



Bioresources Permitting

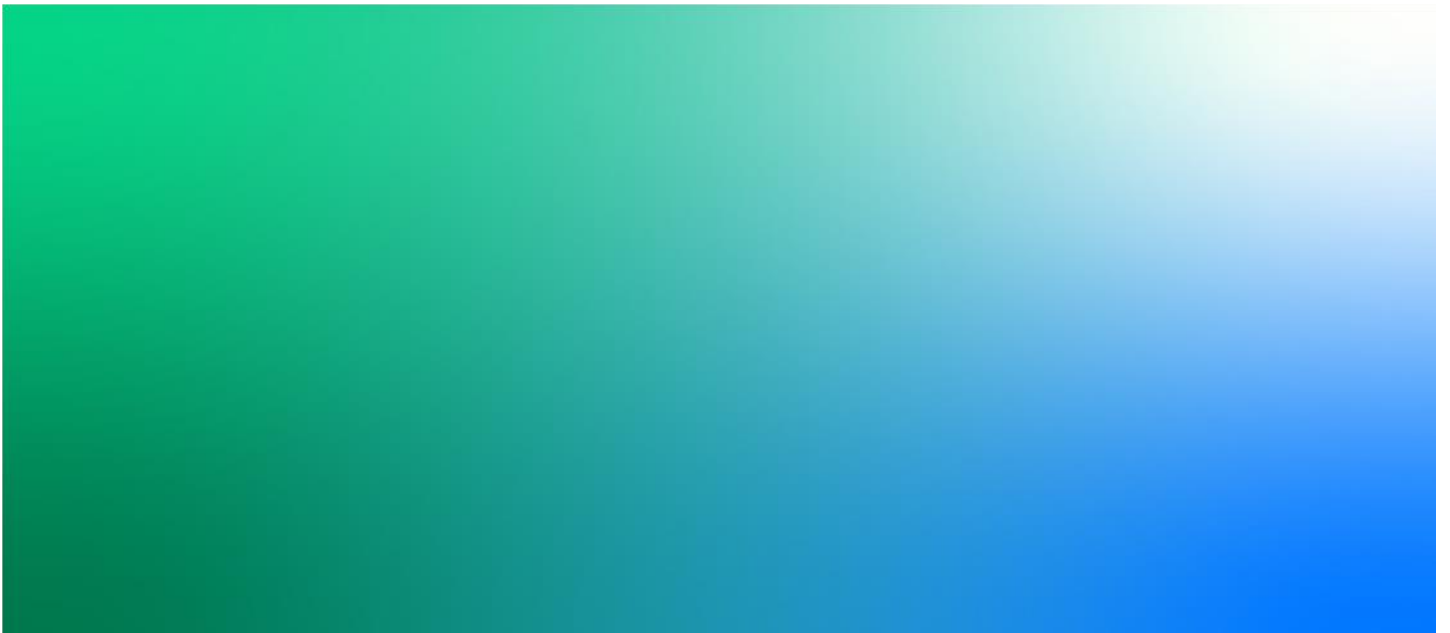
Worksop (Manton) STW Environmental Permit Application

Document No. | 0.1

March 2021

Severn Trent Water Ltd

EPR/Worksop/A001



Bioresources Permitting

Project No: B1958992
Document Title: Workshop (Manton) STW Environmental Permit Application
Document No.: Document No.
Revision: 0.1
Document Status: Issue
Date: March 2021
Client Name: Severn Trent Water Ltd
Client No: EPR/Workshop/A001
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File Name: Workshop draft application support document mkm

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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
Draft	01/03/21	Client comment	JK	EG	MM	MM
Final	31/03/21	For issue	JK	EG	MM	MM

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1. Introduction

This application relates to a new environmental permit application for a bespoke installation bioresources treatment permit for the Worksop Sewage Treatment Works, operated by Severn Trent Water Ltd.

The site has a current T21 waste exemption which allows for the recovery of waste at a waste water treatment works which will be superseded by this permit application.

This new permit application comprises an installation for the biological treatment of waste under the Industrial Emissions Directive, as implemented through the Environmental Permitting Regulations (2016) (as amended). It relates to the non-urban waste water treatment directive (UWWTD) treatment of indigenous UWWTD derived sludge and imported UWWTD sludges from other works and cess and septic tank imported material which is of a similar composition. Note that these operations are currently operated at the Worksop Sewage Treatment Works site, under the UWWTD.

The listed activity includes the import point for waste from domestic customers, which is then treated via the UWWTD route which is outside of the scope of this permit. Permitted activities then include operations from the point of the separation of the sludge from the main UWWTD treatment stream, through to its storage on the site cake pad, prior to its recovery to land offsite. The additional aspects of the permit includes the biogas handling and treatment system as a directly associated activity, including a biogas fuelled gas engine and boiler, covered by the Medium Combustion Plant Directive.

There is a second listed activity for the operation of a liquor treatment plant at the site, for the treatment of dewatering liquors before they are returned to the works inlet for treatment via the UWWTD route.

A bespoke installation permit is required for this site due to the inclusion of additional EWC codes on the permit for waste import and the standard rules set not including operation of a biogas engine, which would otherwise require multiple permits at the site. A number of other activities are undertaken at the site, outside of the scope of this permit, relating to the treatment of sewage derived materials through aerobic processes. These activities are covered by the UWWTD.

1.1 Non-Technical Summary

This application is for a new bespoke installation permit under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), following a change of interpretation of the Urban Waste Water Treatment Directive (UWWTD) by the Environment Agency.

It covers the biological treatment of sludge by anaerobic digestion, with a capacity above the relevant thresholds. The biological treatment of sludge includes treatment of the indigenous sewage sludges from the onsite aerobic treatment process and treatment of imported sewage sludges from other sites, arriving by road. The indigenous sludges are generated from the aerobic treatment of both waste waters from the sewer network arriving into the site at the works inlet, and, from imported waste materials arriving by road transport to a dedicated waste import point at the works inlet. These tanker imports to the works inlet are classified as a waste activity. There are a number of directly associated activities including the operation of a biogas fuelled Combined Heat and Power (CHP) unit 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 (MCPD).

There is a second listed activity at the site, relating to the operation of a liquor treatment plant, which utilises biological treatment on dewatering liquors prior to their return to the works inlet for treatment via the UWWTD treatment route.

The site is located on the outskirts of Worksop, Nottinghamshire, in a largely rural area. A railway line runs to the South of the site and the River Ryton and Chesterfield Canal are close to the site perimeter.

The waste activity comprises an offloading coupling for tankers and cess vehicles to discharge through, located at the works inlet. All tanker trade imports are passed through a logger to record the incoming volume and the company carrying out the import. The import is directly into the works inlet, with no holding or blending tanks before the import. Once the tanker trade waste has mixed with the incoming UWWTD material, its treatment falls outside the scope of the Environmental Permitting Regulations.

The primary activity of the installation is for the biological treatment of non-hazardous wastes for recovery by means of anaerobic digestion. The installation has two import points for sludge transfers from other waste water works. This material is transferred and blended with the indigenous sludge separated from the main aerobic treatment flow in a pre-digestion blending tank

The blending tank is used to ensure that all imported and indigenous materials are properly mixed to give a more homogeneous mixture, prior to transfer to the acid phase digester which pre-treats the sludge for digestion in the downstream gas phase digesters. All three digesters are above ground tanks which operate on a continuous process basis, that is incoming sludge is added to the process as digested sludge is removed. Removed sludge is transferred to dewatering buffer tanks prior to being dewatered within site centrifuges by the addition of polyelectrolyte based coagulant. Dewatered, digested sludge is then conveyed to the site cake pad for temporary storage. Treated cake is finally removed from the pad by road for landspreading under the Sludge Use in Agriculture Regulations 1989, in accordance with the Biosolids Assurance Scheme (BAS).

The secondary activity at the installation is for the biological treatment of non-hazardous wastes for disposal. Centrate and liquors from the dewatering operations are aerobically treated to reduce the chemical oxygen demand (COD) and biological oxygen demand (BOD) loading prior to transfer to the works inlet for treatment via the UWWTD treatment route. As the end point of this process is into the works inlet, this means it is a waste disposal operation and therefore, a separate listed activity.

Biogas is captured from the primary anaerobic digesters and stored within a dual membrane biogas storage holder. The above ground biogas transfer pipeline is equipped with condensate pots that capture entrained moisture from the generated biogas and allow it to be drained into the site drainage system for treatment. The biogas storage vessel is fitted with pressure release valves as a safety precaution in the event of over pressurising the system.

The biogas is taken from the storage vessel for combustion in a CHP engine, generating electricity for use both within the site and for export to the grid, and heat to maintain primary digester temperature. This is classified as an 'existing' combustion plant under the Medium Combustion Plant Directive, due to the generator being commissioned prior to 20 December 2018. Biogas can also be used in two dual fuelled auxiliary boilers. In the event there is excess biogas, i.e. more than the CHP can utilise, or in the event that the CHP is unavailable, there is a ground mounted emergency flare. This is utilised under 10% of the year.

There is also a waste activity at the site for the import to the works inlet of cess and septic tank imported materials from third parties.

2. Technical Description

This application is for a new bespoke installation permit under the Environmental Permitting (England and Wales) Regulations 2016 (as amended), following a change of interpretation of the Urban Waste Water Treatment Directive by the Environment Agency. It relates to the permitting of indigenous sewage sludge and imported sewage sludge and other wastes for treatment by anaerobic digestion for the Worksop Sewage Treatment Works, operated by Severn Trent Water Ltd (Severn Trent).

This application covers the biological treatment of sewage sludge, both indigenous and imported from other waste water treatment sites, in a mixture with imported cess and septic tank derived wastes, by anaerobic digestion for recovery, with a capacity above the relevant thresholds. The site operates 24 hours per day with the site being unstaffed overnight. There are a number of directly associated activities, including the operation of a biogas fuelled CHP unit for the generation of electricity and heat at the site, which is classified as an 'existing' combustion source under the Medium Combustion Plant Directive, operation of dual fuelled auxiliary boilers and storage of biogas.

The Combined Heat and Power unit and auxiliary boilers on site fall under the definition of "existing" medium combustion plant (MCP) as defined by Schedule 25A of the Environmental Permitting Regulations (EPR) 2018, in that they are less than 20MW thermal and were commissioned prior to 20 December 2018. The CHP unit also falls under the definition of a Specified Generator under Schedule 25B of the EPR 2018., on the basis that its first operation is scheduled for 2021 and it does not benefit from a capacity market agreement from the 2014 or 2015 capacity market auctions.

The operations at the site do not fit within the requirements of the appropriate standard rules permit (2008 no 19, v5) due to the addition of a number of EWC codes and the standard rules set not including operation of a biogas engine, which would otherwise require multiple permits at the site. A bespoke permit application is therefore required.

The site is located East of the town of Worksop in North Nottinghamshire in a predominately rural area. There are agricultural fields and open green spaces, including a golf course on all sides. A railway line runs North-West to South-East passed the site while the River Ryton and Chesterfield Canal can both be found towards the South-West, South and South-East of the site, as close as 20m to the site perimeter fence. There is a farm located approximately 350m East of the site while the nearest commercial premises and residential premises are over 400m and 550m to the South-West.

The majority of the wider site sits within a Flood Zone 1, indicating that the site has a low annual probability of flooding (>1:1000 annual probability) although some parts are within a Flood Zone 2 and has an annual probability of river flooding between a 1:100 and 1:1,000. The area for sludge treatment to be permitted is all within the Flood Zone 1 area. The site is within a designated Source Protection Zone 3 (SPZ). The nearest designated habitat site is a SAC that is approximately 9.4 km to the South-East and 10km to the South of the site. There are no SPAs or RAMSAR sites within 10km of the site and no LNRs or SSSIs within 2 km of the site. The site is not within an Air Quality Management Area.

The waste activity comprises an offloading coupling for tankers and smaller cess vehicles to discharge through, located at the works inlet. All discharges are passed through a logger to record the incoming volume and the company carrying out the import. The import is directly into the works inlet, with no holding or blending tanks before the import. Once the tanker trade waste has mixed with the incoming UWWTD material, its treatment falls outside the scope of the Environmental Permitting Regulations.

The indigenous sludge is thickened via belt thickeners, with the addition of a polymer coagulant, prior to being blended with imports of sludge from other sites within the pre-digestion blending tank. There are two offloading points for tankers to discharge imported UWWTD derived sludges from other water treatment sites and the site can accept both thick and thin sludges for treatment. This sludge is passed through a logger to record the incoming volume of sludge which is screened to remove rag and inorganic detritus. Following this, thin sludges that require thickening prior to blending are discharged into a pre-thickening buffer tank and thickened using a

gravity belt thickener. Once thickened, the sludge is combined with indigenous sludges in the pre-digestion blending tank. Filtrate is first treated within a liquor treatment plant before it is returned via the site drainage system to the head of the works, for aerobic treatment via the UWWTD treatment route. Thicker sludge is discharged directly to the pre-digestion blending tank and are blended with indigenous sludges. The belt thickeners and the raw sludge tanks are connected to an odour control system to minimise odour emissions. The pre-thickening buffer tank and pre-digestion blending tank are both of steel construction, covered with fixed roofs.

The digestion process is a two-step process using acid phase digestion to pre-treat the sludge before the gas phase digestion in conventional digester tanks. There is one acid phase digester (APD) and two gas phase digesters (GPD), both of which are above ground tanks, constructed of steel with fixed roofs and operational volumes of 2500 m³ each. Tanks are subject to external gas mixing with biogas drawn from the headspace at the top of each tank and inserted at the bottom of each tank. Tanks are fitted with pressure relief valves, which operate in an emergency only, and tanks are subject to regular external inspections and 10-yearly internal inspection. Sludge is held within the digesters for a period in accordance with the sites HACCP plan within the APD and GPD's, with sludge being fed on a continual basis as digested sludge is removed and transferred to the dewatering buffer tanks.

Dewatering of the digested sludge takes place using centrifuges with the dewatered and digested cake conveyed to the adjacent cake pad. From the dewatering buffer tanks, two steel construction open tanks with an operational volume of 750 m³, sludge is pumped to the centrifuges where a polyelectrolyte coagulant is used to aid dewatering. Centrate drains first to the liquor treatment plant and then to the site drainage system where it is returned to the head of the works for aerobic treatment via the UWWTD treatment route. The cake pad is a large engineered area with six bays used for the storage of dewatered sewage cake.

The sludge is analysed to check compliance with Sludge Use in Agriculture Regulations (1989) (SUiARs), in accordance with the Biosolids Assurance Scheme (BAS), and once the sludge is confirmed to be compliant it is removed from site for landspreading. Vehicles leaving the cake pad pass through a wheel wash to minimise the transfer of sewage cake onto site roads or offsite to the public highway.

The second listed activity relates to the liquor treatment plant at site, which biologically treats centrate from dewatering operations, prior to its release to the works inlet for treatment via the UWWTD route. This is therefore, biological treatment of waste for the purposes of disposal, above the threshold of 50m³ (tonnes) per day. This liquor treatment plant is an open topped structure, due to the nature of its operation, which aerates the liquors in order to reduce BOD and COD loads and reduce some of the ammonia present to nitrates, prior to release to the works inlet. The tank is an above ground structure, made of steel.

Biogas from the primary digesters is captured and transferred to a dual membrane gas holder. Biogas can then be combusted within a CHP engine on site, which runs on biogas only and provides both electricity to the site processes and heat to maintain the primary digester temperature. Electricity can also be exported to the National Grid when there is excess supply above the site needs. The site also has two dual fuelled auxiliary boilers and an auxiliary flare stack that can combust biogas when there is excess biogas that cannot be combusted by the CHP or when the CHP is offline for maintenance. Biogas is transferred from the gas holder via a biogas pipeline that is largely above ground and is fitted with condensate pots that capture entrained moisture from the generated biogas, and allow it to be drained into the site drainage system for aerobic treatment via the UWWTD treatment route.

The CHP engine is a Jenbacher 312 with a thermal input of 1.3 MWth input and is equipped with a vertical stack, unimpeded by cowls or flaps. This is classified as a 'existing' combustion plant under the Medium Combustion Plant Directive. In the event there is excess biogas, i.e. more than the CHP can utilise, or in the event that the CHP is unavailable, there are two dual fuelled auxiliary boilers and one ground mounted emergency flare. The flare is utilised under 10% of the year. H₂S and siloxane levels are monitored within the biogas, and treated if required by their concentrations. There is no routine dosing for H₂S with ferrous sulphate undertaken within the permitted processes on site.

An air dispersion model using ADMS has been prepared for the air emissions from combustion plants at the site and is appended to this application as Appendix C. The key findings are that the CHP engine and boiler operations are unlikely to result in any unacceptable impacts on air quality.

Anaerobic digester 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, including for the presence of foaming, which is treated with anti-foam as appropriate. All tanks are equipped with appropriate high-level alarms and automatic cut off valves to minimise the risk of overtopping. Site operations are covered by Severn Trent's ISO14001 accreditation for all operations, and technical competence is provided by the organisations CMS and training program.

The site infrastructure is not currently fully compliant with the requirements of BAT, specifically with regards to containment and surfacing.

Site drainage from operational areas is captured within the site wide drainage system and returned to the head of the works for treatment within the UWWTD treatment route. Site drainage plans are included within Annex A.

A full assessment of the relevant sections of the Waste Treatment BRef are supplied as Annex D.

The site has an odour management plan which is supplied as Annex F.

There is no requirement for a fire prevention plan at the site, due to the nature of the wastes treated 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 for the primary activity, that of anaerobic digestion, 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 listing for the liquor treatment plant is:

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

- *Part A(1) (a) Disposal of non-hazardous waste with a capacity exceeding 50 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 concerning urban waste-water treatment(a)—*
 - (i) biological treatment;*

In addition to the listed activity at the site, there is a directly associated activity of a biogas combustion plant which is also a specified generator, covered by the Medium Combustion Plant Directive under Schedule 25A and B of the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

There is also a waste management activity for the import of wastes to the works inlet.

The site includes the following Directly Associated Activities (DAA):

-
- Import of sewage sludge, cess and septic tank wastes;
 - Blending of imported wastes prior to treatment;
 - Acid phase digestion of imported and indigenous sludge;
 - Storage of digestate prior to dewatering;
 - Dewatering of digested sewage sludge;
 - Transfer of treated centrate back to the head of the sewage treatment works;
 - Storage of dewatered sewage cake prior to offsite recovery;
 - Storage of biogas;
 - Combustion of biogas in an MCPD and SG compliant biogas CHP unit and auxiliary boilers;
 - Emergency flare; and
 - Storage of raw materials.

The waste activity at the site is the import of liquids and thin sludges for aerobic biological treatment.

The site can treat approximately 2,650 m³ per week of sewage sludge at a dry solids percentage of 3%. This gives an annual throughput of (380 x 52) approx. 137,800 tonnes sludge.

3. Application Form Questions:

3.1 Form B2

1 About the permit

1a Discussions before your application

None

1b Is the permit for a site or for mobile plant?

This application relates to a site.

2 About the site

2a What is the site name, address, postcode and national grid reference?

Severn Trent Water Limited

Worksop Sewage Treatment Works,

Rayton Lane

Worksop

S81 0UB

NGR SK 60890 79121

2b What type of regulated facility are you applying for?

This application relates to a bespoke installation.

2c If you are applying for more than one regulated facility on your site, what are their types and their grid references?

This application is for a single regulated facility, namely an installation.

2d Low impact installations (installations only)

2d1 Are any of the regulated facilities low impact installations?

No, this application is not for a low impact installation.

2e Treating batteries

2e1 Are you planning to treat batteries?

No, this application is not for the treatment of batteries

2f Ship recycling

2f1 Is your activity covered by the Ship Recycling Regulations 2015?

No, this application is not covered by the Ship Recycling Regulations 2015

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?

Total payout	Type	Date	Location	Offender	Description of offence
£870,000	Prosecution	Jun-20	Shropshire, England	Severn Trent Water Ltd	Causing an unpermitted discharge, contrary to Regulation 38(1)(a) and regulation 12(1)(b) of the Environmental Permitting (England & Wales) Regulations 2010 and failing to comply with permit conditions, contrary to regulation 38(2).

3b Technical ability

Severn Trent Water utilises a competence management system to demonstrate technical competence at the site.

Please see the appended CMS certificate for the site, which has a scope including waste storage and treatment.

The EU Skills coordinator has confirmed to STW there is no need to identify a specified person as TCM if the organisation is under the EU Skills scheme. The following is directly from the gov.uk website:

EU Skills scheme: The EU Skills scheme considers the competence of your business as a whole. To join this scheme you need to have a competence management system in place and this must be certified by one of the scheme's approval bodies.

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?

There are no current or past bankruptcy or insolvency proceedings against the applicant.

3d Management systems

Confirm that you have read the guidance and that your management system will meet our requirements.

Yes, we can confirm that this is the case.

Does your management system meet the conditions set out in our guidance?

Yes. The Company holds BS EN ISO 14001:2015.

Please see Appendix B for EMS and CMS certificates.

Scope

Severn Trent Water was awarded certification to BS EN ISO14001:2015 for its Environmental Management System in August 2018. The certified EMS scope covers "Management and delivery of wastewater treatment processes. Transfer and storage of highway waste on depots. CHP biogas plant activities. Mothballed landfill monitoring activities, Head office functions at Severn Trent Centre."

Environmental Policy

Implementation of the Severn Trent Water's Environmental Policy is approved by the Severn Trent Executive Committee of the Severn Trent Plc Board and is the responsibility of all employees, with the Chief Executive being accountable for its implementation. The policy covers all Severn Trent activities, including this installation, and applies to all individuals who are employed by, or carry out work on behalf of, any Severn Trent group company including contractors, temporary staff and agency workers. The Management Systems Team (EMS specialists) is responsible for the implementation of the EMS, the site operations teams will be responsible for maintaining ongoing compliance and managing the sites.

https://www.severntrent.com/content/dam/stw/ST_Corporate/Responsibility/Severn_Trent_Group_Environment_Policy.pdf

Management and Responsibilities

The Management Systems Team (EMS specialists) has overall 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 Management Systems Team (EMS specialists) maintain a Legal Register and, in consultation with Operations Teams, their permit compliance advisors 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 take into account legal and other requirements, cost to the business, scale of impact and interested parties.

Management Systems Team (EMS specialists) are responsible for setting internal environmental standards with Standard owners which are then implemented by the relevant business areas. The Standards and other relevant information are communicated through a number of routes. Incident and corrective action routes exist to promote continual improvement.

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 to identify and control environmental issues arising from Severn Trent Water activities. Each department is required to achieve operational control of its activities and, using a central database, identify and record any departmental environmental issues.

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 and environmental risks and method statements are produced to address these, as part of the Managing Contractors process. Contractors who are required to carry out major services are closely

managed by the team to ensure that compliance with Severn Trent Water's H&S and environmental policies is achieved. No contractors may work on site without having undergone a full site induction.

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. The following basic inspections and maintenance activities are carried out on site:

- Daily operation of plant (24/7) involves visual inspection of operational assets;
- Daily inspection of temporary pipe work installed;
- Weekly visual inspections of the bulk oil storage tanks and the oil pipework (visual check on above ground pipework);
- Monthly inspection of all bunds (oil, transformer, temporary, etc.) and condition of containerised engines;
- 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 to ensure compliance with the Infrastructure Monitoring Programme.

All regular maintenance of all plant and equipment will be completed on the time scale specified by the equipment manufacturer including routine. A full engine overhaul is likely to be scheduled every 20,000 operating hours. This high-level preventative maintenance is designed to avoid unscheduled down time, maximising the plant availability and its ability to control emissions and maintain an efficient level of operation between overhaul services. Record sheets will be completed that would highlight any issues that may require operator intervention outside the routine maintenance programme.

