB) registration date to achieve the award. Should reregistration be required after this period, all work supplied and marked will be carried over, however this is subject to our terms and conditions and an additional reregistration fee will be incurred.

Prior to making any submission to admin@hsecservices.co.uk please ensure the above information is inserted into the top of each unit question paper (Section 1. Delegate). Please also ensure that you read the declaration page for each unit question paper ''Declaration and Notes for Delegates'' prior to signing section 2.

Please let us know if any information transmitted to you, such as address and most importantly names are incorrect as this is how your name will appear on any Certificate claimed. Additionally, if any personal information changes such as home address, place of work or names please contact admin@hsecservices.co.uk at your earliest opportunity, or alternatively complete ''HSEC0055 – Change of details'' which can be sent via a postal service and can be found at the back of section 2 in your portfolio.

These details will remain on file for the duration of your chosen qualification and for a period as outlined in ''HSEC0023 - GDPR Policy''.

Good luck in the completion of your qualification, remember if you need anything or you have any queries don't hesitate to contact us.

Yours sincerely

B. Saville

Ben Saville

Director / Centre Manager

Appendix C. Site Condition Report – H5

SITE CONDITION REPORT TEMPLATE

For full details, see H5 *SCR guide for applicants* v2.0 4 August 2008

COMPLETE SECTIONS 1-3 AND SUBMIT WITH APPLICATION

DURING THE LIFE OF THE PERMIT: MAINTAIN SECTIONS 4-7

AT SURRENDER: ADD NEW DOC REFERENCE IN 1.0; COMPLETE SECTIONS 8-10; & SUBMIT WITH YOUR SURRENDER APPLICATION.

1.0 SITE DETAILS	
Name of the applicant	Thames Water Utilities Limited
Activity address	Maple Lodge Sludge Treatment Centre Maple Lodge Sewage Treatment Works Denham Way Maple Lodge Rickmansworth WD3 9SQ
National grid reference	TQ 03847 92454

Document reference and dates for Site Condition Report at permit application and surrender	Environmental Permit Variation Application – Maple Lodge Sludge Treatment Centre. Document number: TW_STC_EPR_08, EPR/FP3435LA/V005. Date: June 2021.

Document references for site plans (including location and boundaries)	Please see site plans in Appendix A.

Note:

In Part A of the application form you must give us details of the site's location and provide us with a site plan. We need a detailed site plan (or plans) showing:

- Site location, the area covered by the site condition report, and the location and nature of the activities and/or waste facilities on the site.
- Locations of receptors, sources of emissions/releases, and monitoring points.
- Site drainage.
- Site surfacing.

If this information is not shown on the site plan required by Part A of the application form, then you should submit the additional plan or plans with this site condition report.

2.0 Condition of the land at permit issue	
Environmental setting including:	The River Colne runs along the sites northern and eastern boundary (giving way to the Grand Union Canal along the eastern boundary). To the south is Lynster's Lake

• geology • hydrogeology • surface waters	and to the west is Maple Lodge Nature Reserve consisting of woods, Marsh Lake and Clubhouse Lake. Information from the Environment Agency's online flood maps show that while the majority of the site is at a very low risk of river flooding, parts of the site are at an elevated risk. This includes some areas where sludge assets are located where there is a low risk of flooding and other areas of the site where there is a high risk. There is a very low risk from surface water flooding. The geology of the site is a bedrock of Lewes Nodular Chalk Formation which are shallow marine in origin. This is overlain by sedimentary alluvium clay, silt, sand and gravel from fluvial origins. Parts of the site are within the boundaries of a Source Protection Zone 1. Bedrock deposits are classified as Principal and superficial deposits are classified as Secondary A.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	The site is located within a generally rural area of Hertfordshire. The installation activities at the site are part of a wider TWUL operated sewage treatment works which handles and treats material which is similar in composition and makeup to the wastes treated within the installation. Prior to 1900 the site was agricultural fields and undeveloped. A Canal has been located in or around the current Grand Union Canal since the 1870s. The presence of Harefield Lime Works and Springwell Chalk Pit are noted in the historical maps prior to the 1900s, with the Lime Works changing to Distemper Works in the 1910s (paint works). Sewage works of the Chorleywood U.D.C appear in the records from the mid-1930s slightly north and west of the current works. Works in the current location and of a similar form are recorded in the 1960s and are expanded in the 1970s. There are some potential pollution incidents on record with the Environment Agency associated with the site. Four records have been found: one incident that was both a Category 3 (Minor) to land and Category 2

	(significant) to water caused by diesel, and three incidents that were Category 2 (significant) incidents to water caused by sludge, final effluent and other organic chemicals or products.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	Unknown – although the works was operated as a sewage works in its earliest phase, the site will therefore likely be contaminated with sewage related compounds, including *E. coli* and heavy metals.
Baseline soil and groundwater reference data	None collected.
Supporting information	Thames Water has not collected baseline data at this time and acknowledges the risks that this may pose when it comes to surrender of the permit. However, there are no plans to close the site in the foreseeable future

3.0 Permitted activities	
Permitted activities	Operation of an anaerobic digestion plant for sewage sludge waste and imported sewage sludge wastes and combustion of biogas within a CHP engine to generate electricity for use on site. Imports of waste to the works inlet for treatment via the UWWTD route.
Non-permitted activities undertaken	• Discharging of waste • Storage of waste • Storage of biogas • Physical blending of wastes • Storage of raw materials
Document references for: • plan showing activity layout; and • environmental risk assessment.	Please see the Technical Summary in Chapter 2 of the main application document.

Note:

In Part B of the application form you must tell us about the activities that you will undertake at the site. You must also give us an environmental risk assessment. This risk assessment must be based on our guidance (*Environmental Risk Assessment - EPR H1*) or use an equivalent approach.

It is essential that you identify in your environmental risk assessment all the substances used and produced that could pollute the soil or groundwater if there were an accident, or if measures to protect land fail.

These include substances that would be classified as 'dangerous' under the Control of Major Accident Hazards (COMAH) regulations and also raw materials, fuels, intermediates, products, wastes and effluents.

If your submitted environmental risk assessment does not adequately address the risks to soil and groundwater, we may need to request further information from you or even refuse your permit application.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	If yes, provide a plan showing the changes to the activity boundary.
Have there been any changes to the permitted activities?	If yes, provide a description of the changes to the permitted activities
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	If yes, list of them
Checklist of supporting information	• Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

6.0 Pollution incidents that may have had an impact on land, and their remediation
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.

Checklist of supporting information	• Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

7.0 Soil gas and water quality monitoring (where undertaken)

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.

Checklist of supporting information	• **Description of soil gas and/or water monitoring undertaken** • **Monitoring results (including graphs)**

8.0 Decommissioning and removal of pollution risk

Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.

Checklist of supporting information	• **Site closure plan** • **List of potential sources of pollution risk** • **Investigation and remediation reports (where relevant)**

9.0 Reference data and remediation (where relevant)

Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from sections 3, 4, 5 and 6 of the Surrender Site Condition Report shows that the land has not deteriorated.

If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.

Checklist of supporting information	• Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)

10.0 Statement of site condition

Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that:

- the permitted activities have stopped
- decommissioning is complete, and the pollution risk has been removed
- the land is in a satisfactory condition.

Appendix D. BAT Assessment

Please see the appended BAT Assessment Spreadsheet

Appendix E. Odour Management Plan

Appendix F. Bioaerosol Risk Assessment

Appendix G. CIRIA 736 Assessment

Appendix H. Leak Detection and Repair (LDAR) Plan