Environmental Improvement

Severn Trent 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.

The EMS is subject to a Senior Management Review twice a year to consider environmental performance, objectives and targets and continual improvement.

Competence, Training and Training Records

Severn Trent 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.

The EMS delivers a structured environmental awareness programme and targeted awareness training, where a need is identified. Managers and the CMS (Competence Management System) Manager review the competence of those working for the company where the tasks have the potential to cause a significant negative environmental impact, or impact on the operation of permitted activities within the EMS scope. The EMS Team, Permit Compliance Technicians and relevant Departments are responsible for rolling out the Basic Environmental Awareness Modules and job specific training.

For each internal training course held a Training Record is issued. The Training Record includes a statement of understanding, which the employee signs to confirm that he/she has attended the course and understood the subject matter.

For each internal training course held a Training Record is issued through the employees' role specific records on SAP.

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. All training is overseen by a dedicated in-house Learning and Development team, through "The Academy" process.

Severn Trent Water is able to demonstrate that permitted activities are managed by technically competent staff with its Competence Management System (CMS) that is independently certified to meet the requirements of an Industry Standard. All appointed Technically Competent Persons (TCPs) undergo EMS awareness training and CMS training. TCPs are required to re-take training every 2 years. A list of technically competent persons is stored within the CMS documentation on SharePoint.

Managing 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 contractor 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 or a TCP who is suitably qualified, 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

Severn Trent Water has procedures for incidents, non-compliances and environmental complaints.

Incidents are managed through site specific procedures which ensure that all incidents are logged and that necessary preventative and/or corrective actions are taken.

Complaints are managed by Customer Services, where all complaints are logged on the Complaints Records Online Storage System (CROSS). The Regional Managers are responsible for ensuring that action is taken and for liaising with the relevant regulatory bodies (where appropriate). They ensure that any complaint is investigated and, if found to be justified, that work is undertaken to resolve the issue. They also provide an appropriate response to the complainant in a timely manner detailing the reason behind the issue and the actions taken to resolve the matter.

Information regarding complaints is recorded to allow determination of an appropriate response (corrective action) and to determine what measures need to be taken in the future to prevent its reoccurrence (preventive action). These records will be maintained as part of the management system for a minimum of four years.

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: 'Lessons Learnt' bulletins, OSC portal forums and compliance audits.

Auditing

The controls for addressing environmental aspects and impacts are checked through the EMS audit programme which is managed by the EMS Auditor. Findings are reported to Site Managers and their Leadership Team. All permitted sites are internally audited by the permitting team every three years as a minimum. These inspections support the EMS audit programme and are audited by the EMS Team on a sample basis. The EMS also checks that other audit programmes exist for our wider environmental obligations, for example, MCerts and Operator Self Monitoring compliance assessments.

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?

No – site drainage is managed within the wider sewage works, which is entirely within the boundary of this permit, 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 1999, or a safety report is needed under regulation 7 of those regulations?

No.

5 Supporting information

5a Provide a plan or plans for the site

Please see Appendix A for the following plans:

Figure 1 – site location plan

Figure 2 – site layout plan

Figure 3 – site drainage plan

Figure 4 – process flow diagram

5b Provide the relevant sections of a site condition/baseline report if this applies

Yes. See Appendix C for H5 template site condition report for the site

5c Provide a non- technical summary of your application

Please see Section 1.1 in this document.

5d Are you applying for an activity that includes the storage of combustible wastes?

No – the site handles and treats wastes using processes that fall outside the scope of the FPP guidance. Note that the site primarily handles liquids or pumpable sludges which do not pose a fire risk.

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 Name	Designation	Distance	Direction
Birklands and Bilhaugh	SAC (and NNR)	9,440m 10,000m	South-East South
n/a	LNR		
Clumber Park (multiple units)	SSSI	3,100m (closest)	South East
n/a	RAMSAR		
n/a	SPA		

Data taken from MAGIC.gov.uk website, accessed January 2021. For habitat sites, the relevant distance for consideration are: International designations (SAC, MPA, SPA and Ramsar - 10km); National designations (SSSI – 2km); Nature reserves (2km)

There is only one designated habitat site within the relevant distances of the site, the Birklands and Bilhaugh SAC which is located between 9.4 km and 10 km to the South-East and South of the site. There are no SPA; RAMSAR, SSSI or LNR sites within the relevant distances of the site.

The sewage treatment works site sits within Flood Zone 1 and Flood Zone 2 but the area to be permitted is entirely within the Flood Zone 1. The site link road to the B6079 passes through both the Flood Zone 2 and Flood Zone 3. This indicates the area of sludge treatment to be permitted has a low probability of flooding,

<1:1000 annual probability of river flooding and other parts of the site in Flood Zone 2 have between a 1 in 100 and 1 in 1,000 annual probability of river flooding. The access road has a higher probability of flooding, having a 1 in 100 or greater annual probability of river flooding although there is alternative access to the site via a second access road in the Flood Zone 1. The site sits within a groundwater source protection zone 3 (SPZ).

The site is not within an Air Quality Management Area nor within close proximity to any AQMA (>10 km).

Table C2-6 Screening Assessment

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Amenity issues: Litter, vermin and pests	<p>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.</p> <p>The site is located in a rural sparsely populated area, East of the town of Worksop, adjacent to the River Ryton. A farm can be found approx. 360m to the East with open green spaces (including a golf course 500m North-West) and agricultural land on all sides. The nearest commercial premises is a car show room 300m South-West, beyond a railway line, with residential properties approx. 470m South-West. Ecological receptors: There is only one ecological receptor within the relevant distance, Birklands and Bilhaugh SAC approx. 9.5km to 10km South-East to South. There are no SPAs or RAMSAR sites within 10km of site and SSSIs or LNRs within 2km of the site.</p>	<p>The wastes handled at the site are primarily liquids and sludges, along with UWWTD derived material delivered by sewer.</p> <p>There is no source of litter within the materials handled at the site.</p> <p>In the unlikely event pests or vermin are observed on site a suitable contractor is called in as soon as practicable.</p>	X
Dust	<p>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.</p> <p>For human health and ecological receptors, see notes for Litter above.</p> <p>The impact of dust on human health will depend on the distance and wind direction.</p>	<p>The wastes handled at the site are liquids, sewage sludges and sewage cake, along with UWWTD derived material delivered by sewer.</p> <p>The site will not be handling inherently dusty or powdery wastes. Sewage cake retains a high moisture content and is not dusty. Roads will be maintained to avoid the production of dust.</p> <p>Produce sewage cake has sufficient moisture content to ensure it does not give rise to dust and is located on the eastern side of the site, away from sensitive receptors.</p>	X
Assessment of point source emissions to air	<p>Human health receptors: Single houses or groups of houses (estates, villages etc.). Schools and hospitals. Footpaths,</p>	<p>The installation has a biogas fuelled CHP engine, two dual fuelled boilers and an auxiliary</p>	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
Emissions deposited from air to land	<p>recreation areas such as playing fields and playgrounds. Industrial estates and rail stations.</p> <p>For human health and ecological receptors, see notes for Amenity issues above.</p> <p>The impact of emissions from air on human health will depend on the distance and wind direction.</p>	<p>flare, for which ADMS modelling indicates emissions are unlikely to result in unacceptable impacts on air quality.</p> <p>The emergency flare is used only during periods when there is a larger volume of biogas than the CHP engine or boilers are able to manage or is offline.</p> <p>Fugitive emissions to air are assessed separately.</p>	
Assessment of point source and fugitive emissions to water	<p>The River Ryton runs approx. 30m South-East of the site perimeter and approx. 100m South of the sludge treatment area. The works is in Flood Zone 1 indicating a low annual probability of flooding (<1:1000) and Flood Zone 2, indicating a between a 1 in 100 and 1 in 1,000 annual probability of river flooding. However, the sludge treatment works and cake pad are all within Flood Zone 1.</p> <p>Surface water drainage within the site drains to the inlet of the adjacent sewage treatment works for full treatment prior to discharge.</p>	<p>The main product of the process is a sewage cake, which is stored within flood zone 1, on a concrete pad equipped with drainage.</p> <p>Dewatering liquors are subject to biological aerobic treatment on site prior to release to the works inlet.</p> <p>Other aqueous discharges generated by process are limited (comprising, biogas condensate, and surface water run off). These sources are discharged to the on-site drainage system where they are transferred to main sewage works inlet.</p> <p>Due to the nature and small quantity of these emissions no further assessment of point source emissions is deemed necessary.</p>	X
Assessment of odour	<p>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.</p> <p>For human health and ecological receptors, see notes for Amenity issues above.</p> <p>The impact of emissions from odour on human receptors will depend on the distance and wind direction.</p>	<p>The site has an odour management plan in place. This includes management systems, procedures and monitoring to control fugitive emissions of odour at the plant.</p> <p>Waste inputs to the site are of a similar nature to indigenous waste streams and as such there is no change in odour profile at the site.</p> <p>Odoriferous activities are centrally located within the site but the location provides screening for this.</p> <p>There is no history of odour complaints associated with the site.</p>	X
Energy	Global atmosphere (direct and indirect emissions)	Biogas generated by the facility is utilised to generate electrical power for the site and exported to the grid; thus increasing renewable energy supplies.	X

Consideration	Receptors	Discussion	Detailed Environmental Risk Assessment?
		Waste heat from the CHP engine is utilised to control primary digester temperature when required and reduce demand on the auxiliary boilers.	
Land and disposal of waste to other processes	<p>Rivers and streams – see Assessment of point source and fugitive emissions to water above.</p> <p>Drainage systems/sewers.</p> <p>The site is within a Groundwater source protection zone 3 (GPZ). Aquifers are classified as principal (solid deposits).</p>	All waste streams disposed of off-site will continue to be to appropriately permitted facilities.	X
Noise and vibration	<p>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.</p> <p>The site is located in a rural area on the outskirts of Worksop, adjacent to the River Ryton. A farm can be found approx. 360m to the East with open green spaces (including a golf course 500m North-West) and agricultural land on all sides. The nearest commercial premises is a car show room 300m South-West, beyond a railway line, with residential properties approx. 470m South-West.</p> <p>Ecological receptors: There is only one ecological receptor within the relevant distance, Birklands and Bilhaugh SAC approx. 9.5km to 10km South-East to South. There are no SPAs or RAMSAR sites within 10km of site and SSSIs or LNRs within 2km of the site.</p>	<p>Site design has been chosen to minimise the impact of noise on offsite receptors through building orientation, finishes and location of openings.</p> <p>Noise from plant and equipment will be minimised through purchasing decisions and a robust preventative maintenance programme. Sensitive receptors are distant to the operational areas of the site, which are screened by the existing structures to reduce noise impacts.</p> <p>There are no sources of vibration within the facility.</p> <p>There is no history of noise complaints associated with the site.</p>	X
Other issues (including visual impact)	Not Applicable	There are no other site-specific environmental risks identified	X

6b Climate change risk screening

Category	Screening Question	Score
Timescales	How long will a permit be required for this site/activity? <i>Until 2060 or beyond (more than 40 years from now)</i>	5
Flooding	What is your site's risk of flooding from rivers or the sea? <i>Very low or low risk</i>	1
Water Use	If you use water for your site operations or fire prevention, what is the source of your water? <i>Water not required</i>	0

Climate Change Risk Assessment

Severn river basin district: climate change risk assessment worksheet

Name (as on your part A application form): Severn Trent Water, Worksop (Manton) Sewage Treatment Works

Our permit reference number (if you have one): tbc

Your document reference number: Application supporting document

Risk assessment worksheet for the 2050s

Severn river basin district

You must carry out a climate change risk assessment for any new bespoke waste and installations permit applications if you expect to operate for more than 5 years. Use the [user guide](#) to complete the table. You can add in extra pages if necessary.

Consider how your operations will be affected by the changes in weather and climate described in the table. Consider any changes to average climate conditions that may impact on your operations, for example extreme rainfall.

Also consider:

- critical thresholds - where a 'tipping point' is reached, for example a specific temperature where site processes cannot operate safely
- changes to averages - for example an entire summer of higher than expected rainfall causing waterlogging
- where hazards may combine to cause more impacts

You can add in other climate variables if you wish.

If you have stated on your application form that you do not expect to be operational in 2050, you must still consider climate change risks for the time you do intend to operate. Whilst the variables are for the 2050s, this is an estimated date and you may experience these conditions before then.

This worksheet will sit in your management system. It must appear on the management system summary you submit with your application, even if you do not need to submit the whole risk assessment with your application.

If your pre-mitigation risk score (column D) is 5 or higher, you must complete columns E to H.

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
1. Summer daily maximum temperature may be around 7°C higher compared to average summer temperatures now.	6	4	6	24	Risk of digesters heating beyond optimal operating temperature. Digesters are insulated against worse impacts. Risk of increased odour from sewage processes. Tanks are covered and OCU's utilised as appropriate.	2	2	4
2. Winter daily maximum temperature could be 4°C more than the current average, with the potential for more extreme temperatures, both warmer and colder than present.	2	2	4	8	Digesters are insulated and equipped with heating coils. Therefore, may not need boilers or heat from CHP. May require new gas engine to utilise biogas, however, the current engine will need to be replaced prior to this, so an assessment of engine size can be undertaken then.	2	2	4
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.	2	2	2	4	Works design basis may be exceeded. However, this would apply to UWWTD operations at the site rather than permitted activities.			
4. Average winter rainfall may increase by 29% on today's averages.	2	4	4	16	Rainfall would increase strain on site drainage, however volume could be handled by the associated UWWTD works so no impact. May need to increase bund or containment volume. Potential for impact on land spreading activities, during winter months. Site has cake pad at present, which may need to be extended to take this into account.	2	4	8

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
5. Sea level could be as much as 0.6m higher compared to today's level *.	1	1	1	1	Although close to the river, the site sits away from the main channel and is outside the flood zone, so sea level rises being mirrored by the river should not impact on the permitted activity.	1	1	1
6. Drier summers, potentially up to 41% less rain than now.	1	1	1	1	May reduce total flow through the UWWTD, but should not impact on permitted activities.	1	1	1
7. At its peak, the flow in watercourses could be 40% more than now, and at its lowest it could be 65% less than now.	1	1	1	1	No impact on permitted activities.	1	1	1

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.

3.2 Form B3

1 What activities are you applying to vary?

Table B3-1a: Types of activities

Schedule 1 listed activities						
Installation name	Schedule 1 references	Description of the Activity	Activity capacity	Annex I (D codes) and Annex II (R codes) and descriptions	Hazardous waste treatment capacity (if this applies)	Non-hazardous waste treatment capacity (if this applies)
Worksop (Manton) STW Bioresources	S5.4A1(b)(i) Recovery or a mix of recovery and disposal	From receipt of permitted waste through to digestion and recovery	380m ³ per day (input)	R3 Recycling / reclamation of organic substances which are	None	380m ³ per day

	<p>of non-hazardous waste with a capacity exceeding 100 tonnes per day involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC—</p> <p>(i) biological treatment by anaerobic digestion</p>	<p>of by-products (digestate).</p> <p>Anaerobic digestion of permitted waste including pasteurisation and chemical addition.</p>	<p>2650m³ per week (input)</p>	<p>not used as solvents (including composting and other biological transformation processes)</p> <p>R 13 Storage of waste pending any of the operations numbered R 1 to R 2 (excluding temporary storage, pending collection, on the site where the waste is produced)</p> <p>D 10 Incineration on land</p> <p>D 15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced)</p>		
<p>Worksop (Manton) STW Bioresources</p>	<p>S5.4A1(a)(i)</p> <p>Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities, and excluding activities covered by Council</p>	<p>From receipt of dewatering liquors for aerobic treatment to release of treated liquors to the works inlet</p>	<p>380 m³ per day (input)</p>	<p>D 8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12</p>	<p>None</p>	<p>380m³ per day</p>

	Directive 91/271/EEC— (i) biological treatment by aerobic means			D 15 Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage, pending collection, on the site where the waste is produced)		
Waste Activity	Import of waste for aerobic treatment	D8, D9; D15; R3, R13	150,000m³ per annum			
Name of DAA		Description of the DAA				
AR2		Imports of waste, including imports of municipal liquids or sludges in similar composition to UWWTD derived materials, sludge from other sewage treatment works and imports of digested sludge for dewatering;				
AR3		Blending of imported wastes prior to treatment;				
AR4		Operation of acid phase digestion				
AR5		Storage of digestate prior to dewatering;				
AR6		Dewatering of digested sewage sludge;				
AR7		Transfer of dewatering liquors back to the head of the sewage treatment works;				
AR8		Storage of dewatered sewage cake prior to offsite recovery;				
AR9		Storage of biogas;				
AR10		Combustion of biogas in an MCPD and SG compliant biogas CHP unit; and boiler units				
AR11		Emergency flare;				
AR12		Storage of raw materials.				
Total storage capacity (tonnes)		5000 m ³				
Annual throughput (tonnes each year)		137,800 tonnes				

Types of waste accepted

Table C3-1b – Waste accepted

Table C3-1b – Wastes for waste activity ONLY

Waste code	Waste code Description of the waste
01 05 04	freshwater drilling muds and wastes
01 05 07	barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
01 05 08	chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06
02 02 01	sludges from washing and cleaning
02 02 02	animal tissue waste
02 02 03	materials unsuitable for consumption or processing
02 02 04	sludges from on-site effluent treatment
02 03 01	sludges from washing, cleaning, peeling, centrifuging and separation
02 03 02	wastes from preserving agents
02 03 03	Wastes from solvent abstraction
02 03 04	materials unsuitable for consumption or processing
02 03 05	sludges from on-site effluent treatment
02 04 01	soil from cleaning and washing beet
02 04 02	off-specification calcium carbonate
02 04 03	sludges from on-site effluent treatment
02 05 01	materials unsuitable for consumption or processing
02 05 02	sludges from on-site effluent treatment
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 06 03	sludges from on-site effluent treatment
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
03 03 02	green liquor sludge (from recovery of cooking liquor)
03 03 05	de-inking sludges from paper recycling
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard

Waste code	Waste code Description of the waste
03 03 08	wastes from sorting of paper and cardboard destined for recycling
03 03 10	fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
03 03 11	sludges from on-site effluent treatment other than those mentioned in 03 03 10
04 01 01	fleshings and lime split wastes
04 01 05	tanning liquor free of chromium
04 01 07	sludges, in particular from on-site effluent treatment free of chromium
04 01 09	wastes from dressing and finishing
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 14 02 14
04 02 17	dye-stuffs and pigments other than those mentioned in 04 02 16
04 02 20	sludges from on-site effluent treatment other than those mentioned in 04 02 19
05 01 10	sludges from on-site effluent treatment other than those mentioned in 05 01 09
06 05 03	sludges from on-site effluent treatment other than those mentioned on 06 05 02
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 02 12	sludges from on-site effluent treatment other than those mentioned on 07 02 11
07 02 15	wastes from additives other than those mentioned in 07 02 14
07 03 12	sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 06 12	sludges from on-site effluent treatment other than those mentioned in 07 06 11
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 14	sludges from paint or varnish other than those mentioned in 08 01 13
08 01 16	aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 01 20	aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
08 03 07	aqueous sludges containing ink
08 03 08	aqueous liquid waste containing ink
08 03 13	waste ink other than those mentioned in 08 03 12
08 03 15	ink sludges other than those mentioned in 08 03 14
08 04 14	aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13
08 04 16	aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15
10 02 12	wastes from cooling-water treatment other than those mentioned in 10 02 11
11 01 12	aqueous rinsing liquids other than those mentioned in 11 01 11
16 01 15	antifreeze fluids other than those mentioned in 16 01 14

Waste code	Waste code Description of the waste
16 03 06	organic wastes other than those mentioned in 16 03 05
16 10 04	aqueous concentrates other than those mentioned in 16 10 03
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 02 06	Sludge/ effluents from physicochemical treatment other than those mentioned in 19 02 05
19 05 03	Off-specification liquid compost that arise from treatment of municipal, vegetable waste types
19 06 03	liquor from anaerobic treatment of municipal waste
19 06 04	digestate from anaerobic treatment of source segregated biodegradable waste
19 06 05	liquor from anaerobic treatment of animal and vegetable waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
19 07 03	landfill leachate other than those mentioned in 19 07 02
19 08 01	Screenings
19 08 02	waste from desanding
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 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 08 99	Centrate liquor only
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	Aqueous liquid wastes and aqueous concentrates from groundwater remediation other than those mentioned in 19 13 07
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	sludges from groundwater remediation other than those mentioned on 19 13 05
19 13 08	aqueous liquid wastes and aqueous concentrates from groundwater remediation other than those mentioned in 19 13 07
20 01 08	biodegradable kitchen and canteen waste
20 01 25	edible oil and fat
20 01 30	detergents other than those mentioned in 20 01 29
20 02 01	biodegradable waste – liquid wastes and mixed concentrates
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 04	Septic tank sludge
20 03 06	Waste from sewage cleaning

Waste code	Waste code Description of the waste
20 03 99	Cesspool waste and other sewage sludge only

Table C3-1b – Waste accepted for installation ONLY

Waste Code	Description of Waste
16 10 02	Aqueous liquid wastes other than those mentioned in 16 10 01 – consisting of cesspool waste and/or portable toilet and/or storage tank waste
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge only)
19 05 03	sewage sludge composted with biodegradable non-wastes only
19 06 06	digestate from anaerobic treatment of animal and vegetable waste (sewage sludge only)
19 08 01	Screenings
19 08 02	Sewage grit (waste from desanding) only
19 08 05	Sludges from treatment of urban waste water
19 08 99	Centrate liquor only
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)
20 03 04	Septic tank sludge
20 03 06	Waste from sewage cleaning
20 03 99	Cesspool waste and other sewage sludge only

2 Point source emissions to air, water and land

Table C3-2 Emissions to Air

Emission point reference and location (NGR/Latitude & Longitude)	Source	Parameter	Concentration	Units
A1	CHP engine (biogas only)	NO _x	500	mg/m ³
		SO ₂	350	mg/m ³
		CO	1400	mg/m ³
A2	Auxiliary Boiler 1 (fueled on biogas)	NO _x	200	mg/m ³
		SO ₂	100	mg/m ³
		CO	No limit set	mg/m ³

	Auxiliary Boiler 1 (fueled on natural gas)	NOx	100	mg/m ³
		SO ₂	100	mg/m ³
		CO	No limit set	mg/m ³
A3	Auxiliary Boiler 2 (fueled on biogas)	NOx	200	mg/m ³
		SO ₂	100	mg/m ³
		CO	No limit set	mg/m ³
	Auxiliary Boiler 2 (fueled on natural gas)	NOx	100	mg/m ³
		CO	No limit set	mg/m ³
A4	Emergency Flare (note 1)	NOx	150	mg/m ³
A5	Biogas storage relief vent	No limit set	-	-
A6	Digester storage tanks pressure relief valve	No limit set	-	-
A7	Digester storage tanks pressure relief valve	No limit set	-	-
A8	Digester storage tanks pressure relief valve	No limit set	-	-
A9	Biofilter OCUs	No limit set	-	-
A10	Other OCU	No limit set	-	-

Note 1: Monitoring to be undertaken in the even the auxiliary 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.

There are no permitted emissions to water, sewer or land from the activities covered by this permit.

3 Operating techniques

3a Technical standards

Table C3-3 Technical standards

Schedule 1 activity or DAA	Best available technique	Document reference
Anaerobic Digestion plant S5.4A1(b)(i) Storage of waste (DAA)	S5.06 – Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste	V5, May 2013
Anaerobic Digestion plant S5.4A1(b)(i)	How to comply with your environmental permit. Additional guidance for Anaerobic Digestion	V1.0, Nov 2013
Spark ignition gas engines and emergency flare (DAA)	LFTGN08: Guidance for Monitoring Landfill Gas Engine Emissions	V2, 2010
Other biological treatment of waste: deposit of imported non-hazardous waste	Control and monitor emissions for your environmental permit	https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

Schedule 1 activity or DAA	Best available technique	Document reference
for treatment through a wastewater treatment works.		
Other biological treatment of waste: deposit of imported non-hazardous waste for treatment through a wastewater treatment works.	H4 Odour Management – how to comply with your environmental permit	Published April 2011

3b General requirements

Table B3-4 General requirements

Name of the installation: Worksop (Manton) STW Bioresources	Document references
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.	N/A – see Table B2-6 above
If the technical guidance or your risk assessment shows that odours are an important issue, send us your plan for managing them.	See Odour Management Plan Appendix G
If the technical guidance or your risk assessment shows that noise or vibration are important issues, send us your noise or vibration plan (or both).	N/A – see Table B2-6 above

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 B2 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 Consequences

Classification	Definition
Low	<p>Impact is low or a minor, short-term nuisance.</p> <p>Minor release to a non-sensitive receptor or pollution of water course.</p> <p>Non-permanent health effects to human health (easily prevented by appropriate use of PPE)</p> <p>Minor surface damage to a building, structure, service or the environment which can be repaired immediately</p>
Medium	<p>Impact is noticeable in the short to medium term</p> <p>Large release impacting on the receiving media which kills flora and fauna and requires remediation</p> <p>Nuisance causing non-permanent health effects to human health</p> <p>Damage to buildings, structures and services which prevents use in the short-term and/or requires a specialist repair</p>
High	<p>Impact is significant, wide-ranging and long lasting effect</p> <p>Has either a chronic or acute impact on human health</p> <p>Very large release that has a major impact on flora and fauna which may be very difficult to remediate</p> <p>Significant damage to a single or multiple building, structure and service which prevents use over a long term and may require complete replacement</p> <p>May cause a long-term impact or contribute towards a global issue due to releases of greenhouse gases</p>

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

The following categorisation of risk has been developed and the terminology adopted as follows:

Term	Definition
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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 B2 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 B3-3b(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 NO_x, SO₂, CO₂ and VOCs	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors	High	Low	Medium	<p>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, boiler and emergency flare stack) have emission limits for NO_x, CO₂, SO₂.</p> <p>Flare stack height approx. 6m, CHP stack approx. 6m and boiler flue approx. 6m.</p>	Low
Gas transfer systems, gas storage tank, gas 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	<p>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.</p> <p>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.</p>	Low

						<p>Personnel on site wear portable gas detectors in order to alert staff to presence of biogas.</p> <p>A waste gas burner (emergency flare) is 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.</p> <p>PRVs are in place on the top of the digesters and gas holder to be operated in the event of failure of the emergency flare to prevent overpressurisation and catastrophic failure.</p>	
<p>Catastrophic loss of biogas emissions from gas transfer systems, gas storage tank, gas engines, flares or PRVs</p>	Abnormal	<p>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</p>	Low	High	Medium	<p>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.</p> <p>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.</p> <p>A waste gas burner (emergency flare) is 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.</p> <p>PRVs are place on the top of the digesters and gas holder to be operated in the event of</p>	Medium

						failure of the emergency flare to prevent overpressurisation and catastrophic failure.	
Combustion of biogas within CHP engine and emergency flare. Combustion of biogas or natural gas within boilers	Normal	Emissions to air and dispersion leading to: inhalation by local human and animal receptors. Global warming potential	High	Low	Medium	<p>Combustion plant is regularly maintained and appropriately sized to manage volumes of gas.</p> <p>Combustion plant operates within permitted ELVs subject to routine monitoring against permit compliance.</p> <p>CHP engine located away from the nearest residential and commercial properties which are over 350m away</p>	Low
Release of bioaerosols and dust	Normal	Emissions to air and dispersion leading to inhalation by local human and animal receptors. Odour impact of bioaerosols. Nuisance impact of dust.	High	Low	Medium	<p>The risk of bioaerosol and dust is largely minimised by storing the digested sludge cake on the Eastern side of the site on a cake pad. This is approximately 360m from the nearest sensitive residential receptors, separated by fields and a stand of trees. Cake is stored on an engineered hardstanding cake pad which is connected to the site drainage system.</p> <p>Roads are made from concrete/asphalt and not prone to the generation of dust.</p>	Low
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.	Medium	Low	Low	<p>The risk of bioaerosol and dust is largely minimised by storing the digested sludge cake on the Eastern side of the site on a cake pad. Site is located in a rural, relatively sparsely populated area away from sensitive receptors. Natural barriers to windblown dispersion are provided by stands of trees to the South and East.</p>	Low

						<p>Roads are made from concrete/asphalt and not prone to the generation of dust.</p> <p>Staff responsible for site housekeeping and cleaning of spillages in a timely manner.</p>	
<p>Spillage of liquids, including chemicals and oils.</p>	Abnormal	<p>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</p> <p>Emissions to ground and ground water.</p>	Low	Medium	Low	<p>The closes surface water body is the River Ryton on the Southern and Eastern boundaries.</p> <p>Chemicals and oils all stored within suitably bunded tanks and IBCs with rainwater removed as required to maintain 110% capacities. Chemical delivery areas are centrally located and fitted with penstock valves to contain large spillages.</p> <p>Handling and use of chemicals and oils is carried out by trained personnel. COSHH data sheets available.</p> <p>Spill kits available on site.</p> <p>There are no point source emissions to water with drainage system pumping back to works inlet.</p>	Low
<p>Spillage from storage and digestion tanks, overtopping of tanks, leakage from same tanks and from buried pipes</p>	Abnormal	<p>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</p>	Medium	Medium	Medium	<p>The site lies within a Groundwater Source Protection Zone 3 (GPZ).</p> <p>Provision of suitably structurally integral tanks constructed from steel and glass reinforced plastic/insulation (where needed). All tanks are subject to internal and external asset inspection and proactive maintenance</p>	Low

		Emissions to ground and ground water.				<p>programme including regular visual inspection for cracks or weeping.</p> <p>Leak detection systems, visual checks during regular day-to-day operations and scheduled preventative maintenance of equipment, such as pumps, pipes, joins etc</p> <p>Biogas condensate discharged back to the works inlet through site drainage system.</p> <p>Spill kits available on site.</p> <p>There are no point source emissions to water with drainage system pumping back to works inlet.</p>	
Generation of solid waste resulting in litter	Normal	Releases of litter to the environment. Visual nuisance and local loss of amenity	Low	Low	Low	<p>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.</p> <p>Waste is stored securely for collection by appropriately licensed approved contractors.</p> <p>Litter picking activities are completed as required.</p>	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 G.

Note there is no history of odour complaints relating to the site operations:

Table B3-3b(ii) Odour risk assessment

Activity/Hazard	Normal or Abnormal	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
H₂S/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 the two primary digestion tanks which are covered with fixed roofs. The nearest properties, consisting of a farm, is approx. 475m East from the digesters. Small amounts of biogas may also be generated within reception tanks and digestate storage tanks located centrally. H ₂ S production is controlled through the digestion process which can be manually overridden if required. Site has no history of odour complaints	Low
Loss of containment from biogas holder and biogas pipework	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors	Low	Medium	Low	Biogas is principally stored within a double membrane gas holder which is suitably sized to manage biogas generation.	Low

		Loss of amenity from odour nuisance				<p>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.</p> <p>Personnel on site wear portable gas detectors in order to alert staff to presence of biogas.</p> <p>Physical protection measures in place for biogas holder, including kerbing and bollards and pipework is guarded.</p> <p>PRVs available to safely manage pressures within the biogas holder and prevent under or over pressurization.</p>	
Activation of biogas pressure relief valve	Abnormal	<p>Emissions to air and dispersion leading to inhalation by local human receptors</p> <p>Loss of amenity from odour nuisance</p>	Low	Low	Low	<p>PRVs are only activated in emergency situations to maintain safety within the biogas system and are re-seated/repared promptly to minimize biogas emissions.</p> <p>PRVs subject to monitoring via pressure on SCADA and visual checks by site personnel.</p> <p>Biogas is principally stored within the site gas holder which is suitably sized to manage biogas generation and act as buffer storage for biogas. Site has one CHP engine, two boilers and one flare which are used in order of preference to maximise recovery of energy.</p>	Low

						<p>CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets, with flare maintained in good working order should it need to be used.</p> <p>The nearest properties, consisting of a farm, is approx. 475m East from the digesters.</p>	
<p>H₂S/biogas emitted when biogas cannot be combusted in engine, boilers or flare</p>	Abnormal	<p>Emissions to air and dispersion leading to inhalation by local human receptors</p> <p>Loss of amenity from odour nuisance</p>	Low	Low	Low	<p>Biogas is principally stored within the double membrane gas holder which is suitably sized to manage biogas generation and act as buffer storage when biogas cannot be combusted. Site has one CHP engine, two boilers and one flare giving multiple outlets for biogas.</p> <p>The nearest properties, consisting of a farm, is approx. 475m East from the digesters.</p> <p>CHP engines and boilers are subject to regular maintenance to maintain maximum use of outlets, with flare maintained in good working order should it need to be used.</p>	Low
<p>Storage of treated digested sludge cake</p>	Normal	<p>Emissions to air and dispersion leading to inhalation by local human receptors</p> <p>Loss of amenity from odour nuisance</p>	High	Low	Medium	<p>Digested sludge cake is stored on an engineered hardstanding cake pad which is connected to the site drainage system on the Eastern and is inherently low odour material. Nearest receptors are approx. 475m East of the pad.</p> <p>Should any odorous sludge cake be produced, this will be subject to process checks undertaken to identify root cause of production and removed from site expediently.</p>	Low

Failure of odour control units	Abnormal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	High	Medium	Odour control units are subject to regular preventative maintenance. Media is replaced inline with the manufacturer recommendations	Low
Storage of site generated wastes	Normal	Emissions to air and dispersion leading to inhalation by local human receptors Loss of amenity from odour nuisance	Low	Low	Low	Wastes generated on site are not inherently odorous and is stored securely for collection by appropriately licensed approved contractors.	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. Note there is no history of substantiated noise complaints relating to the site:

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 engine	Normal	Generation of noise with air transportation, causing loss of amenity to local human receptors	High	Low	Medium	The CHP engine is acoustically baffled, self-contained and designed for external applications therefore noise emissions are already low.	Low

						<p>CHP engine is located over 500m from the nearest sensitive receptor. Good maintenance of plant to ensure that excessive noise levels are not generated.</p> <p>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.</p>	
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	<p>Air cooled radiators do not give rise to high levels of noise and are only used as required. They are centrally located, away from sensitive human receptors with the nearest sensitive receptors over 500m away.</p> <p>Good maintenance of fans to ensure that excessive noise levels are not generated. Where repair or replacement is required, this will be completed promptly.</p>	Low
Operation of site vehicles	Normal	<p>Generation of noise with air transportation, causing loss of amenity to local human receptors.</p> <p>Generation of vibration with ground transmission, causing loss of amenity to local human receptors.</p>	Medium	Medium	Medium	<p>Vehicle movements across the site subject to speed limit and traffic management plan to reduce generation of noise.</p> <p>Reversing obligations minimised by site layout.</p> <p>Tanker deliveries limited to daytime only.</p>	Low

<p>Operation of emergency flare</p>	<p>Abnormal</p>	<p>Generation of noise with air transportation, causing loss of amenity to local human receptors.</p>	<p>Medium</p>	<p>Low</p>	<p>Medium</p>	<p>Use of the emergency flares is minimized by prioritizing use of the CHP and boilers with use of the flare recorded.</p> <p>Emergency flare is located centrally, away from sensitive human receptors with the nearest sensitive receptors over 500m away</p>	<p>Low</p>
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Table C3-3b (iv) - Environmental Risk Assessment and Accident Management Plan

Activity/Hazard	Environmental Impact (Pathway-Receptor)	Likelihood	Consequence	Risk	Risk Management	Residual Risk
<p>Major fire and/or explosion causing the release of polluting materials to air, water or land.</p>	<p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> <p>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.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p>	<p>Low</p>	<p>High</p>	<p>Medium</p>	<p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Management systems requires DSEAR assessment which is adhered to by site operations.</p> <p>Designated ATEX zones on site and lightning protection system in place around biogas holder. Fire alarm system installed and maintained.</p> <p>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.</p> <p>Warning signs clearly displayed and staff wear gas alarms to alert to the presence of biogas. All visitors</p>	<p>Low</p>

					<p>subject to site inductions and accompanied. Permit-to-work system in place.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively.</p> <p>Smoking only permitted in designated areas of site.</p>	
<p>Minor fire causing the release of polluting materials to air, water or land</p>	<p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> <p>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.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p>	<p>Low</p>	<p>Medium</p>	<p>Low</p>	<p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Management systems requires DSEAR assessment which is adhered to by site operations.</p> <p>Designated ATEX zones on site and lightning protection system in place around biogas holder. Fire alarm systems installed and maintained.</p> <p>Biogas contained within a closed system and monitored for safety. Automatic cut off valve to biogas supply to stop gas glows, electric temperature sensor, pressure monitors, flame arrestors, etc.</p> <p>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.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively.</p> <p>Smoking only permitted in designated areas of site.</p>	<p>Low</p>

<p>Failure to contain firefighting water</p>	<p>Emissions to ground and ground water of contaminated firefighting water entering soil and/or groundwater. Run-off from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality</p>	<p>Low</p>	<p>Medium</p>	<p>Low</p>	<p>Likelihood of firefighting water being generated is low as the risk of fire is low.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Spill kits provided around the site can be used to direct run-off towards site drainage. Site drainage returns to works inlet providing containment and treatment process for fire water.</p> <p>Arrange for off-site tankering of firefighting water, if required.</p>	<p>Low</p>
<p>Accidental explosion of biogas</p>	<p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p> <p>Pollution of water or land</p>	<p>Low</p>	<p>High</p>	<p>Medium</p>	<p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Management systems requires DSEAR assessment which is adhered to by site operations.</p> <p>Designated ATEX zones on site and lightning protection system in place around biogas holder. Fire alarm systems installed and maintained.</p> <p>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</p> <p>Likelihood reduced by availability of multiple on site uses of biogas (CHP, boilers and emergency flare) and use of pressure release valves as a safety measure.</p>	<p>Low</p>

<p>Significant leak of biogas to atmosphere</p>	<p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population.</p> <p>Global warming potential of greenhouse gases.</p>	<p>Low</p>	<p>High</p>	<p>Medium</p>	<p>Site assets are protected by physical means to prevent vehicle strike and exposed pipework is guarded.</p> <p>Regular proactive and preventative maintenance and regular visual checks.</p> <p>Pressure relief valves are present to avoid overpressurisation of biogas system. Gas detectors are in place between the two layers of biogas membranes which will raise the alarm should a leak of biogas be detected</p>	<p>Low</p>
<p>Leaks of emission to air, but principally NOx.</p>	<p>Emissions to air and dispersion leading to harm to protected nature conservation sites – SSSIs, SAC and SPA.</p> <p>Harm to protected site through toxic contamination, nutrient enrichment, disturbance etc.</p>	<p>Medium</p>	<p>Medium</p>	<p>Medium</p>	<p>The nearest designated protected habitat is a SAC that is 9.4 km from the site and further from assets that are located within central areas.</p> <p>Emissions modelling shows that deposition and impacts on habitats sites are acceptable.</p> <p>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.</p>	<p>Low</p>
<p>Spillage of raw materials during (e.g. diesel, polymer) during use, transfer and disposal operations.</p>	<p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p>	<p>Low</p>	<p>Medium</p>	<p>Low</p>	<p>Raw materials are stored on made ground, within banded containers or on bunds to contain spillages of 110% of the volume. Contents of bunds are regularly checked during environmental audits and after periods of heavy rainfall and emptied as required.</p>	<p>Low</p>

	<p>Chronic effect on water quality</p>				<p>In event of a spillage, follow site spillage response plan and inform relevant site personnel. COSHH data sheets available.</p> <p>Deliveries to site are made by approved suppliers. Use of raw materials is carried out by trained personnel or automatically controlled processes.</p> <p>Penstock valves available within 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.</p> <p>Site drainage returns to works inlet providing treatment process for suitable materials, or arrange off-site tankering of waste, if required.</p>	
<p>Spillage of sludges (e.g. raw sludge, digested sludge) during processing and transfer operations e.g. tank overtopping, pipework leaks</p>	<p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality</p>	<p>Low</p>	<p>Low</p>	<p>Low</p>	<p>Processing and transfer operations of waste materials is largely an automatic process controlled by the Process Controllers and parameters set within the SCADA system.</p> <p>Storage and digestion tanks are fitted with sensors to monitor levels within a tank and can inhibit additional pumping if high alarms activate.</p> <p>Preventative maintenance programme and maintenance plans are in place in order to maintain equipment effectively and minimise the risk of spillages.</p>	<p>Low</p>

					<p>In event of a spillage, follow site spillage response plan and inform relevant site personnel and relevant authorities.</p> <p>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.</p>	
<p>Failure of sludge storage tanks / digester tanks</p>	<p>Emissions to ground and ground water of materials entering soil and/or groundwater. Run-off of liquids from site to surface water courses.</p> <p>Harm to aquatic flora and fauna.</p> <p>Chronic effect on water quality.</p>	Low	High	Medium	<p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Regular internal and external infrastructure inspections for tanks and pipework and planned preventive maintenance system in place. Regular visual inspections for tanks and pipework and reactive maintenance.</p> <p>In-line flow monitoring? in key locations and tank level monitoring would identify losses and enable a quick response.</p> <p>Tanks are based on made ground and connected to site drainage which returns to works inlet. Sludge is relatively viscous and not highly mobile limiting the distance it can spread in a short time period.</p>	Low
<p>All on-site hazards: machinery</p>	<p>Direct physical contact with human population and /or livestock after gaining unauthorised access to the installation</p>	Low	High	Medium	<p>Direct physical contact is minimised by activity being carried out by enclosed plant and equipment, which has undergone a HAZOP assessment</p>	Low

	<p>Bodily injury</p>				<p>Site activities are managed and operated in accordance with a management system. Site physical security measures to prevent unauthorised access.</p> <p>Assets are protected by various physical means including fencing, kerbing and bollards to prevent vehicle strikes.</p> <p>Site has a one-way traffic management system to minimise the need to reverse. Use of banksmen as appropriate.</p> <p>Vehicles equipped with reversing alarms.</p>	
<p>Vandalism causing the release of polluting materials to air (smoke or fumes), water or land.</p>	<p>Emissions to air and dispersion leading to inhalation by local human receptors. Respiratory irritation, illness and nuisance to local population</p> <p>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.</p> <p>Injury to staff, fire fighters or arsonists/vandals.</p>	<p>Low</p>	<p>High</p>	<p>Medium</p>	<p>Unauthorised access is unlikely to happen and minimised by physical site security measures and effective management systems.</p> <p>Site has access controlled gated entry for all vehicular access. Fence runs the perimeter of the site.</p> <p>Additional security fences around some assets and other assets are kept within locked containers or buildings. Warning signs are displayed.</p>	<p>Low</p>

<p>Flooding from rivers, streams and groundwater</p>	<p>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.</p>	<p>Medium</p>	<p>Low</p>	<p>Low</p>	<p>The site generally sits within Flood Zone 1 and has a low annual probability of flooding, with wider site within a Flood Zone 2.</p> <p>General wider works designed to minimise risk of localised works flooding due to storm surges.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Take appropriate corrective and preventative actions to minimise environmental impact</p>	<p>Low</p>
<p>Flooding due to drain blockages and/or excessive rainfall causing localised on-site surface water flooding</p>	<p>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.</p>	<p>Medium</p>	<p>Low</p>	<p>Low</p>	<p>Site wide drainage system linked to main sewage works, which includes additional capacity in storm tanks within the works to manage additional flows.</p> <p>Follow site Incident Response Plan and inform relevant authorities.</p> <p>Take appropriate corrective and preventative actions to minimise environmental impact</p>	<p>Low</p>
<p>Loss of mains power leading to failure of pumps / control systems and possible leaks and escape of sludge.</p>	<p>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.</p>	<p>Low</p>	<p>Medium</p>	<p>Low</p>	<p>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.</p> <p>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.</p>	<p>Low</p>

					Site wide drainage system linked to main sewage works in the event of a spillage.	
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3c –Types and amounts of raw materials

Table B3-5 Types and amounts of raw materials

Name of the installation	Workshop				Alternatives
	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)	
Section 5.1A(1)(b)(i)	Anti foam	1000l	3000l	Added to primary digesters to reduce foaming, as required	Standard product used for this purpose within the industry
Section 5.1A(1)(b)(i)	Polyelectrolyte	5 tonnes	200 tonnes	Flocculant added to digested sludge to aid centrifugation and dewatering	Standard material added in industry
	Natural gas/Diesel	As required	As required	Back-up fuel for use within boilers and or back-up generators	
	Lubricating oils	205l	500l	Equipment lubricant	
	Glycol coolant	205l	500l	CHP engine coolant	
	Filter media – tbc	As required	As required	Odour control	
	Siloxane media - carbon	As required	As required	Silica removal	

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 A1 – A3 to be monitored in accordance with the requirements of MCPD and Environment Agency guidance.

Emission points A4 (Emergency Flare), A5 (Biogas storage relief valves), A6-A8 (Digester PRVs) and A9-A10 (Biofilters) to be monitored in accordance with current EA guidance.

4b Point source emissions to air only

The site has a number of emission points to air. Points A1 – A3 are subject to gas monitoring in accordance with the requirements of the current environmental permit, MCPD and EA guidance.

Hours of operation of the flare, A4, to be monitored and logged. In the unlikely event that the total annual hours of operation exceed 10% of the hours in a year (836 hours), emissions from the flare would be subject to monitoring in accordance with EA guidance.

There is no routine monitoring proposed for points for PRVs and OCUs other than recommended by the manufacturer to achieve effective operational conditions.

5 Environmental impact assessment

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

No

6 Resource efficiency and climate change

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

Table B3-6a below describes the measures taken on site to minimise energy use.

Table B3-6a – Energy efficiency measures

Operating and maintenance	Documented measures in place	
Regular testing and maintenance of biogas systems for leaks, seals, and condensate traps	Yes	Maintenance/servicing undertaken by qualified technicians and registered organisations. Records are maintained on site.
Operation of motors and drives	Yes	Regular inspections/lubrication and maintenance undertaken by qualified technicians and specialist contractors for motor rewinds and recorded on Maintenance Tracking System.
Hot water systems	Yes	Digester system monitored constantly and inspected and tested regularly by an operator and recorded.
Lubrication to avoid high friction losses	Yes	Technicians and specialist contractors carry out regular lubrication, including CHP engine oil change, and records are maintained.
Boiler maintenance e.g. optimising excess air	Yes	Carried out as per legislative requirements.
Maintenance of steam pressure relief valves	Yes	Carried out as per legislative requirements.
Physical measures	Documented measures in place	
Sufficient insulation of steam systems, heated vessels and pipework	Yes	All steam lines, digesters and boilers have insulation to minimise heat losses.
Provision of sealing and containment methods to maintain temperature	Yes	Anaerobic digesters are enclosed.
Building services	Documented measures in place	
Energy efficient lighting is in place	Yes	There are limited building service requirements on site, energy efficient options are provided where readily available, and when equipment comes up for renewal.
Space heating	Yes	
Hot water	Yes	
Temperature control	Yes	
Ventilation	Yes	
Draft proofing	Yes	
BAT conclusions for energy recovery	Documented measures in place	
Heat recovery	Yes	Heat recovered from CHP engines operated to provide electrical power, to maintain anaerobic reactor temperature.
Heat exchangers	Yes	Heat exchangers are used in the CHP Engines and in the anaerobic reactors.

Re-use of spent cooling water	Not Applicable	
Minimisation of water use and re-circulating water systems for energy saving	Yes	Water is recirculated within the anaerobic reactor heating systems
Good insulation	Yes	Boilers, anaerobic reactors and pipework are insulated
Plant layout to reduce pumping distances	Yes	Where existing layout allows
Optimised energy efficiency measures for combustion plant	Yes	Regular maintenance.

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

The main site energy sources are electricity from the public supply and biogas generated by the anaerobic digester which is combusted in the CHP engine to generate electricity and heat on site.

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.

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

See response to question 3c above.

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 waste. 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.

7 Installations that include a combustion plant (excluding waste incinerators)

7a List all your combustion plant at the site and provide thermal input and operating hours for each

Document reference

7b Do any of your combustion plants have a net rated thermal input of one or more MW and is not an excluded MCP?

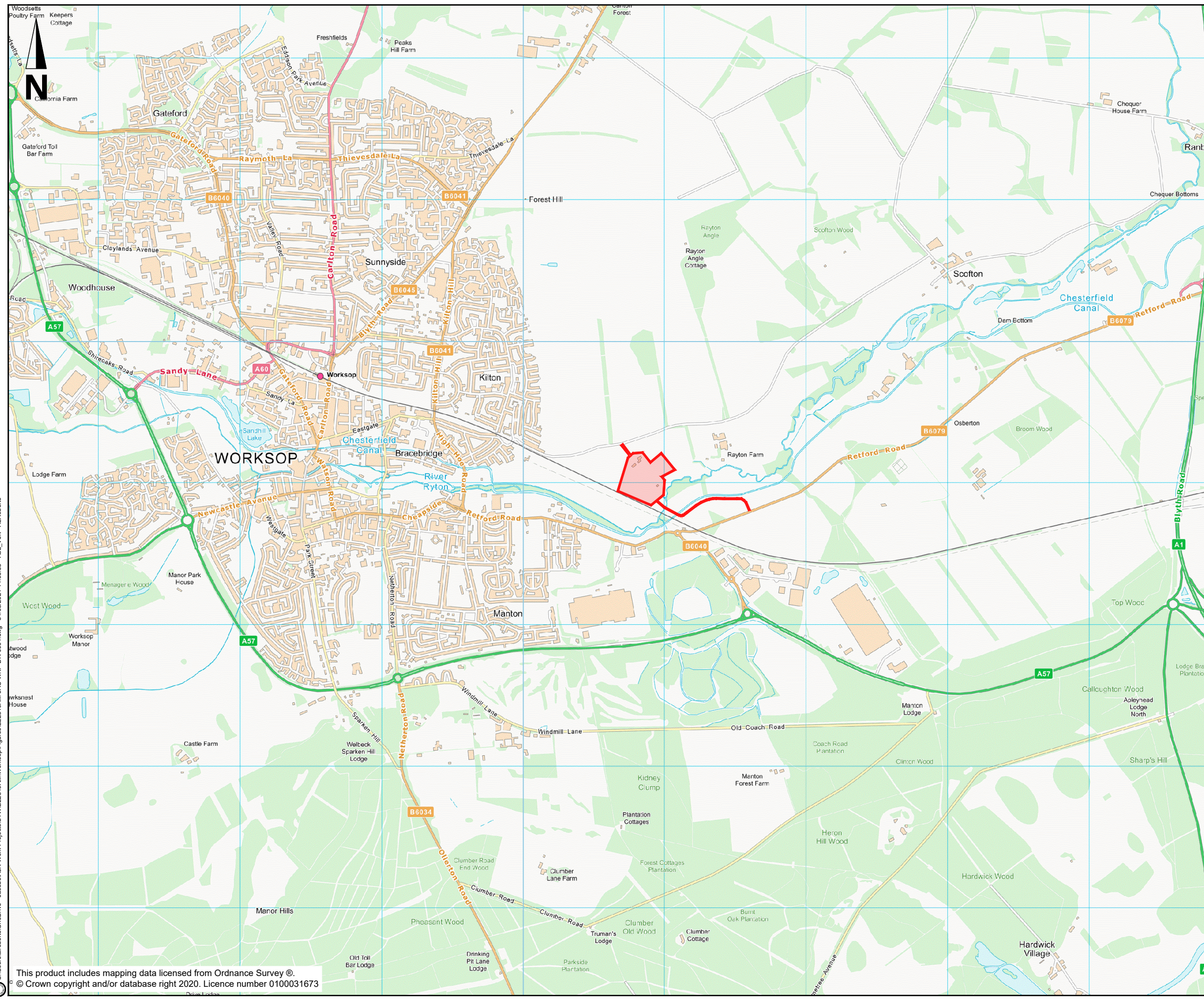
Yes

Medium Combustion Plant Information			
MCP specific identifier*	Worksop - CHP 1	Worksop – Boiler 1	Worksop – Boiler 2
12-digit grid reference or latitude/longitude	NGR SK 60894 79070	NGR SK 60885 79062	NGR SK 60885 79062
Rated thermal input (MW) of the MCP	2.1MW	1.03MW	1.03MW
Type of MCP (diesel engine, gas turbine, other engine or other MCP)	Gas engine	Boiler	Boiler
Type of fuels used: gas oil (diesel), natural gas, gaseous fuels other than natural gas	Biogas	Biogas and natural gas	Biogas and natural gas
Date when the new MCP was first put into operation (DD/MM/YYYY)	Pre 2018	Pre 2018	Pre 2018
Sector of activity of the MCP or the facility in	E37.00	E37.00	E37.00

Medium Combustion Plant Information			
which it is applied (NACE code**)			
Expected number of annual operating hours of the MCP and average load in use	8760 (modelled operating all year)	Approximately 6,000 hours (modelled operating at 100% load)	Approximately 6,000 hours (modelled operating at 100% load)
Where the option of exemption under Article 6(8) is used the operator (as identified on Form A) should sign a declaration here that the MCP will not be operated more than the number of hours referred to in this paragraph	N / A	N / A	N / A

Appendix A. Figures

A.1.1 Site location plan



C:\Users\alroberts\OneDrive - Jacobs\AJR-Work Projects\STWB22849AM\Worksop\Figures\B22849AM-JAC-WKP-DR-001.dwg - 31/03/2021 11:05:58 - A31_Vert - ALRoberts

Rev	Rev. Date	Purpose of revision	AR	MM	JK	MM
P01	JAN 2021	FOR INFORMATION				
 Jacobs House, Shrewsbury Business Park, SY2 6GG Tel: +44(0)1743 284 8000 Fax: +44(0)1743 284 800 www.jacobs.com						
Client			SEVERN TRENT			
Project			STC IED PERMIT WORKSOP STW			
Drawing title			FIGURE 1 SITE LOCATION PLAN			
Drawing status			PERMITTING			
Scale	1:25,000	DO NOT SCALE				
Jacobs No.	B22849AM	Rev	P01			
Drawing number	B22849AM-JAC-WKP-DR-0001					
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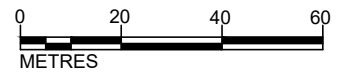
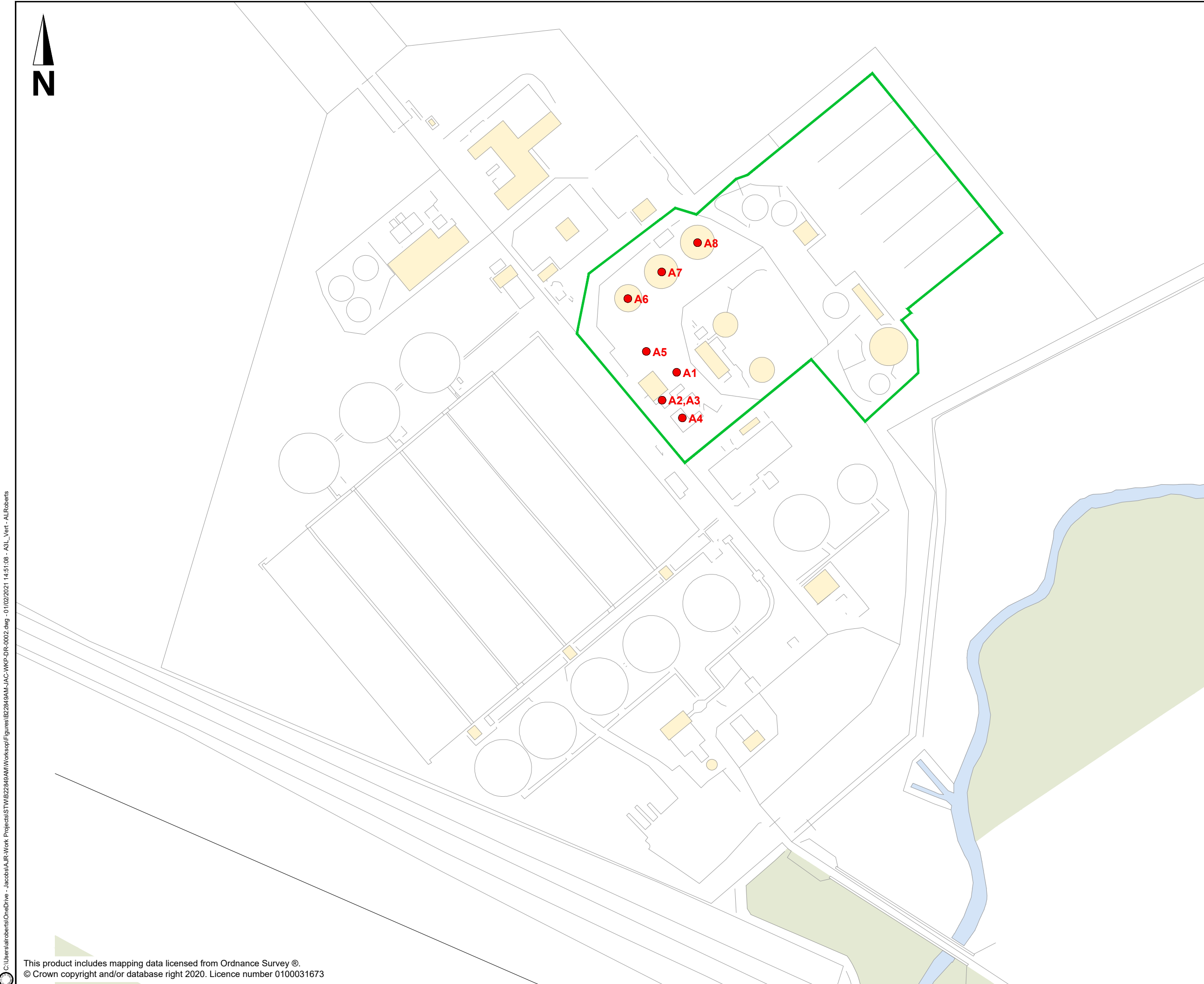
This product includes mapping data licensed from Ordnance Survey ©.
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A.1.2 Site layout plan



KEY:

	Installation Boundary
	Air Emission Point



P01	JAN 2021	FOR INFORMATION	AR	MM	JK	MM
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Rev'd	Apprv'd

Jacobs
 Jacobs House, Shrewsbury Business Park, SY2 6GG
 Tel: +44(0)1743 284 8000 Fax: +44(0)1743 284 800
 www.jacobs.com



Client
SEVERN TRENT

Project
 STC IED PERMIT
 WORKSOP STW

Drawing title
**FIGURE 2
 INSTALLATION BOUNDARY
 AND AIR EMISSION POINTS**

Drawing status
 PERMITTING

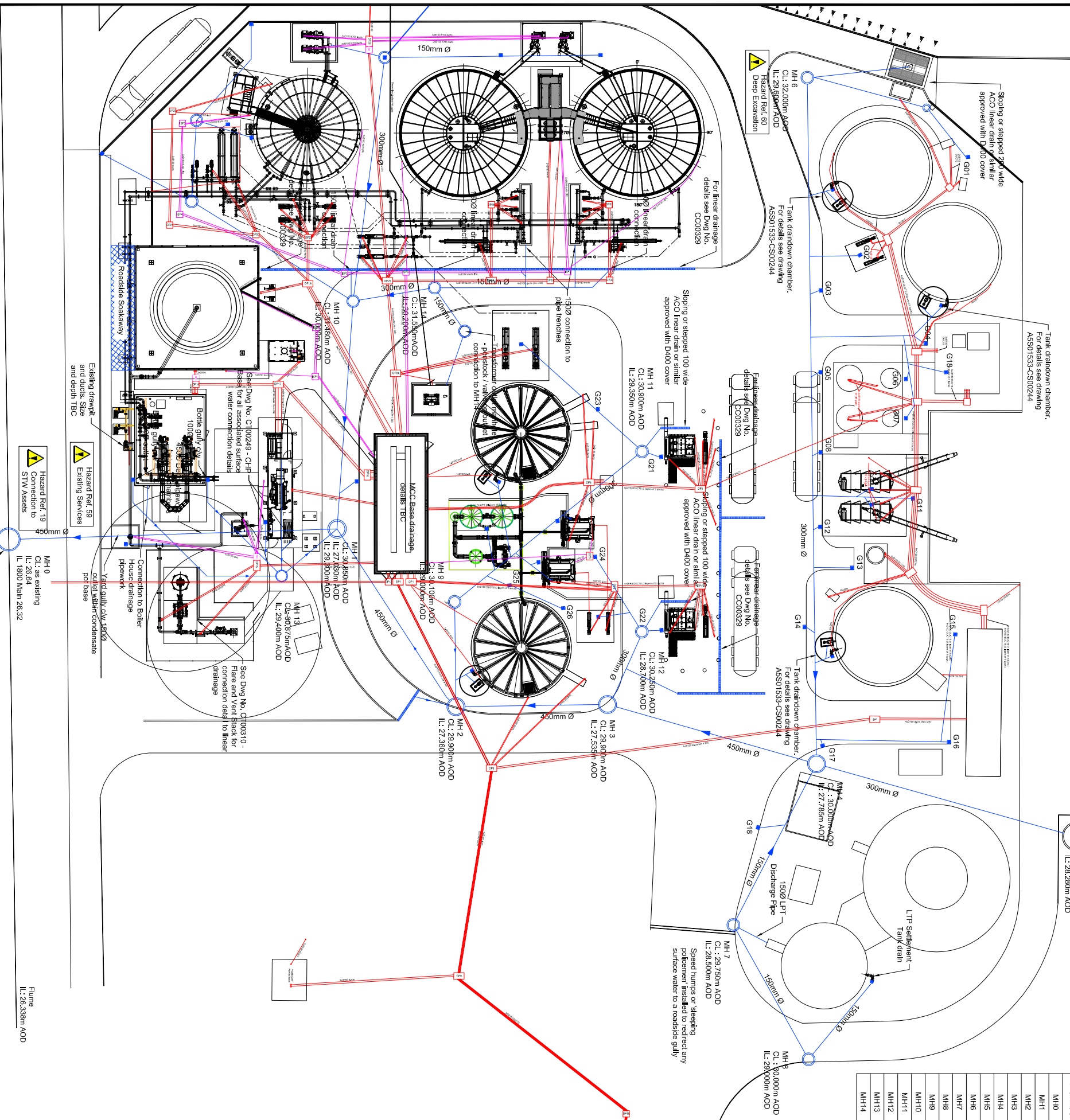
Scale
 AS SHOWN DO NOT SCALE

Jacobs No. B22849AM Rev P01

Client no.
 Drawing number
B22849AM-JAC-WKP-DR-0002

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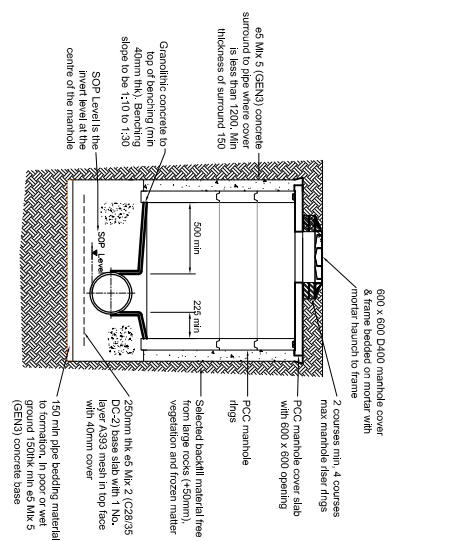
A.1.3 Site drainage plan



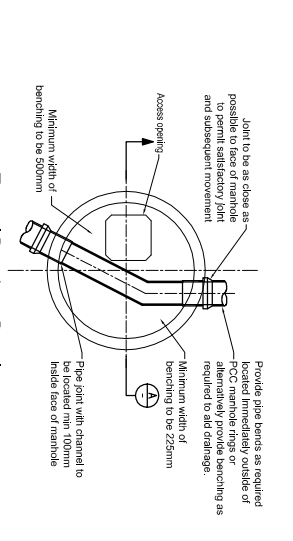
Manhole Number	Ring Diameter	Cover Type	Setting Out Point		Cl Level
			Easting	Northing	
MH0	2400	D400	SEE NOTE 8	SEE NOTE 8	TBC
MH1	1800	D400	460901.298	379066.497	30.850
MH2	1800	D400 Gable	460924.814	379062.003	29.900
MH3	1800	D400 Gable	460938.166	379072.267	29.300
MH4	1800	D400	460961.136	379085.227	30.000
MH5	1800	Open	460986.650	379096.502	29.780
MH6	1200	D400	460910.161	379143.784	32.000
MH7	1200	D400 Gable	460965.494	379062.714	29.750
MH8	1200	D400 Gable	460982.015	379062.287	30.000
MH9	1200	D400	460917.035	379071.258	30.100
MH10	1200	D400	460986.008	379090.679	31.480
MH11	1200	D400	460922.751	379098.380	30.900
MH12	1200	D400	460935.902	379082.282	30.250
MH13	1200	D400	TBC	TBC	30.375
MH14	1200	D400	460992.290	379097.827	31.550

Manhole Schedule

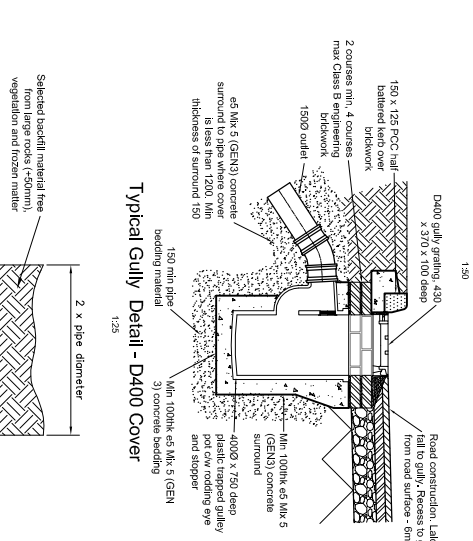
Typical Manhole Detail - D400 Cover
Section A-A



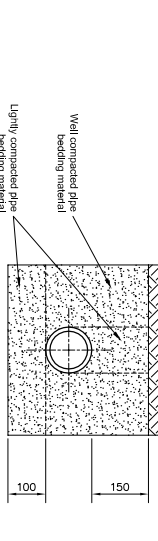
Typical Benching Detail
Plan View



Typical Gully Detail - D400 COVER



Typical Pipe Bedding Detail



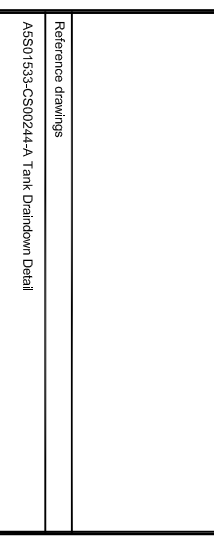
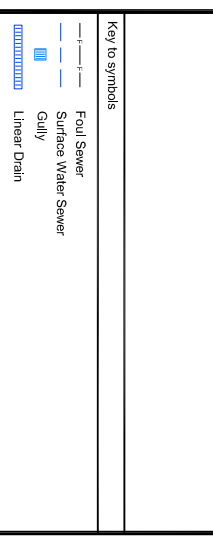
Purpose of Issue: As Built

Significant risks (Health, Safety and Environmental)

RESIDUAL RISK ASSESSMENT

Wherever possible, risk is designed-out of the proposal during the design process. Where this is not possible, the risk will be minimised and any residual risk will be noted and indicated by the symbol.

- Notes
- This drawing to be read in conjunction with all relevant drawings as listed below.
 - All dimensions are shown in millimetres (mm), unless noted otherwise.
 - All levels are shown in metres (m) relative to AOD, unless noted otherwise.
 - No dimensions are to be scaled from this drawing.
 - Refer to QES summary, Design Hazard Elimination and Management Record (DHEMR) and Environmental Risk Assessment for further details of residual risks.
 - Final manhole MH0 position to be determined on site following identification of existing service routes. The manhole is to be built so that it does not affect the services. Manhole cover level to be at the existing ground level. Manhole will need to incorporate an office plate to restrict pass forward to 80/15 as agreed with STW.
 - This drawing incorporates previously issued drawing ASS01533-CB00255 Rev B Manhole Schedule.
 - Gravily filtrate line and pumped process sludge lines not shown for clarity.



Rev	Date	Description	Author	T. CHK	B. CHK	App'd
Z		As Built				

SEVERN TRENT WATER

Mot MacDonald Bentley Limited

One Supply Chain - Non-Infrastructure Delivery Team

Langley Lane, Telephone: 01952 488210
 Skipton, Fax: 01952 488211
 Wetherby, Email: info@mmbl.co.uk
 Website: www.mmbl.co.uk

Mot MacDonald Bentley Limited

Mot MacDonald Bentley Limited

CONSTRUCTION KNOWLEDGE

The Workshop STW - Sludge Digestion
Drainage Layout

As Built

Site Address: Workshop STW, Rayton Lane, Kilm, Workshop, Northampton, NN1 9AD
 OS Grid Ref: SK67772 S1W FLOCC D: 11488

Scale at A1

As shown

Mot MacDonald Bentley File Ref: ASS01533-CB00254-Z-Drainage Layout

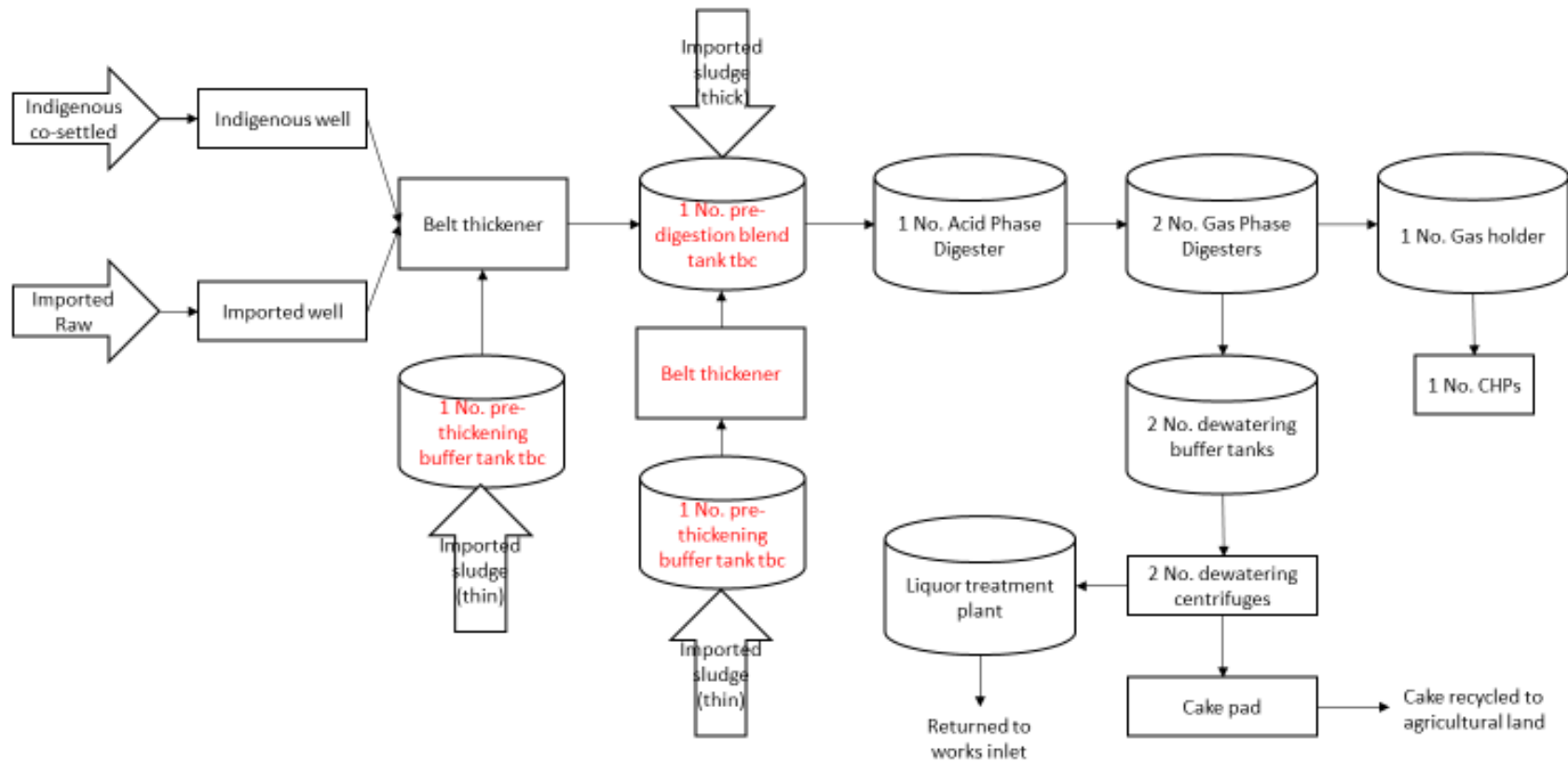
Drawing No: **ASS01533-CB00254**

Rev: **Z** Status: **ASB**

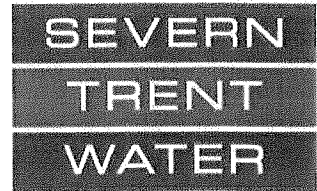
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A.1.4 Process Flow Diagram



Appendix B. Certificates



Severn Trent Water Limited

Severn Trent Centre
2 St John's Street
Coventry
CV1 2LZ

Tel 02477 715000
Fax 02477 715871

www.severntrent.com
www.stwater.co.uk

Letter of Authority

I confirm that Joanne Chapman is authorised by Severn Trent Water Ltd to apply for all Environmental Permits, variations, and permit surrenders required by the Environment Agency and Natural Resources Wales in connection with permissible waste related activities.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Bronagh Kennedy".

Bronagh Kennedy
General Counsel and Group Company Secretary
Severn Trent Water



This is to certify that the Environmental Management System of

Severn Trent Water Limited

Severn Trent Centre, 2 St John's Street, Coventry, CV1 2LZ

applicable to

Management and delivery of wastewater treatment processes. Transfer and storage of highway waste on depots. CHP biogas plant activities. Mothballed landfill monitoring activities. Head office functions at Severn Trent Centre.

has been assessed and registered by NQA against the provisions of

ISO 14001 : 2015

This registration is subject to the company maintaining an environmental management system to the above standard, which will be monitored by NQA.

Certificate No:4230

Reissued:09/08/2018
Valid Until:09/08/2021

A handwritten signature in black ink, appearing to read 'M Coates', is written over a large, faint, light blue watermark of the letters 'nqa'.

Managing Director





Annex to Certificate No: 4230

The following sites are included within the certification:

Abberley – The Common (STW)	The Common, Worcestershire, Abberley, WR6 6AY
Abbey Lane - Maltby (STW)	Abbey Lane, Maltby, Rotherham, S66 8NW
Ackleton/. Stableford (STW)	Brook Vale Farm, Stableford, Bridgnorth, WV15 5LS
Acton Burnell (STW)	Acton Burnell, Shrewsbury, SY5 7PB
Adbaston (STW)	Marsh Meadow, Adbaston, Stafford, ST20 0QE
Adlingfleet (STW)	Cow Lane, Adlingfleet, Goole, DN14 8HY
Albrighton (STW)	Worthington Drive/ Off Newport Road, Albrighton, Wolverhampton, WV7 3EJ
Alcester (STW)	Oversley Green or Mill Lane, Alcester, Stratford, B49 6LQ
Alderton (STW)	Stow Road, Alfreton, DE55 7FF
Alfreton (STW)	Off Rodgers Lane, Alfreton, DE55 7FF
Alstonfield (STW)	Alstonfield, Ashbourne, DE6 2FS
Alton (STW)	New Road, Alton, Alton, ST10 4DD
Alvechurch (STW)	Redditch Road, Lye Bridge, Alvechurch, B48 7RT
Alveley (STW)	Cooks Cross, Turley Green, Alveley, WV15 6LP
Ambergate (STW)	Ripley Road, Swamills – Ambergate, Belper, DE56 2EP
Arley (STW)	Station Road, Coventry, CV7 8FG
Armthorpe (STW)	Holmewood Lane, Armthorpe, DN3 3EH
Arnesby (STW)	Lutterworth Road, Arnesby, LE8 5UP
Ashbourne (STW)	Watery Lane, Off Mayfield Road, Ashbourne, DE6 1AS
Ashby Folville (STW)	Ashby Road, Ashby Folville, Melton Mowbray, LE14 2TG
Ashover (STW)	Butts Road, Ashover, Chesterfield, S45 0AX
Ashton Under Hill (STW)	Back Lane, Ashton Under Hill, Evesham, WR11 7RG
Ashwell (STW)	Teigh Road, Ashwell, Oakham, LE15 7LR
Aslockton (STW)	Moor Lane Off New Lane, Aslockton, NG13 9AH

Certificate No:4230

Reissued:09/08/2018

Valid Until:09/08/2021

Managing Director





Aston Magna (STW)
Aston on Clun (STW)
Aston Somerville (STW)
Astwood Bank (STW)
Atherstone (STW)
Avening (STW)
Bakewell – Pickory Corner (STW)
Balderton (STW)
Baldwins Gate (STW)
Balsall Common (STW)
Barlestone (STW)
Barnhurst (STW)
Barnstone – Main Road (STW)
Barston (STW)
Barton (STW)
Baschurch (STW)
Baslow (STW)
Bassetts Pole (STW)
Bearley (STW)
Beckford (STW)
Beeston Lilac Grove (STW)
Belbroughton Works (STW)
Belper (STW)
Berkswell (STW)
Biggin (STW)
Billesdon (STW)
Bilsthorpe (STW)
Bilstone (STW)

Aston Magna, Moreton in Marsh, GL56 9QL
Off Craven Arms Road, Aston on Clun, Craven Arms, SY7 8EZ
Church Road, Aston Somerville, Broadway, WR12 7JF
Dark Lane, Astwood Bank, Redditch, B96 6AS
Carlyon Road, Atherstone, CV9 1JB
Avening Road, Avening, GL8 8NH
Picory Corner, Bakewell, DE45 1LB
Lowfield Lane, Balderton, Newark, NG24 3EP
Baldwins Gate, Chorlton Moss, Newcastle, ST5 5DR
Barston Lane, Balsall Common, Coventry, CV7 7BU
Bosworth Road, Barlestone, Nuneaton, CV13 0JE
Oxley Moor Road, Aldersley, Wolverhampton, WV9 5HN
Off Main Road, Barnstone, Nottingham, NG13 9JH
Friday Lane, Barston, Solihull, B92 0HY
Barton Turn, Barton Under Needwood, Burton on Trent, DE13 8EA
Boreatton Park, Baschurch, Shrewsbury, SY4 2JZ
Bakewell Road, Baslow, DE45 1RE
Hill Lane, Canwell, Sutton Coldfield, B75 6LA
Birmingham Road, Bearley, Stratford Upon Avon, CV37 0ET
Back Lane, Beckford, Tewkesbury, GL20 7AF
Lilac Grove, Beeston, Nottingham, NG9 1PF
Drayton Road, Belbroughton, Kidderminster, DY9 0DN
Goods Road, Belper, DE56 1UU
Lavender Hall Lane, Berswell, Coventry, CV7 7BN
Off Lifts Lane Biggin, Heathcote, Derby, SK17 0DJ
Leicester Road, Billesdon, LE7 9FD
Eakring Road, Bilsthorpe, NG22 8SU
Gibbett Lane, Bilstone, CV13 6LU

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Valid Until:09/08/2021

Managing Director





Birdlip (STW)
Bishops Castle (STW)
Bishopswood (STW)
Blackminster (STW)
Blakedown (STW)
Blakeney (STW)
Blockley (STW)
Blymhill (STW)
Blyton (STW)
Bobbington (STW)
Bomere Heath (STW)
Bosbury RBC (STW)
Bottlesford (STW)
Boughton (STW)
Bradwell (STW)
Brailsford (STW)
Braithwell (STW)
Bramcote (STW)
Brancote (STW)
Branton (STW)
Brassington (STW)
Braunston (STW)
Breedon (STW)
Bridgnorth – Slads (STW)
Brinklow (STW)
Broadway (STW)
Brockhampton (STW)

Roman Road, Birdlip, Gloucester, GL4 8JL
Brampton Road, Shropshire, Bishops Castle, SY9 5BX
Ivetsey Bank Road, Bishopswood, Brewwood,- Stafford, ST19 9AE
Station Road, Blackminster, Evesham, WR11 8JJ
Churchill Lane, Wannerton – Blakedown, Kidderminster, DY10 3NJ
Mill End, Off High Street (A48) Blakeney, GL15 4ED
Off Station Road, Draycott, Moreton in the Marsh, GL56 9LQ
Brineton, Staffordshire, TF11 8NN
Blyton Road, Loughton, DN21 3LQ
Brantley Crescent, Stourbridge, DY7 5DB
Leaton, Shrewsbury, SY4 3AP
Bosbury, Hereford, HR8 1PY
Normanton Lane, Bottlesford, Nottingham, NG13 0FL
Harrow Lane, Newark, NG22 9LA
Stretfield Road, Hope Valley, Bradwell, S33 9JT
Brailsford – Ashbourne, Derby, DE6 3BT
Austwood Lane, Braithwell, S33 9JT
Bazzard Lane, Burton Hastings, Bramcote Wolvey, CV11 6QN
Tixall Road, Brancote, Stafford, ST18 0XX
Brockholes Lane, Branton, Doncaster, DN3 3QT
West End, Brassington, Matlock, DE4 4HL
London Road, Braunston, Daventry, NN11 7JQ
Doctors Lane, Breedon on the Hill, Leicestershire, DE73 8BB
Slads, Eardington, Bridgnorth, WV16 5LF
Ansty Road, Brinklow, CV23 0NQ
Pry Lane, Broadway, WR12 7LX
Brockhampton, Cheltenham, GL51 9RS

Certificate No:4230

Reissued:09/08/2018
Valid Until:09/08/2021

Managing Director





Bromsberrow (STW)
Bromsgrove (STW)
Broughton Astley (STW)
Bucknell (STW)
Bulkington (STW)
Burntwood (STW)
Burrough on the Hill (STW)
Burton on the Wolds (STW)
Butlers Marston (STW)
Butterton (STW)
Buxton (STW)
Calverton (STW)
Cannock (STW)
Cardington (STW)
Castle Donnington (STW)
Castlemorton (STW)
Chaddesley Corbett (STW)
Checkley (STW)
Cheddleton (STW)
Chelmorton (STW)
Cherington (STW)
Cheswardine (STW)
Chipping Campden (STW)
Chorley (STW)
Church Lench (STW)

Church Stretton (STW)
Church Warsop (STW)

Albright Lane, Bromesberrow, Ledbury, HR8 1RU
Aston Road, Worcestershire, Bromsgrove, B60 3EX
Off Leicester Road, Sutton in the Elms, Broughton Astley, LE9 6QF
off B4367, Bucknell, B4367 Bedstone, SY7 0BJ
Bedworth Road, Bulkington, Nuneaton, CV12 9LL
Peters Lane, Burntwood, Walsall, WS7 0JA
Newbold Road, Borrough on the Hill, Melton Mowbray, LE14 2JQ
Barrow Road, Burton on the Wolds, Loughborough, LE12 5TD
Bank View, Bulters Martson, CV35 0NN
Pothooks Lane, Butterton, ST13 7TB
1 Bakewell Road, Buxton, SK17 9RP
Bonner Lane, Calverton, Nottingham, NG14 6FZ
Longford Road, Cannock, WS11 0LD
Gilberries Lane, Cardington, Shrewsbury, SY6 7HR
Trent Lane, Castle Donnington, DE74 2PY
Adj Castlemorton Chruch, Castlemorton, Malvern, WR13 6BG
Fox Lane, Lower Chaddesley Corbet, Kidderminster, DY10 4RD
Deadmans Green, Checkley, ST10 4NQ
Cheddleton Flume, Cheddleton, Leek, St13 7EQ
Old Coalpit lane, Chelmorton, Derbyshire, SK17 9SG
Cherington, Shipston on Stour, CV36 5HS
Little Soudley, Cheswardine, Market Drayton, TF9 2NB
Paxford Road, Chipping Campden, GL55 6HY
Chorley, Nr Bridgnorth, WV16 6PR
Nr North Farm off Atch Lench Road, Church Lench, Evesham, WR11 4UG
Little Stretton, Church Stretton, Shrewsbury, SY6 6PR
Broomhill Lane, Warsop, Nottingham, NG20 0RE

Certificate No:4230

Reissued:09/08/2018
Valid Until:09/08/2021

Managing Director





Chrucham (STW)	Bulley Lane, Churcham, GL2 8BG
Churchover (STW)	Church Street, Churchover, Rugby, CV23 0EP
Cinderford – Crumpmeadow (STW)	Valley Road, Cinderford, GL14 2ER
Claverdon (STW)	Saddlesbow Lane, Claverson, Warwick, CV35 8PQ
Clay Cross (STW)	Mill Lane, Clay Cross, DE55 6FD
Claybrooke Magna (STW)	Bell Street, Claybrooke Magna, Lutterworth, LE17 5AL
Claymills (STW)	Meadow Lane, Stretton, Burton on Trent, DE13 0DA
Clifton Campville (STW)	Netherseal Lane, Clifton Campville, Nr Tamworth, B79 0BD
Clifton East Mids (STW)	Church Lane, Clifton, Nottingham, NG23 7AP
Clifton upon Teme (STW)	Hope Lane, Lower Sapey, Clifton, WR6 6LU
Clive (STW)	Station Road, Clive, Shrewsbury, SY4 3ES
Clowne (STW)	Hollin Hill Road, Clowne, Worksop, S43 4AX
Clun (STW)	The Green, Clun, Craven Arms, SY7 8NX
Coaley (STW)	Halmore Green, Coaley, Dursley, GL11 5DW
Coalport (STW)	Coalport Road, Sutton Hill, Telford, TF8 7JE
Codsall (STW)	Joey's Lane, Bilbrook, Wolverhampton, WV8 1JL
Coleshill (STW)	Marconi Way, Coleshill, B46 1DG
Collingham (STW)	Besthorpe Road, Collingham, Newark, NG23 7NP
Colwall (STW)	Mill Lane, Colwall, Malvern, WR13 6HE
Condover (STW)	Brook Close, Condover, Shresbury, SY5 7BN
Coreley – Clee Hill (STW)	Clee Hill, Ludlow, SY8 3AW
Corley (STW)	Smorrall Lane, Bedworth, Nuneaton, CV7 8AT
Cotgrave (STW)	Woodgate Lane, Cotgrave, Nottingham, NG12 3HX
Countesthorpe (STW)	Leicester Road, Countesthorpe, Leicester, LE8 5QW
Coven Heath (STW)	Ball Lane, Coven Heath, Wolverhampton, WV10 7HD
Coventry- Finham (STW)	St Martins Road, Finham, Coventry, CV3 6PR
Cradley (STW)	Tiffords Bridge, Cradley, Malvern, WR13 5NN
Crankley Point (STW)	Qibbells Lane, Crankley Point, Newark, NG24 2EB

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Craven Arms (STW)
Cressbrook (STW)
Creswell (STW)
Cropwell Bishop (STW)
Crowle Scunthorpe (STW)
Crowle Worcester (STW)
Dalbury Lees (STW)
Derby (STW)
Derrington (STW)
Dinnington (STW)
Ditton Priors (STW)
Donisthorpe (STW)
Dorrington (STW)
Doveholes (STW)
Drenwydd- Oswestry (STW)
Droitwich – Ladywood (STW)
Dudleston Heath (STW)
Dumbleton (STW)
Dunchurch (STW)
Eakring (STW)
Earl Shilton (STW)
Earlwood Springbrook (STW)
East Leake (STW)
East Markham (STW)
Eccleshall and Sturbridge (STW)
Edale (STW)
Edgmond (STW)
Edingale (STW)

Stokesay, Craven Arms, SY7 9AH
Bottomhill Road, Litton, SK17 8SX
Frithwood Lane, Creswell, Worksop, S80 4HT
Cropwell Bishop Road, Cropwell, Nottingham, NG12 3GW
Marsh Road, Crowle, Scunthorpe, DN17 4EU
Off Froxmere Road, Crowle, Worcester, WR7 4AL
Radbourne Road, Ashbourne, Debry, DE6 5BE
Megaloughton Lane, Spondon, Debry, DE21 7BR
Church Lane, Derrington, Stafford, ST18 9LY
Church Lane, Dinnington, Sheffield, S25 2RJ
Brown Clee Road, Ditton Priors, Bridgnorth, WV16 6ST
Seals Road, Swadlincote, Burton On Trent, DE12 7PJ
Crossbrook, Dorrington, Shrewsbury, SY5 7JT
Dale Road, Dove Holes, Buxton, SK17 8BG
Drenwydd, Park Hall, Oswestry, SY11 4ND
Potters Mill Lane, Droitwich, Ladywood, WR9 0AR
Elson Road, Elson, Ellesmere, SY12 9JW
Dumbleton, Evesham, WR11 6TJ
Southam Road, Dunchurch, Rugby, CV22 6NR
Church Lane, Eakring, Newark, NG22 0DB
Mill Lane, Earl Shilton, Leicester, LE9 7AX
Malthouse Lane, Solihull, B94 5DU
West Leake Road, East Leake, Nottinghamshire, LE12 6LJ
Quakerfield lane, East Markham, Nottinghamshire, NG22 0SB
Stone Road, Eccleshall, Stafford, ST21 6DL
Barber Booth, Edale, S22 7ZP
Shrewsbury Lane, Edgmond –Newport, Shrewsbury, TF10 8NA
School Lane, Edingale, Nr Tamworth, B79 9JJ

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Edwinstowe (STW)
Elkesley (STW)
Ellesmere-Wharf Meadow (STW)
Elston (STW)
Endon (STW)
Epworth (STW)
Ettington Works (STW)
Etwall (STW)
Evesham (STW)
Farndon (STW)
Farnsfield (STW)
Fenny Compton (STW)
Findern (STW)
Fleckney (STW)
Flintham (STW)
Flyford Flavell (STW)
Foolow (STW)
Frankton (STW)
Fritchley (STW)
Froghall (STW)
Gainsborough –Lea Road (STW)
Gamston (STW)
Gaulby (STW)
Gaydon (STW)
Goscote (STW)
Gospel End (STW)
Gotham (STW)
Granby Village Drain (STW)

Ollerton Road, Maun Valley- Edwinstowe, Mansfield, NG22 9DX
Dobdykes Lane, Elkesley- Retford, DN22 8AF
Laurels Close, Wharf Meadow, Ellesmere, SY12 0BY
Carrgate Lane, Elston, Newark, NG23 5NU
A53 Leek Road, Endon, Stoke on Trent, ST9 9AP
West End Road, Epworth, Doncaster, DN9 1LE
Hillman Way, Ettington, Stratford on Avon, CV37 7SG
Egginton Road, Etwall, Derby, DE65 6NF
Red Lane, Hampton Parks, Evesham, WR11 2RF
Hawton Lane, Newark, NG24 3SD
Mansfield Road, Edingly, Newark, NG22 8BG
Station Road, Fenny Compton, Leamington Spa, CV47 2WB
Common Piece Lane, Findern, Derby, DE6 6AE
Wistow Road, Kibworth Beauchamp, Leicester, LE8 0RG
Inholms Road, Flintham, NG23 5LF
Glebe Farm A422 Road, Flyford Flavel, Abberton Road, WR7 4BU
Off road from Foolow to Eyam, Foolow, Derby, S32 5QR
Birdingbury Road, Frankton, Rugby, CV23 9QP
Bowmer Lane, Fritchley, Belper, DE56 2FY
Brookside, Froghall, Stoke on Trent, ST10 2HE
Causeway Lane, Gainsborough, DN21 5JW
rectory Lane, Gamston, Retford, DN22 0QE
Illston Road, Gaulby, Leicestershire, LE7 9BE
Banbury Road, Gaydon, Warwick, CV35 0HH
Goscote Lodge Crescent, Bloxwich, Walsall, WS3 1SB
Red Lane, Himley, Sedgley, SY3 4AN
Moor Lane, Gotham, Nottingham, NG11 0LH
Plungar Road, Granby, NG13 9PX

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Managing Director





Great Glen (STW)
Great Hucklow (STW)
Grendon (STW)
Gringley-on-the-Hill (STW)
Gt Washbourne (STW)
Guarford (STW)
Hallow (STW)
Hanbury (Worcestershire)(STW)
Hartlington (STW)
Harvington (STW)
Harworth (STW)
Hathersage (STW)
Haxey – Graizelound (STW)
Hayden (STW)
Heage (STW)
Heanor Milnhay (STW)
High Santon (STW)
Higher Heath Press (STW)
Highley (STW)
Himley (STW)
Hinckley (STW)
Hinstock (STW)
Hixon (STW)
Hodstock (STW)
Hodthorpe (STW)
Hognaston (STW)

Oaks Road, Great Glen, Leicester, LE8 9EG
Great Hucklow, SK17 8RH
Spon Lane, Grendon, Atherston, CV9 2EX
Middle Bridge Road, Gringley on the hill, Doncaster, DN10 4SD
Dumberlton – Great Washbourne, Alderton, GL20 7AR
Penny Lane, Guarford, Malvern, WR13 6PF
Off A443, Hallow, Worcester, WR2 6PW
Salt Lane, Hanbury, Droitwich, B60 4DD
Stonwell Lane, Harlington, Buxton, SK17 0AJ
Anchor Lane, Harvington, Evesham, WR11 8PA
Tickhill Road, Bircotes, Doncaster, DN11 8PD
Off B6001, Hathersage, Sheffield, S32 1DP
Akeferry Road, Craiselound Haxey, Doncaster, DN9 2NF
Hayden Green, Boddington, Cheltenham, GL51 0SP
Brook Street, Heage, Belper, DE56 2AP
Milnhay Road, Milnhay, Langley Mill, NG16 4AY
Dawes Lane, High Santon, Nc Scunthorpe, DN15 0DG
OffA41, High Heath, Whitchurch, SY13 2HY
Netherton Lane, Highley, WV16 6NJ
School Road, Himley, Dudley, DY3 4LG
Brookfield Road, Hinckley, LE10 2LL
Pixley Lane, Hinstock. Markey Drayton, TF9 2UA
Church Lane, Hixon, Stafford, ST18 0UD
Off Doncaster Road, Langold, Worksop, S81 0TF
Broad Lane, Hodthorpe, Worksop, S80 4XJ
Stonepit Lane, Ashbourne, Ashbourne, SE6 1PE

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Managing Director





Honeybourne (STW)
Hopton Wafers (STW)
Hoton (STW)
Houghton on the Hill (STW)
Hulland Ward (STW)
Hungarton (STW)
Huntley (STW)
Hurley (STW)
Huthwaite (STW)
Ibstock (STW)
Ightfield (STW)
Ilkeston- Hallam Fields (STW)
Ilmington (STW)
Inkberrow (STW)
Itchen Bank (STW)
Kegworth (STW)
Kelstedge (STW)
Keyham (STW)
Keyworth (STW)
Kidderminster Oldington (STW)
Kilburn (STW)
Kilsby (STW)
Kimcote (STW)
Kineton (STW)
Kington (STW)

Weston Road, Honeybourne, Evesham, WR11 7QE
Hopton Wafers, Shropshire, DY14 0NB
Wymeswold Road, Hoton, Loughborough, LE12 5SN
Uppingham Road, Houghton on the Hill, Leicester, LE7 9HG
Moss Lane, Hulland Ward, Derby, DE6 3FH
Barley Leas, Hungarton, Leicester, LE7 9JH
Bulley Road, Huntley, GL2 8AS
Hurley Common, Hurley, Atherstone, CV9 2LS
Common Road, Huthwaite, Sutton in Ashfield, NG17 2NL
Hinckley Road, Ibstock, Leicester, LE67 6PA
Burleydam Road, Ightfield, Shropshire, SY13 4NU
Stapleford Road, Ilkeston, NG9 3QB
Armscote Road, Ilmington, Shipton on Stour, CV36 4RT
Appletree Lane, Inkberrow, Worcester, WR7 4HZ
Welsh Road, Southam, Leamington Spa, CV47 2BH
Long Lane, Kegworth, DE74 2FL
Amber Lane, Kelstedge, Ashover, S45 0DS
Snows Lane, Keyham, Main Street, LE7 9JQ
Bunney Lane, Key worth, Nottingham, NG12 5LP
Stourport Road, Worcestershire, Kidderminster, DY11 7QL
Tants Meadow – Derby Road, Lower Kilburn, DE56 0NH
Rugby Road, Kilsby, Rugby, CV23 8XR
Poultney Lane, Kimcote, Lutterworth, LE17 5RX
Brookhampton Lane, Kineton, Warwick, CV35 0DP
Kington, Flyford Flavel, QR7 4DD

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Managing Director





Kinnerley (STW)
Kinoulton (STW)
Kirk Ireton (STW)
Kirk Langley (STW)
Kirkby in Ashfield (STW)
Kirkby Mallory (STW)
Kirton in Lindsey (STW)
Knighton (STW)
Knowbury (STW)
Langar Limes Farm (STW)
Langham (STW)
Laughterton (STW)
Laverton (STW)
Ledbury (STW)
Leek (STW)
Leek Wootton (STW)
Lichfield (STW)
Lighthorne (STW)
Lighthorne Heath (STW)
Lilbourne (STW)
Little Aston (STW)
Little Hucklow (STW)
Little Witley (STW)
Loggerheads Sanatorium (STW)
Loggerheads Village (STW)

Long Marston (STW)
Longhope (STW)

Mayfields, Kinnerley, Oswestry, SY19 8DQ
Off hickling Road, Nottingham, NG12 3ED
Well bank, Kirk Ireton, Ashbourne, DE6 3JW
Flagshaw Lane – Kirk Langley, Kirk Langley, Ashbourne, DE6 4NW
Park Lane, Kirkby in Ashfield, Mansfield, NG17 7QH
Peckleton Lane, Kirkby Mallory, LE9 7QH
Moat House Road, Gainsborough, DN21 4DD
Ludlow Road, Knighton, LD7 1JP
Snitton Lane, Knowbury, Ludlow, SY8 3 JL
Langar Limes Farm, Langar, Nottingham, NG13 9HL
Ashwell Lane, Langham, Oakham, LE14 7HT
Kettle Thorpe Road, Laughterton, Lincolnshire, LN1 2BD
Laverton Village, Broadway, WR12 7NA
Little Marcle Lane, Ledbury, H28 2DP
Cheadle Road, Leek, ST13 7DR
Hill Wootton Road, Leek Wootton, Warwick, CV35 7PN
Watery Lane, Curborough, Litchfield, WS13 8ER
Moreton Morrell Road, Lighthorne Heath, Warwick, CV35 9DQ
Lighthorne Heath, Warwickshire, CV33 9TT
Station Road, Lilbourne, Rugby, CV23 0SX
Forge Lane, Fotherley, Lichfield, WS14 0HU
Forest Lane, Derby, SK17 8RT
Well Lane, Worcestershire, Little Witley, WR6 6LW
Sanatorium, Loggerheads, Market Drayton, TR9 2QY
Market Drayton Road, Loggerheads Village, Market Drayton, TR9 4DG
Wyre Lane, Long Marston, Stratford on Avon, CV37 8RQ
Velthouse Lane, Longhope, GL17 0AD

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Managing Director





Longnor (STW)
Longville (STW)
Loughborough (STW)
Lower Gornal (STW)
Lower Penn (STW)
Ludlow (STW)
Lutterworth (STW)
Lydbury North (STW)
Madresfield Waterloo Clos (STW)
Malvern (STW)
Mansfield – Bath Lane (STW)
Marchington (STW)

Marehay (STW)
Market Bosworth (STW)
Market Drayton (STW)
Market Overton
Martson Lane Bedworth (STW)
Martley- Ductons Copp (STW)
Marton (STW)
Matlock Lea (STW)
Mattersey Thorpe (STW)
Measham (STW)
Melbourne (STW)
Melton (STW)
Meriden (STW)
Middleton Village (STW)
Mile Oak (STW)

Longnor Top O Edge, Longnor, Buxton, SK17 0PN
Longville in the Dale, Shropshire, TF13 6DT
Festival Drive – Swingbridge Road, Loughborough, LE11 5TP
Himley Roda, Lower Gornal, Dudley, DY3 2SN
Market Lane, Lower Penn, Wolverhampton, WV4 4XS
Overton Road, Ludford, Ludlow, SY8 4BH
Moors Barns, Coresbach, Lutterworth, LE17 4HU
Lower Down, Lydbury North, SY7 8AX
Waterloo Close, Madresfield, WR13 5AG
Mill Lane, Baranrds Green, Malvern, WR14 3QS
Old Mill Lane, Forest Town, Mansfield, NG18 2DA
Litchfield Road off A515, Draycot in the Clay, Nr Ashborne, DE6 5GX
Derby Road, Ripley, DE5 8JX
Congerstone Lane, Market Bosworth, Carlton, CV13 0BU
Salisbury Hill View, Stoke on Tern, Market Drayton, TF9 1DW
Main Street, Market Overton, Oakham, LE15 7PD
Marston Lane, Bedworth, Nuneaton, CV12 9AD
Hopehouse Lane, Martley, WR6 6QE
High Street, Kettlesthorpe, DN21 5AL
Lea Bridge, Lea, DE4 5AA
Broomfield Lane, Mattersey Thorpe, Doncaster, DN10 5EX
Measham Road, Oakthorpe, Measham, DE12 7QX
Blackwell Lane, Melbourne, Derby, DE73 8EL
Grange Lane, Sysonby, Melton Mowbray, LE13 0JG
Hampton Lane, Meriden, Coventry, CV7 7JR
Church Lane, Middleton, Tamworth, B78 2AJ
Mile Oak Industrial Estate –Maesbury Road, Oswestry, SY10 8NR

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Managing Director





Milton (STW)
Milwich (STW)
Minsterley (STW)
Minworth (STW)
Monkmoor (STW)
Monks Kriby (STW)
Moreton Morrell (STW)
Much Wenlock (STW)
Napton (STW)
Naseby Wrw (STW)
Nether Broughton (STW)
Neher Langwith (STW)
Netheridge (STW)

Netherseal (STW)
Newbold Verdon (STW)
Newborough (STW)
Newcastle on Clun (STW)
Newent (STW)
Newport (STW)
Newthorpe (STW)
North Wheatley (STW)
Northend (STW)
Northorpe (STW)
Norton (STW)
Norton Green (STW)
Norton Juxta (STW)
Norton Lindsay (STW)

Meadow Lane, Milton, Derby, DE65 6EH
Mill Lane, Coton- Milwich, Stafford, ST18 0EU
Minsterley, Minsterley, Shrewsbury, SY5 0AQ
Kingsbury Road, Mindworth, B76 9DP
Monkmoor Road, Shrewsbury, SY2 5TL
Bell Lane, Pailton, Rugby, CV47 8NZ
Morton Morrel Lane. Morton Morrel, Warwick, CV35 9DG
Quarry Bank Road, Much Wenlock, TF13 6HS
Folly Lane, Napton, Rugby, CV47 8NZ
Carvells Lane, Naseby, Northampton, NN6 6DW
Queensway, Nether Broughton, Melton Mowbury, LE14 3QH
Cuckney Road, Mansfield, NG20 9JG
Netheridge Farm – Netheridge Close, Netheridge, Gloucester, GL2 5LF
Hall Farm Lane, Netherseal, Swadlincote, SE12 8DW
Brascote, Newbold Verdon, Leicester, LE9 9LF
Dolesfoot Lane off A515, Newborough, Burton on Trent, DE13 8RD
Mill Road, Newcastle, SY7 8QN
Cleeve Mill Lane, Newent, GL18 1ES
Broomfield Road, Newport, TF10 7TS
Halls Lane, Newthorpe, NG16 2DE
Church Street, North Wheatley, Retford, DN22 9BY
Northend, Burton Dassett, Leamington Spa, CV47 2WG
Monsoon Road, Northorpe, Gainsborough, DN21 4AE
Grange Lane, Norton Village, Mansfield, NG20 9JY
Norton Green Lane, Knowle, Solihull, B93 8PH
Cottage Lane, Norton Juxta Twycross, Atherstone, CV9 3QH
Canada Lane, Norton Lindsay, Warwick, CV35 8JH

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Nuneaton Hartshill (STW)

Oadby (STW)

Ombersley (STW)

Osbaston (STW)

Overseal (STW)

Owston (STW)

Packington (STW)

Parwich (STW)

Pattingham (STW)

Peakdale (STW)

Penkridge (STW)

Peopleton (STW)

Perlethorpe (STW)

Pershore (STW)

Pickwell (STW)

Pinxton (STW)

Pirehill (STW)

Pitts Mill (STW)

Polesworth (STW)

Pontesbury (STW)

Powick (STW)

Prees – Golfhouse Lane (STW)

Priest Bridge (STW)

Putley Green (STW)

Pye Bridge (STW)

Ragdale (STW)

Rainworth (STW)

Woodford Lane, Nuneaton, CV10 0SA

Wigston Road, Oadby, LE2 5JE

Off Hays Lane, Ombersley, Droitwich, WR9 0EJ

High Ercall Airfield, Osbaston, High Ercall, TF6 6RD

Lullington Road, Overseal, Swadlincote.DE12 6NG

Washdyke Road, Owston, LE15 8DX

Measham Road, Packington, Ashby De La Zouch, LE65 1WQ

Pitts Lane, Parwich, Derby, DE6 1QL

Chesterton Road, Pattingham, Wolverhampton, WV6 7BJ

Upper End Road, Peak Dale, Buxton, SK17 8AU

Drayton Lane, Lower Drayton, Penkridge, ST19 5RE

Peopleton, Pershore, WR10 2EG

Radleys Lane, Perlethorpe, Newark, NG22 9EH

Salters Lane, Tyddesley Wood, Besford, WR8 9AX

Off Main Street, Pickwell, Melton Mowbury, LE14 2QT

Pinxton Wharf, Pinxton, NG16 6PN

Brooms Road, Prehill-Walkton, Stone, ST15 0SH

Oridge Lane, Pitts Mill, Staunton, GL19 3DA

Grendon Road, Polesworth, Tamworth, B78 1NS

Station Road, Pontesbury, SY5 0QY

Upton Road, Powick, WR2 4QZ

Off A49, Prees Heath, Whitchurch, SY13 3JX

Bradley Green, Feckenham, Redditch, B96 6SN

Near Green Close, Putley Green, Ledbury, HR8 2QU

Off Main Road, Pye Bridge, Alfreton, DE55 4NZ

Off Main Street, Ragdale, Melton Mowbury, LE14 3PE

Rufford Colliery Lane, Rufford, Newark, NG21 0HR

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Rampton (STW)
Ranskill (STW)
Ravenstone (STW)
Ray Hall (STW)
Redditch – Sernal (STW)
Redmile (STW)
Retford (STW)
Ridge Lane – Mancetter (STW)
Ridgeway (STW)
Ripley (STW)
Rock – Rectory Lane (STW)
Roden (STW)
Roundhill (STW)
Rous Lench (STW)
Rowington (STW)
Rowthorne (STW)
Rugby Newbold (STW)
Rugeley (STW)
Rushbury (STW)
Rushmoor (STW)
Ruyton XI Towns (STW)

Scarcliffe (STW)
Scotter (STW)
Scunthorpe –Yaddlethorpe (STW)
Shardlow (STW)
Shawbury (STW)

Golden Holme Lane, Rampton, Retford, DN22 0LT
Common Lane, Ranskill, Nottinghamshire, DN22 8LW
Heather Lane, Ravenstone, Leicester, LE67 2AG
Ray Hall Lane, West Bromwich, B43 6JE
Sernal Lane, Studley, B80 7EU
Church Lane, Redmile – Bottesford, Nottingham, NG13 0GE
Hallcroft Road, Retford, DN22 7HJ
Ridge Lane, Nuneaton, CV10 0RD
Mearse Farm Lane, Ridgeway, Inkerrow – Worcester, WR7 4HS
Hartsay Hill, Ripley, DE5 3RN
Rectory Lane, Worcestershire, Rock, DY14 9RR
Marlebrook Way, Roden – Telford, Salop, TF6 6BN
Lloyd Way, Kinver, Kinver, DY7 6PX
Radford Road, Rous Lench, Evesham, WR11 4UL
Dicks Lane, Rowington, Warwick, CV35 7DN
Rowthorne Lane, Rowthorne Village, S44 5QQ
Off Newbold Road, Rugby, CV21 1HF
Wolseley Road, Rugeley, Staffordshire, WS15 2QX
Rushbury, Shropshire, SY6 7EB
Rushmoor Lane, Allscott, Telford, TF6 5EX
Off B4397, Ruyton XI Towns – Ruyton Baschurch, Shrewsbury, SY4 1JW
Station Road, Scarcliffe, Chesterfield, S44 6TG
Scotton Road, Gainsborough, DN21 3SB
North Moor Lane, Yaddlethorpe, Scunthorpe, DN17 2BU
Wilne Lane, Great Wilne, Shardlow, DE72 2HA
Dawsons Rough, Shawbury, Shrewsbury, SY4 4PF

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Managing Director





Sheldon (STW)
Shenstone (STW)
Shepshed (STW)
Shifnal (STW)
Shipston Fell Mill (STW)
Shirebrook (STW)
Shustoke (STW)
Sibson (STW)
Skegby (STW)
Slade Hooton (STW)
Smisby (STW)
Snarestone (STW)
Snarrows (STW)
Snitterfield (STW)
Somerby (STW)
South Kilworth (STW)
South Normanton (STW)
Southwell (STW)
Stanley Downton (STW)
Stanton Derbyshire (STW)
Stanton Gloucestershire (STW)
Stapleford – Bessel Lane (STW)
Staverton (STW)
Stoke Bardolph (STW)
Stoke Heath (STW)

Stoke Oxford (STW)

Johnson Lane, Sheldon, DE45 1QS
Park Lane, Shenstone, WS14 0JT
Hathern Road, Shepshed, Loughborough, LE12 9GX
Near the Hem, Shifnal, TF11 9LA
Fell Mill, Honington, Shipston on Stour, CV36 5AD
Off Carter Lane, Shirebrook, Mansfield, NG20 8SX
Coleshill Road, Shustoke – Coleshill, Birmingham, B46 2AQ
Shenton lane, Sibson, Nuneaton, CV13 6DD
Dawgates Lane, Skegby, Sutton in Ashfield, NG17 3DA
Hooton Lane, Laughton, S25 1YR
Derby Road, Smisby, Ashby De La Zouch, LE65 2UH
Appleby Lane, Snarestone, Burton On Trent, DE12 7BZ
Snarrows Road, Coalville, Loughborough, LE67 8UR
Pidgeon Green, Snitterfield, Stratford Upon Avon, CV37 0LP
Burrough Road, Burrough on the Hill, Melton Mowbray, LE14 2PP
Welford Road, South Kilworth, Lutterworth, LE17 6EA
Sporton Lane, South Normanton, Alfreton, DE55 5HP
Fiskerton Road, Southwell, NG25 0TU
Stanley Downton, Stroud, GL10 3QX
Off Woodland Road, Stanton, Burton on Trent, DE15 9TN
Stanway Road, Stanton, Broadway, WR12 7NQ
Bessell Lane, Stapleford, Nottingham, NG9 7BW
Daventry Road, Staverton, Daventry, NN11 6JY
Stoke Lane, Stoke Bardolph, Burton Joyce, NG14 5HL
Off Rosehill Road, Stoke Heath – Stoke on Tern, Market Drayton, TF9 2JX
Mill Lane, Stoke Orchard, GL52 4SG

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Managing Director





Stoke Prior (STW)
Stoney Stanton (STW)
Stoulton – Hawbridge (STW)
Stratford – Milcote (STW)
Strongford (STW)
Sutton Bonnington (STW)
Sutton in Ashfield (STW)
Sutton on Trent – Cromwell (STW)
Swanwick (STW)
Swinford (STW)
Taddington (STW)
Tamworth (STW)
Tanworth In Arden (STW)
Tenbury (STW)
Tewkesbury (STW)
Thorpe Salvin (STW)
Tickhill (STW)
Ticknall (STW)
Tideswell (STW)
Torksey (STW)
Toton (STW)
Trescott (STW)
Turnditch (STW)
Twycross (STW)
Twynning (STW)
Ullenhall (STW)
Upton Snodsbury (STW)

Dodderhill, Stoke Prior, Driotwich, B60 4EF
Broughton Lane, Leicester, LE9 6JA
East of Hawbridge Village, Stoulton, Worcester, WR7 4RJ
Milcote, Clifford Chambers, Stratford on Avon, CV37 8JN
Barlaston Old Road, Strongford, Barlaston, ST12 9EX
Station Road, Sutton Bonnington, Loughborough, LE12 5NU
Unwin Road, Sutton in Ashfield, NG17 4JP
Great North Road, Cromwell, NG23 6JE
Off Derby Road, Swanwick, Alfreton, DE55 1AD
Stanford Road, Lutterworth, LE17 6BJ
Priestcliffe Road, Taddington, Buxton, SK17 9UG
Coton Lane, Tamworth. B79 8NN
Off Well Lane, Tanworth in Arden, Solihull, B94 5AH
Rhyse Lane, Tenbury Wells, WR15 8NH
Lower Lode Lane, Lower Lode, Tewkesbury, GL20 7DP
Back Lane, Thorpe Salvin, Worksop, S80 3JX
Off Bawtry Lane, Tickhill, Doncaster, DN11 9XB
Off Main Street, Ticknall, Derby, DE73 7LA
Buxton Road, Tideswell, Tideswell- Buxton, SK17 8PG
Sand Lane, Torksey, Lincolnshire, LN1 2ED
Off Barton Lane, Toton, Beeston – Nottes, NG9 6DY
Bridgnorth Road, Perton, Wolverhampton, WV6 7EU
Ashbourne Road, Turnditch – Belper, Derby, DE56 2LX
Bilstone Road, Twycross, Atherstone, CV9 3PP
Downfield Lane, Twynning Green, Tewkesbury, GL20 6LD
Ullenhall Road, Ullenhall, Solihull, B95 5NN
Pershore Road, Upton Snodsbury, WR7 4NR

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Upton on Severn Wks (STW)
Uttoxeter (STW)
Walkeringham (STW)
Walsall Wood (STW)
Waltham (STW)

Wanlip (STW)
Warmsworth (STW)
Warslow (STW)
Warwick Longbridge (STW)
Waterhouses (STW)
Welland (STW)
Wellesbourne (STW)
Wem – Aston Road (STW)
West Burton (STW)

West Felton (STW)
West Malvern (STW)
Weston Underwood (STW)
Westwood Brook (STW)
Wetton (STW)
Wheaton Aston (STW)
Whetstone (STW)
Whichford (STW)
Whissendale (STW)
Whittington near Motorway (STW)
Whitwell (STW)

Cut Throat Lane, Upton on Severn, WR8 0JJ
Derby Road, Off A50, Uttoxeter, ST14 8EL
Stockwith Road, Walkeringham, DN10 4JG
Green Lane, Walsall Wood, Walsall, WS9 9BE
Off Goadby Road, Waltham on the Wolds, Melton Mowbury, LE14 4AG
Fillingate Lane, Wanlip, LE7 4PF
Common Lane, Warmsworth, Doncaster, DN4 9JY
School Lane, Buxton, SK17 0JJ
Stratford Road, Warwick, CV34 6RA
Waterhouses, Stoke on Trent, ST10 3JR
Near Malt House Farm, Welland, Malvern, WR8 0ST
Off Stratford Road, Wellesbourne, Warwick, CV35 9RY
Orchard Way off Aston Road, Wem, SY4 5DY
River Road behind power station, West Burton, Nottinghamshire, DN22 9HT
Off Fox Lane, West Felton, Oswestry, SY11 4JU
Adj Croft Farm, West Malvern, WR14 4DX
Green Lane, Weston Underwood, Ashbourne, DE6 4PB
Off High Street, Stonebroom, Alfreton, DE55 6LL
Ashbourne Road, Wetton, DE6 2AF
Meadowcroft Gardens, Wheaton Aston, Stafford, ST19 9NA
Enderby Road, Leicester, LE8 3JL
Barratts Hill, Whichford, Shipston on Stour, CV36 5PQ
Off Stapleford Road, Whissendine, Oaskham, LE15 7HF
Church Lane, Whittington, Worcester, WR5 2RF
Millash Lane, Whitwell, Derbyshire, S80 4XL

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Wigmore (STW)	Bury Farm, Wigmore, Leominster, HR6 9US
Wigston (STW)	Countesthorpe Road, South Wigston, Blaby, LE8 5QW
Wilson (STW)	Forty Foot Lane, Breedon on the Hill, Derby, DE73 8BL
Winchcombe (STW)	Broadway Road, Winchcombe, Cheltenham, GL54 5NS
Wirksworth (STW)	Derby Road, Wirksworth, Matlock, DE4 4AR
Wolston (STW)	WOlston Lane, Wolston, Coventry, CV8 3LG
Wood Eaton (STW)	Gnosall Road, Gnosall, Stafford, ST20 0BB
Woodsetts (STW)	Worksop Road, Woodsetts, Rotherham, S81 8AW
Woolstone (STW)	Evesham Road, Oxenton, Cheltenham, GL52 8SD
Woore (STW)	Bearstone Road, Pipe Grate, Market Drayton, CW3 9SF
Wootton Wawen (STW)	Pennyford Lane, Wootton Wawen, Solihull, S95 6HE
Worcester – Bromwich Road (STW)	Bromwich Road, Worcester, WR2 4BN
Worfield (STW)	Main Street, Worfield, Bridgnorth, WV15 5LG
Worksop Manton (STW)	Rayton Lane, Manton, Worksop, S81 0UB
Worthen (STW)	Rectory Gardens, Worthen, Shrewsbury, SY5 9HW
Worthington (STW)	Breedon Lane, Ashby De La Zouch, Worthington, LE65 1RA
Wroot (STW)	Sand Lane, Wroot, DN9 2DA
Wychbold (STW)	Walk Mill Drive, Wychbold, Drotwich, WR9 0DH
Wyomondham (STW)	Nurses Lane, Wyomondham, Nurses Lane, LE14 2AS
Yeaveley (STW)	Rosdley Lane, Yeaveley, Ashbourne, DE6 2DT
Yelvertoft (STW)	School Lane, Yelvertoft, Northampton, NN6 6LG
Yoxall (STW)	Bond End off A515 Lichfield Road, Yoxall, Burton on Trent, DE13 8NL
Shelton Water Supply Depot	Welshpool Road, Shelton, Shrewsbury, SY3 8BJ
Leicester Water Centre	Gorse Hill, Anstey Lane, Leicester, LE7 7GU
Finham Depot	Finham, St Martins Road, Coventry, CV3 6SD
Raynesway Depot	Derby, Derbyshire, DE21 7BE

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Tettenhall Depot
Burslem Depot
Edgbaston Depot
Minworth Landfill

Regis Road, Tettenhall, Wolverhampton, WV6 8RU
Federation Road, Burslem, Stoke on Trent, ST6 4HU
Waterworks Road, Edgbaston, Birmingham, B16 9DD
Kingsbury Rd, Minworth, Sutton Coldfield, West Midlands, B76 9DP



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Valid Until:09/08/2021

A handwritten signature in black ink, appearing to read 'M. Cooney'.

Managing Director



Certificate of Approval

This is to certify that the Management System of:

Severn Trent Water Limited

2 St John's Street, Coventry, CV1 2LZ, United Kingdom

has been approved by Lloyd's Register to the following standards:

Competence Management System - Energy & Utility Skills (Private Standard) Version 4

Approval number(s): CMS – 00029800

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.



David Derrick

Area Operations Manager UK & Ireland

Issued by: Lloyd's Register Quality Assurance Limited



001

Certificate Schedule

Location	Activities
2 St John's Street, Coventry, CV1 2LZ, United Kingdom	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Claymills STW Meadow Lane, Burton-on-Trent, DE13 0DB, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Finham STW St Martins Road, Coventry, CV3 6SD, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Alfreton STW Alfreton Road, Derby, DE55 7RQ, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Derby STW Megaloughton Lane, Spondon, Derby, DE21 7BR, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Netheridge STW Hempsted Lane, Gloucester, GL2 6LE, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>



001

Certificate Schedule

Location	Activities
<p>Stoke Bardolph STW Stoke Lane, Nottingham, NG14 5HL, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Scunthorpe STW Scotter Road, Scunthorpe, DN17 2BU, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Monkmoor STW Monkmoor Road, Monkmoor, Shrewsbury, SY2 5TL, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Strongford STW Barlaston Old Road, Stoke-on-Trent, ST12 9EX, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Minworth STW Kingsbury Road, Sutton Coldfield, B76 9DP, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Rushmoor STW Ruhmoor Lane, Telford, TF6 5EX, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>



001

Certificate Schedule

Location	Activities
<p>Wanlip STW Fillingate, Wanlip, LE7 8PF, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Old Hattons Farm Pendeford Hall Lane, Coven, Wolverhampton, WV9 5BD, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>c/o Old Hattons Farm, Pendeford Hall Lane, Coven, Wolverhampton, WV9 5BD, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>
<p>Worcester STW Bromwich Road, Lower Wick, Worcester, WR2 4BN, United Kingdom</p>	<p>Competence Management Scheme The receipt, storage and/or treatment of waste at sludge treatment centres regulated under a waste or installation Environmental Permit, plus the Landspreading of Biosolids under a mobile plant permit.</p>



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Appendix C. Air Dispersion Modelling Report

Appendix D. BAT Assessment

Please see appended BAT checklist

Appendix E. H5 Site condition report

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	Severn Trent Water Limited
Activity address	Worksop (Manton) Sewage Treatment Works Rayton Lane Worksop Nottinghamshire S81 0UB
National grid reference	SK 60890 79121
Document reference and dates for Site Condition Report at permit application and surrender	Application for bespoke Permit, January 2021
Document references for site plans (including location and boundaries)	Please see site plan in Appendix A and information within Air Quality Assessment.

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: <ul style="list-style-type: none"> • geology • hydrogeology • surface waters 	According to the Environment Agency's online flood maps, the main area of the site is not subject to flooding but access via the Southern site road passes a Flood Zone 3 which has a higher risk of flooding. The site is within a Source Protection Zone 3. The geology of the site is sandstone and pebbly sedimentary bedrock. Superficial deposits are not recorded. Surface water bodies can be found to the South-West, South and South-East consisting of the River Ryton and Chesterfield Canal
Pollution history including: <ul style="list-style-type: none"> • pollution incidents that may have affected land 	The site is to the East of the town of Worksop in a largely rural, sparsely populated area. A review of historic maps shows that until the site is constructed between 1968-1974, it was

<ul style="list-style-type: none"> historical land-uses and associated contaminants any visual/olfactory evidence of existing contamination evidence of damage to pollution prevention measures 	<p>open farmland, with the canal and rail line being present from at least 1886.</p> <p>To the south of the railway, canal and river there used to be a coal colliery, which was present, including its associated tips and spoil heaps until the early 1990s.</p> <p>As a working sewage works since the 1970s, the site is likely to have utilised chemicals and oils associated with the processes on site as well as potentially suffered from spillages of sewage related materials. There may also be asbestos present on the site historically.</p>
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	None undertaken
Baseline soil and groundwater reference data	None available
Supporting information	<ul style="list-style-type: none"> Source information identifying environmental setting and pollution incidents Historical Ordnance Survey plans Site reconnaissance Historical investigation / assessment / remediation / verification reports Baseline soil and groundwater reference data

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.
Non-permitted activities undertaken	Discharging of waste Storage of waste Storage of biogas Physical blending of wastes Storage of raw materials
Document references for: <ul style="list-style-type: none"> plan showing activity layout; and environmental risk assessment. 	Please see Technical Summary in Chapter 2 of 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Description of soil gas and/or water monitoring undertaken • Monitoring results (including graphs)
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8.0 Decommissioning and removal of pollution risk	
<p>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.</p>	
Checklist of supporting information	<ul style="list-style-type: none"> • Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)

9.0 Reference data and remediation (where relevant)	
<p>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.</p> <p>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.</p>	
Checklist of supporting information	<ul style="list-style-type: none"> • 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	
<p>Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that:</p> <ul style="list-style-type: none"> • the permitted activities have stopped • decommissioning is complete, and the pollution risk has been removed • the land is in a satisfactory condition. 	

Appendix F. Odour Management Plan

Worksop Sludge Treatment Centre

Odour Management Plan

Revision	Purpose/Description	Originated	Checked	Reviewed	Authorised	Date
1	First Issue	Liz Cherry	J. Chapman	C. Cropper	J. Chapman	26/03/21

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1) Introduction and scope

Odour from the majority of sewage treatment works is regulated by the local authority under statutory nuisance provisions of the Environmental Protection Act 1990.

However, sites that have the capacity to accept over 100 tonnes of imported waste per day for the purposes of anaerobic digestion have been issued with Environmental Permits under the Environmental Permitting (England and Wales) Regulations 2013.

The EA's Guidance 'How to comply with your environmental permit' requires for activities which are likely to give rise to odour problems, such as anaerobic digestion, an odour management plan (OMP) should be submitted for approval as part of the permitting process.

Therefore, this document will be submitted as part of the environmental permit compliance for the Sludge Process at Worksop Sewage Treatment Works which will be operated by Severn Trent Water.

This OMP has been prepared following guidance from the Environment Agency:

- H4 – Odour Management.
- Odour Management Review Checklist.
- Odour Management Plans for Waste Handling Facilities.

The OMP will form part of the ISO 14001 Environmental Management System (EMS). The Bioresources manager will be responsible for implementation of OMP and its regular review.

2) Site Overview

Worksop Sewage Treatment Works is located on the banks of the River Ryton to the east of the town centre.

A plan of the permitted site boundary can be seen in figure 4 (section 8) of this Odour Management Plan.

The approximate site centre is at National Grid Reference (NGR) SK 6082 7902.

Worksop STW treats a population equivalent of approximately 56,000. The STW also treats raw sludge imports from satellite sites in north Nottinghamshire.

The current discharge permit levels (on a 95%ile basis) are 15mg/l BOD, 30mg/l SS, 3mg/l ammonia and 2mg/l phosphorus. The phosphorus permit limit is due to be reduced to 0.6mg/l in AMP 7. This will involve modifications to the sewage treatment works, however, the exact scope of this work has not yet been determined. The final effluent is discharged to the River Ryton.

Figure 1: Site location plan



3) Site surroundings

Worksop STW is located in a rural area to the east of the town.

The land to the north and east of the sewage treatment works is predominantly agricultural. There is a farm approximately 500m metres east of the site 1km to the north west.

Immediately south of the works there is a footpath along the banks of the River Ryton. Beyond that there is a distribution centre and industrial estate.

There are residential areas to the south and east of the site. The closest residential properties are approximately 1km away in Kilton. St Augustines Primary School is located 1,500m north west and Manton Sports complex (open air pitches) 1km west of the site.

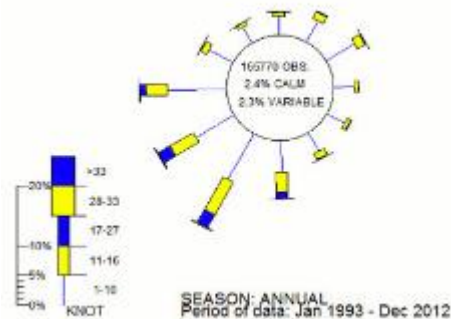
Sensitive receptors:

- Mainly agricultural areas surrounding the sewage treatment works
- With the railway to the south and River Ryton to the east, both over 100m away.
- It is over 400m to any industrial buildings, and over 500m to any residential.

The nearest residential receptors are located in Farm Cottage to the east, and Manton Villas to the south-west.

Historical prevailing wind data below from the Met Office shows the predominant direction is south easterly. Any odours from the site would tend be dispersed over open countryside.

Figure 3: Wind rose for East Midlands Airport



4) Process Overview

A process flow diagram is found in Appendix 1.

Under the Urban Wastewater Treatment Regulations, sewage that has been screened and dewatered is settled in 3 No. radial primary settlement tanks. Settled sewage is then sent to 6 No. rectangular biofilters and 4 No. radial humus tanks. Ferric sulphate is dosed prior to the humus tanks for chemical phosphorus removal. Humus effluent is passed through a NSAF/DBF tertiary treatment plant, consisting of 4 NSAF cells and 4 DBF cells. After tertiary treatment, the final effluent is discharged to the River Ryton.

Under the installations environmental permit, all imported raw sludge is screened. Thick sludge is transferred directly to the pre-digestion holding tank. Thin sludge is combined with indigenous sludge for thickening.

Indigenous co-settled humus and primary sludge is transferred to the raw sludge thickening buffer tank where it is combined with thin imported sludge prior to being thickened on 2 No. raw sludge thickening belts. Polymer is added to aid the thickening process. Liquors are treated in an AMTREAT liquor treatment plant prior to being returned to the head of the works.

Thickened sludge is transferred to the pre-digestion blending tank where it is combined with the thick imported sludge. All of the raw sludge route is enclosed and vented to an odour abatement system.

Blended raw sludge is fed to 1 No. acid phase digester and from there to one of 2 No. Gas Phase Digesters. Sludge is held in the digesters for the required time stated on the HACCP plan. Biogas is collected from the digesters, stored in 1 No. gas bag and used in 1 No. CHP engine.

Digested sludge is transferred to 2 No. dewatering buffer tanks before being dewatering in 2 No. centrifuges. Polymer is added to facilitate the dewatering process. Digested cake is passed via a conveyor to the day pad, then onto the cake storage pad and finally onto agricultural land.

Centrate is combined with thickening liquors and treated in an AMTREAT liquor treatment plant before being returned to the head of the works.

5) Hours of operation

Waste is processed through the plant 24 hours a day through a computer controlled process. There are no restrictions on the delivery of *imported sludge* to the site, it is however anticipated that waste would be delivered between the following hours.

07:00 to 18:00 Monday to Friday;
07:00 to 16:30 Saturdays; and by exception;
08:00 to 16:30 Sundays and Bank Holidays as required.

6) Tonnages

Worksop STW served a population equivalent of 55,604 in 2019/20. The digestion plant has capacity to treat 6,300 tds/annum.

7) Waste material accepted

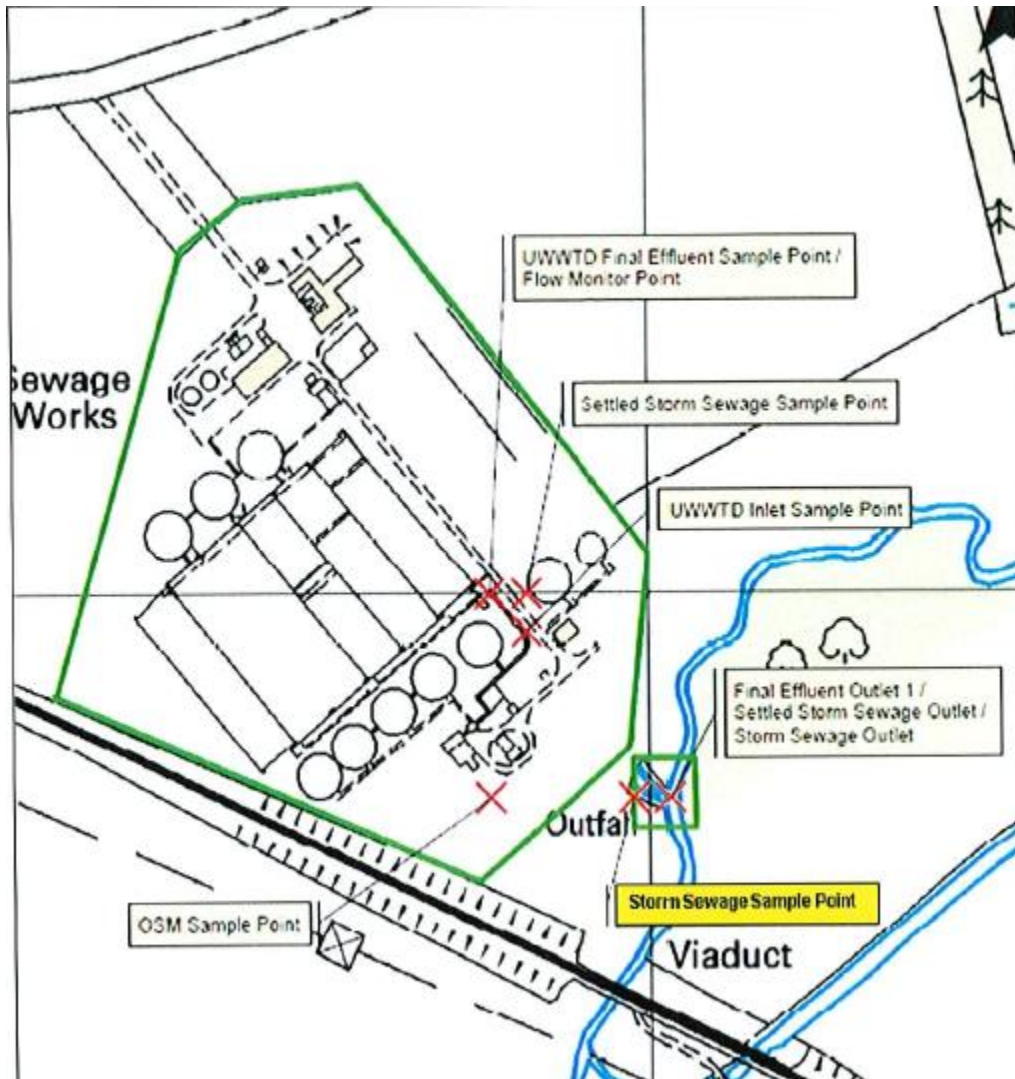
Worksop currently does not accept any tankered trade wastes into the sewage treatment works or the sludge treatment route. Raw sewage sludge is accepted under a T21 waste exemption.

For future reference when the plant is permitted under IED, the full list of EWC wastes we are permitted to accept at the site will be found in Schedule 2 of the new permit, and any imported wastes will be accepted under the approved waste acceptance procedures.

8) Permitted Area

Worksop STW does not currently have a waste permit. Figure 4 shows a site plan and a possible permitted area.

Figure 4: Site Plan (from final effluent Permit)



9) Available on site capacity

The following capacity is available across the site and is indicative of the total amount of waste that can be retained onsite on any given day.

Table 1: Worksop site capacity details

Element	Capacity	Total Capacity
Storm tanks	3,875 m ³	3,875 m ³
Primary tanks	3 x 1,083 m ³	3,248 m ³
Biofilters (media volume)	6 x 4,714 m ³	28,286 m ³
Humus tanks	4 x 736	2,945 m ³
Raw sludge holding/ buffer tanks	1 x 82 m ³ , 1 x 500 m ³ , 1 x 800 m ³	1,382 m ³
Digesters	1 x 900 m ³ , 2 x 2,500 m ³	5,900 m ³
Gas Bag	1 x 500 m ³	500 m ³
Dewatering buffer tanks	2 x 750 m ³	1,500 m ³
LTP blending tank	1 x 740 m ³	740 m ³
Liquor treatment plant	1 x 277 m ³ , 1 x 1,222 m ³ , 1 x 205 m ³	1,428 m ³
Cake pads	5,506 m ³	5,506 m ³
	Total	55,309 m³

10) Delivery Vehicles

Currently only waste listed on the T21 exemption are accepted at site. But for future reference, standard procedures for other wastes are listed below.

Liquid wastes will be transferred to and from the site in sealed tankers. Solid waste will be removed from site in sheeted Heavy Goods Vehicles (HGV's).

It is the responsibility of the haulier to ensure that the contents of their load are sheeted when removing waste from site as per our agreement with our approved framework contractors.

Vehicles arriving at site that are in poor condition (poor sheeting, leaking seals or dirty) such that they may cause odour issues will be refused re-entry until repairs are made.

Liquid wastes will only be accepted or exported in sealed tankers. All trade waste loads will be tested on arrival at site as per the trade waste SOP TTWSS005.1. Any loads with odour potential will be assessed by the trade waste technicians during the lab testing process. Tankers can be unloaded using gravity only (no pressure discharge) to reduce potential odour egress. If loads are deemed too odorous for discharge, the trade waste technicians will reject the tanker and send the haulier offsite as per the SOP.

Exiting cake vehicles are cleaned using the wheel wash before leaving site. It remains the responsibility of the haulier to ensure their vehicle is maintained. All foul water then runs into the site drainage and is directed back to the head of the works for treatment.

11) Odour Abatement System

The raw sludge route is contained and vented to an odour control system that comprises 2 No. 8000/10 Biofilters followed by 1 No. P2000 Peacemaker. This odour control system was manufactured by Air-Water Treatments Ltd (AWT). The units are fully enclosed with a single exhaust point.

The biofilters contain a lava rock media that supports biomass for odour removal.

Peacemakers are a form of dry chemical scrubbers. These are package units consisting of two stages. The first stage consists of pellets impregnated with stabilised chlorine dioxide which oxidise hydrogen sulphide, mercaptans and other odorous compounds. The second polishing stage serves to remove ammonia and other compounds not oxidised by chlorine dioxide.

The Severn Trent design standard for odour abatement equipment (ME30) requires 95% total odour reduction and 99% hydrogen sulphide reduction.

The following documents are used for the design and operation of the OCU's, which are available upon request:

- ME30 Odour Control Equipment and Building Ventilation (version 4.01) - Design manual ME30 for Odour control is adhered to for all Tier One supply chain partners.
- STW design manual – Sewage Treatment Odour Control (version 1.1)

Air-Water Treatments undertake annual health checks on the Biofilters (Bord Na Mona and AWT manufactured) and Peacemakers and report findings back to STW. A copy of the most recent report can be supplied on request.

12) Inventory of Odorous Materials

Waste Sources and Odour Mitigation

The following list provides an inventory of wastes which may give rise to increased odour on site and their mitigation measures following assessment using **FIDOL** (Frequency, Intensity, Duration, Offensiveness, Location and Annoyance Factor).

Table 3: Inventory of Odorous Materials

Stage of treatment	Odour source	Nature of source	Quantities	Odour mitigation
Sewage treatment	Inlet works	Open channels and skips	Permitted dry weather flow for the site is 12,000 m ³ /d	Odour is minimised through a contract with Biffa for regular removal of skips
Sewage treatment	Storm tanks	Open tanks	Storm tanks (3,875 m ³ total capacity)	Storm tanks are emptied as soon as possible after use
Sewage treatment	Primary tanks	Open tanks	3 x primary tanks (3,248 m ³ total capacity)	Odour is minimised through process control
Sewage treatment	Biofilters & humus tanks	Open vessels	6 x biofilters 4 x humus tanks (31,231m ³ total capacity)	Odour is minimised through process control
Sludge handling and treatment	Raw sludge treatment	Enclosed system	Inlet screens, indigenous sludge holding tank, raw sludge thickening buffer tank & pre-digestion blend tanks (1,382 m ³ total capacity)	Import facility is enclosed and connected to a Biofilter/Peacemaker odour control system
Sludge handling and treatment	Digesters	Enclosed tanks with pressure relief valves (PRVs)	1 x acid phase digester 2 x mesophilic anaerobic digesters (5,900 m ³ total capacity)	PRVs are a fail-safe mechanism to prevent an unsafe increase in pressure in the digesters. They are activated once all other fail safe routes have been used.

Sludge handling and treatment	Dewatering	Enclosed centrifuge & open tank	Dewatering buffer tank 2 x centrifuges	
Sludge handling and treatment	Liquor treatment	Open tanks	1 x anoxic tank, 1 x AMTREAT reactor & 1 x final tank (1,428 m ³ total capacity)	Odour is minimised through process control
Sludge handling and treatment	Cake pads	Cake storage on open pad	1 x day pad 5 x cake storage bays (5,506 m ³ total capacity if sludge is 1.5 m high)	Digested cake forms a firm crust after 1 -2 days, which is essential to ensuring that odours are minimised. Once compliance tests are passed it can be moved offsite to farmers fields for storage. The site HACCP plan can be found here: https://apps.stwater.intra/waterpedia/Pages/306592.aspx
Biogas utilisation	CHP engines	Engine emission stacks	1 x Jenbacher combined heat & power unit (836kW)	Engines are specifically sized for the sites operation to minimise the amount of excess gas produced. If there are problems with the CHP engines, sludge imports will cease until the CHPs are back on line. This minimises gas production on site.
Biogas utilisation	Flare stack			At times when the CHP engines are down, the imports have ceased, and the storage within the digester roofs and gas holder is maximised, the excess gas will be flared.

13) Training

The Environmental Policy is communicated to all persons doing work under the organisations control. Policies, Standards and procedures around permit compliance and operational controls are available and accessed through an online system.

Environmental Management Systems (EMS) basic level awareness e-learning is mandatory to all operational staff. EMS e-Learning Nuisance module includes odour pollution and the Site Permit module includes understanding permits. EMS e-learning is recorded as a skill on SAP.

Competency Management Systems (CMS) Technically Competent Persons are trained on requirements of Environmental Permits. CMS is recorded as a skill on SAP.

Severn Trent also schedules regular CABWI modules throughout the year. CABWI (Diploma in Water and Wastewater Engineering) can be undertaken by Operators and Managers wishing to upskill across aspects of waste water and includes reference to odour issues and mitigation within the training.

Training is monitored and managed by line managers in the first instance.

Site visitors are inducted and made aware of relevant issues or reporting requirements.

14) General Considerations

Prevention of nuisance is preferable to mitigation of its effects so we use a phased approach to dealing with the risk of odours.

Sewage and sludge treatment facilities should be designed with nuisance in mind. Where possible the most odorous activities should be located away from sensitive receptors. Long open channels should be avoided and potentially odorous tanks designed so that they can be covered if required.

On existing sites, the following approach is used to minimise the risk of odour nuisance:

1. Where possible operational methods should be used first e.g. improving housekeeping or increased maintenance and servicing of assets. Odorous activities such as moving sludge cake should be avoided on days when the prevailing wind is towards sensitive receptors.
2. The last resort is contain the nuisance e.g. by covering odour sources. If covers are required, then small odorous areas such as desludging and return liquor wells should be addressed first.
3. Ventilation may be required to prevent the build up a corrosive atmosphere. Odour abatement equipment should be sized to cope with any variations in odour levels.

Severn Trent Water is also committed to the following principles of H4 guidance:

- The integrity of the site infrastructure (including roads, buildings, ducts, pipes, drainage/sewerage, process equipment and controls) are regularly inspected and maintained.
- A high level of site cleanliness is maintained and is enforced by the site management
- Company will engage with the neighbours to minimise their concerns including responding to their complaints effectively

The Environment Agency will be notified in the event of odorous releases detected outside of the site that are or may be caused by the activities authorised by the environmental permit. In the event of an olfactory egress, the Environment Agency will be informed using a Schedule 5 Notification Form, located in Schedule 5 of the permit.

15) Odour risk assessment

Table 3 Odour risk assessment

Cause of elevated odour	How the severity is measured	Likelihood (pre controls)	Control measures
Removal of sludge cake from site under normal conditions	Odour assessment of cake	Low	Use competent haulage contractors Collection in sheeted vehicles. Minimise agitation of cake during loading.
Damage to tank roofs	Digesters and gas holders are alarmed to indicate loss of pressure	Medium	Routine inspection regime of digester roofs. They are maintained in line with Gas Holder Regulations.
Damage to fabrication of sludge building	Visual inspections	Medium	Visual inspection of the sludge building fabrication
Digester pressure valves activate	Digesters are alarmed to indicate pressure	Medium	Control digester feeds and volumes to maintain safe biogas level
Valves, pipes or pumps damaged or malfunctioning	Routine site checks Detected by site staff	Low	Selection of correct pipework for pressure and flow loads. Frequent on site checks Clean any spills promptly.
Odour scrubber and/or biofilter damaged or malfunctioning	Detected by site staff	Medium	Annual checks undertaken by Air-Water Treatments to assess odour control equipment including condition of medium
Processing equipment damaged or malfunctioning	Regular checks. Detected by site staff	Medium	Any equipment failures and associated risks requiring capital maintenance recorded on Severn Trent Operational Risk Matrix (STORM). Short term maintenance issues resolved through site manager OPEX budget.
Failure of electricity supply	CHP engines and flare will fail to work/ ignite	Medium	Dual electricity supply to site.
Human error – staff, managers, visitors	Regular checks Detected by site staff	Medium	Staff training and supervision. Visitor inductions. Regular checks. Clean any spills promptly. Near miss reporting.

Malfunction or damage caused by unauthorised visitors	Regular checks Detected by site staff	Medium	Security measures are in place including controlled access gates operated in accordance with our Closed gate policy. Perimeter fence and CCTV.
Fire and/or explosion	Detected by systems Detected by site staff	Medium	Staff training and supervision. DSEAR zones identified on map and on site. Fire extinguishers placed for quick access and checked regularly. Established contact with local Fire Service who have undertaken a site specific assessment.
CHP gas engine emissions	Odour detected by site staff.	Low	Scheduled stack emissions testing in accordance with requirements set out in the Environmental Permit. Serviced by STW CHP trained technicians as per manufactures recommendations and after each 1000hr service the emissions are monitored using calibrated handheld Testo unit. 3 rd party MCerts approved contractor monitors the exhaust emission once per year in line with permit requirements. If emission are found to be outside of the expected range then they are investigated and rectified by replacement of parts or bringing forward the service interval.
Poor housekeeping on site	Detected by site staff.	Low	Ensure spills are cleaned up promptly. Spill training is undertaken by Wholesale Ops and spill kits/hoses are readily available.

16) Monitoring Plan

Monitoring is essential to our operational control. These are some of the benefits it provides:

- Assessing the nature and extent of a potential risk of odour pollution
- Investigating sources and pathways
- Measuring releases
- Showing patterns that can be used to plan the timing of operations and predict potential risks of odour pollution
- Aiding management and control of the process, including in exceptional circumstance the diversion of waste to a similar facility

Some of the monitoring methods that we use are as follows:

- Sniff testing in response to concerns or complaints or when a potential risk of odour pollution is suspected. Members of staff from the offices/other areas of the Business (who are less sensitised to sewage treatment odours) will be requested to attend site.
- Monitoring the process controls of the Anaerobic Digestion and Urban Waste Water process. For example digesters are monitored for %DS, feed rate (both recorded on JRP), Temperature, pH, VFA, gas quality and H₂S (site manual readings) as part of the “golden measures” programme.
- Scheduled emissions monitoring by a specialist contractor (Air-Water Treatments). The most recent monitoring report by Air-Water Treatments can be provided on request. The Worksop odour control units were working well and did not require any remedial work last time they were tested.
- We have established a time based media change programme with the odour control supplier. Media will be replaced on a rolling five year basis.
- Dynamic monitoring of odour is undertaken on site, using odour management tasks. Tasks are either daily, weekly or 6 monthly and are assigned to Site Operators by the Regional Planners on the SAP/Sitemate system. (See Appendix 3 Odour Management Tasks)

Control measures identified in the Risk Assessment in Table 3 Odour risk assessment to be enacted if required.

Odour pollution Management Information (MI) is analysed and evaluated to enable reporting of trends to those with responsibility and authority to initiate appropriate action.

Records of the information received from this monitoring will be kept, and acted promptly on any findings that suggest there is a potential risk of odour pollution. Further investigation can be carried out via gas bag testing, or GCMS if required. A specialist contractor would be hired to undertake this work.

17) Responding to Odour Concerns and Complaints

Severn Trent Water takes any incidents, non-compliances and environmental complaints very seriously and have procedures in place to record and investigate these. Incidents are managed through standard procedures which ensure that all incidents are logged and that necessary preventative and/or corrective actions are taken.

Complaints are managed by Customer Services, where all complaints are logged on the Complaints Records Online Storage System (CROSS). Site Managers are responsible for ensuring that action is taken and for liaising with the relevant regulatory bodies (where appropriate). They ensure that any complaint is investigated and, if found to be justified, that work is undertaken to resolve the issue. They also provide an appropriate response to the complainant in a timely manner detailing the reason behind the issue and the actions taken to resolve the matter.

Information regarding complaints is recorded to allow determination of an appropriate response (corrective action) and to determine what measures need to be taken in the future to prevent its reoccurrence (preventive action). Please see Appendix 7 for a full version of the Complaints Response SOP.

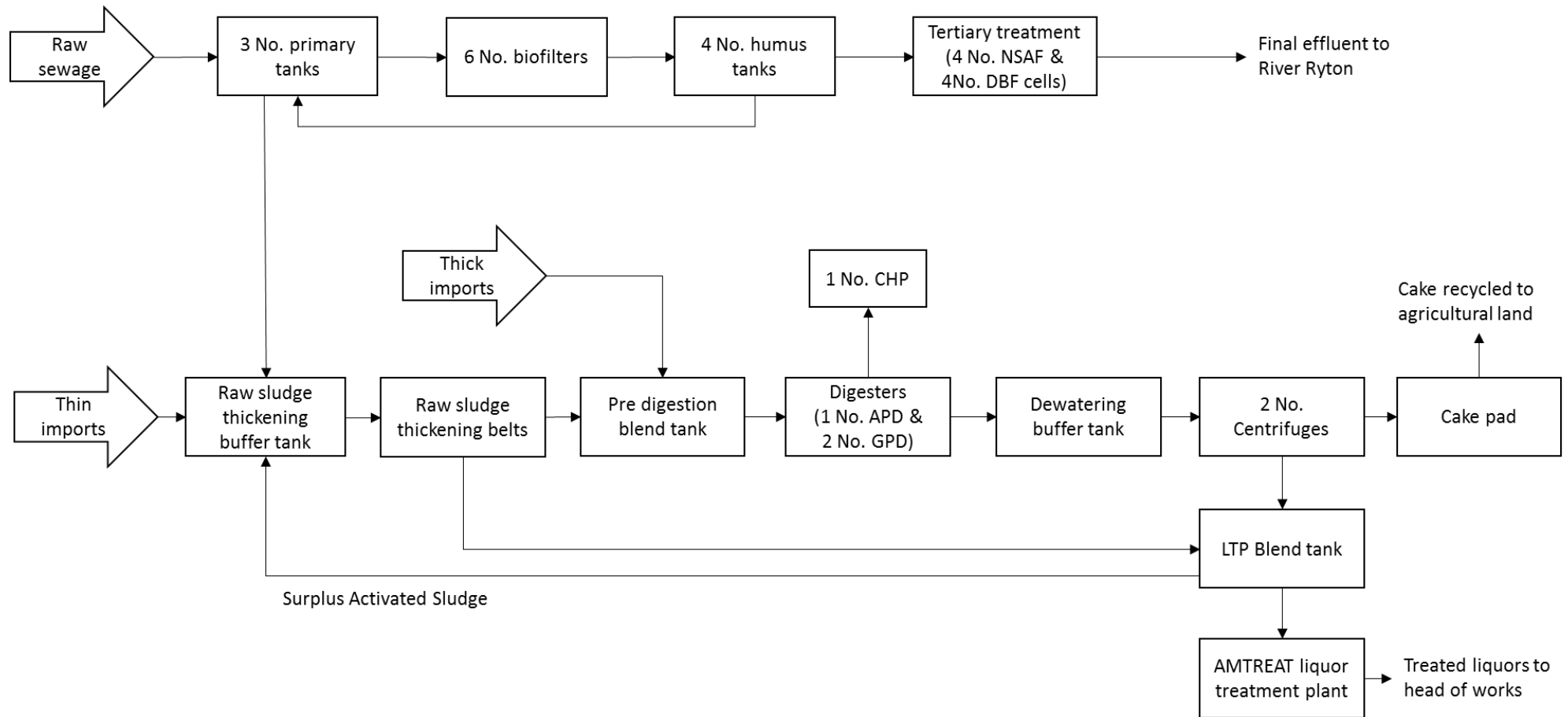
The EMS management review team review the MI (Management Information) data, which will include odour complaints.

Recurring odours may require investigation by our Process Design Engineering teams (PDE). FIDOL assessments (Frequency, Intensity, Duration, Offensiveness and location) are undertaken to assess whether any changes to the process are required.

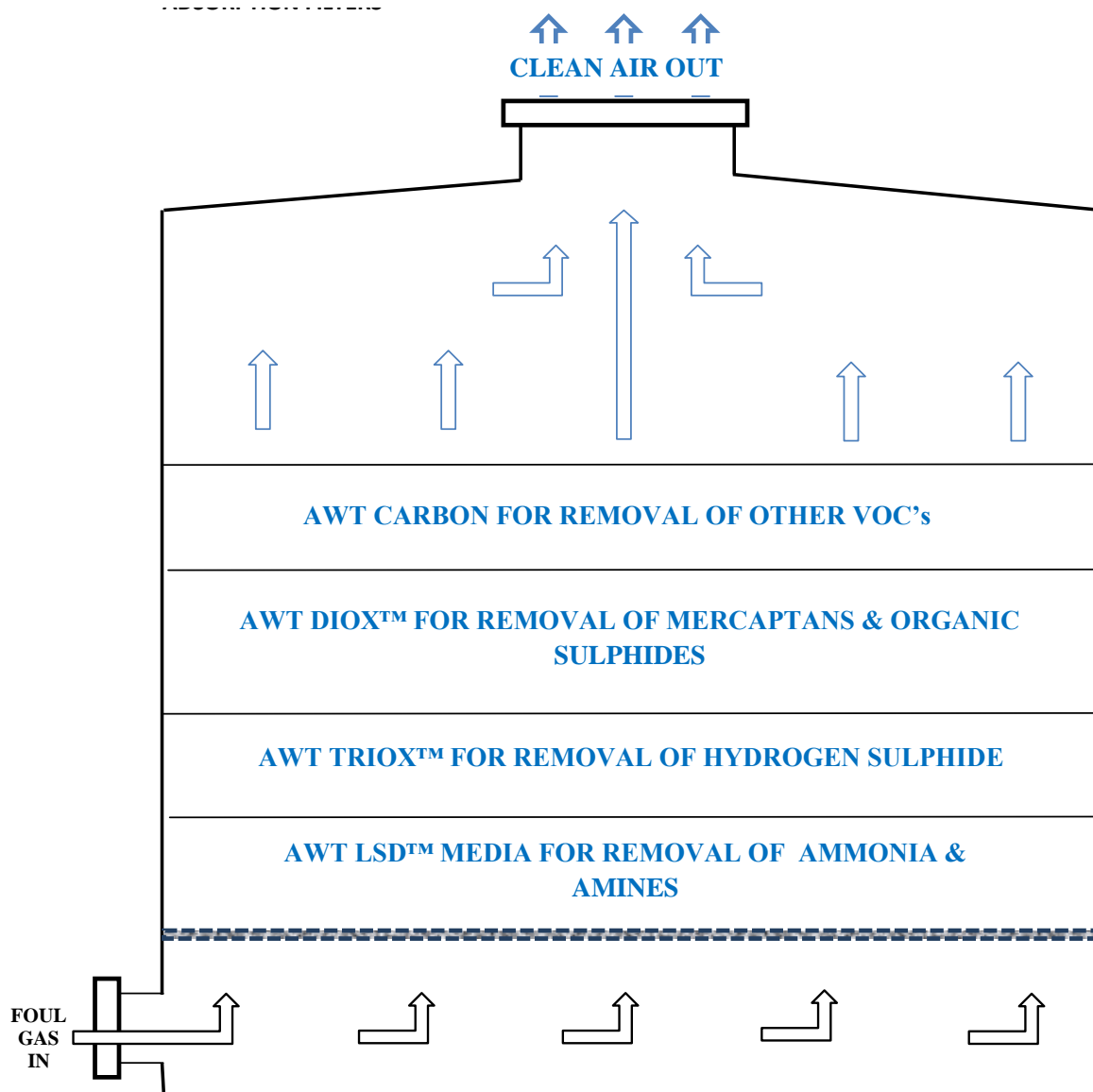
Where odour issues are prevalent, we would adopt the stance taken at our Wanlip Sewage Treatment Works during 2017/18. Live odour surveys were set up weekly with the local Council. Severn Trent also engaged with local residents and invited customers to site to investigate the locations on site and potential odour olfactory variances.

Engagement with the Environment Agency for process issues or pollutions that could cause odours, would be through either a Schedule 5/6, or a phone call to the Local Environment Officer as per the contacts section (Appendix 8).

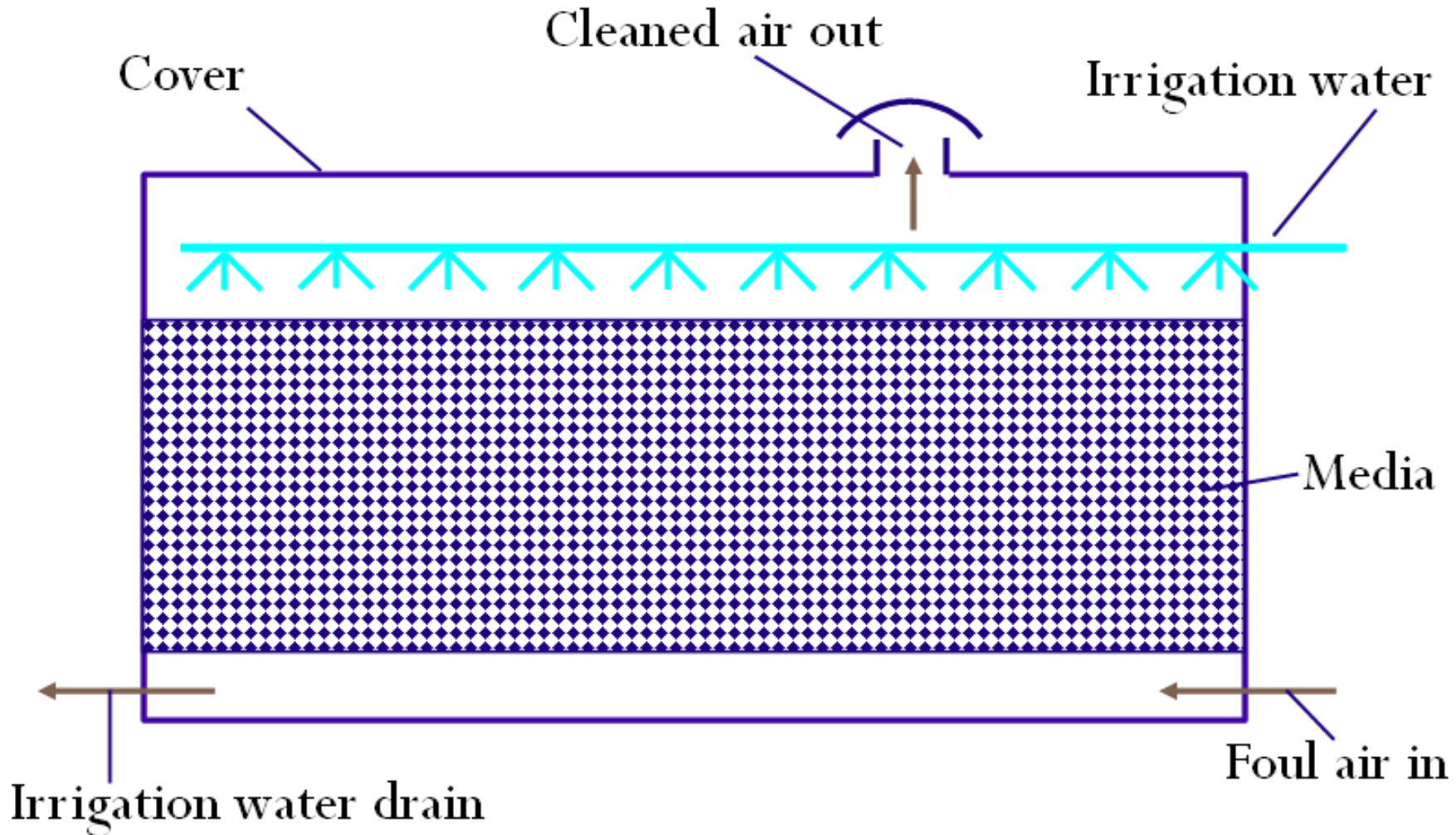
Appendix 1 - Process Flow Diagram



Appendix 2: Odour Abatement Systems: Peacemaker



Biofilter



Appendix 3: Odour Management Tasks

V = visit (scheduled or ad hoc)
 W = weekly
 6M = 6 monthly

Block Name	Task	Block line lead text	Task Description	Freq
Odour Control Covers	Cover Inspection	For each Cover -	For each Odour Control Cover - Check integrity of cover/fixings/seals & report any reactive work required	V
Odour Control Plant - Biofilter/Peacemaker	Operator Checks	For each Odour Control unit -	For each Odour Control unit - Check functionality of unit/s & any associated equipment	V
Odour Control Plant - Biofilter/Peacemaker	Operator Checks	For each Odour Control unit -	For each Odour Control unit - Check covers on tanks are closed	V
Odour Control Plant - Biofilter/Peacemaker	Operator Checks	For each Odour Control unit -	For each Odour Control unit - Check irrigation & adjust as required	W
Odour Control Plant - Biofilter/Peacemaker	Operator Checks	For each Odour Control unit -	For each Odour Control unit - Record appropriate data as required	V
Odour Control Plant - Biofilter/Peacemaker	Replace Blower Filters	For each Odour Control unit -	For each Odour Control unit - Replace blower suction filters where required	6M

Appendix 4: Standard Operating Procedure for Complaints Responses

Standard Operating Procedure (SOP)

Title	<i>Odour Customer Complaints On-site (Waste)</i>
Why	<i>To improve our ODI SIM (Service Incentive Mechanism) Compliance and improve the customer experience, also this will provide Severn Trent with a procedure for any odour complaints if Enviromental Health ask for evidence.</i>

Who	The Wholesale Operations Non Infra Team Manager shall have overall responsibility for implementing this procedure. The procedure must be followed by Technical Operators and Senior Technicians responsible for the day to day operation of sewage treatment works.
Scope	This SOP covers how to respond on-site to customer complaints relating to odour at a sewage treatment works.

Must Haves (H&S, Quality, Quantity, Environment, Training, Resources)

- Standard PPE
- Up to date site odour checklist highlighting areas on site that have odour issues
- Access to CROSS
- Must have a Wind Sock on all occupied sewage treatment sites

Remember – ‘Stop, Think, Take 20’

Summary Must Do's

Enter here no more than 10 key points / requirements of this SOP

- | | |
|--|--|
| 1. Contact the customer within 24hrs of complaint (Team Manager) | 4. Pass on completed site odour checklist to Environmental Health |
| 2. All customer complaints must be investigated via reactive site odour check within 3 days of complaint (Operative) | 5. All complaints recorded on CROSS (Team Manager) |
| 3. Proactive site odour checklist once a month, except once a week June-August | 6. Detailed report of customer complaints sent to COSC to form central record (Team Manager) |
| | 7. Must complete next steps/actions from site odour check (Team Manager/Operative) |

Detailed step-by-step guide: Proactive

Step	Procedure	Why
1	If possible liase with Environmental Health and walk around site to identify areas where odour is present	Developing good working relationship with external regulators
2	Create a site odour checklist and site map highlighting areas with odour issues (see Wanlip STW as an example in references)	It provides a structured and consistent approach to checking site odour levels
3	Every month a site operative must complete a site odour checklist, every week during summer months	This is to create an audit trail to act as evidence of site odour

4	Carry out site odour checklist using site map of highlighted areas where historic odour issues have occurred and record next steps throughout the process	If assets are out of service or not operating correctly this can affect odour levels
5	Check wind direction using on site wind sock where present	Is customer complaint up wind or down wind of site
6	Check weather conditions	Dry or misty conditions will increase the likelihood of odour issues
7	Record flows into works	Higher flows can flush septic sewage out of the network
8	Check site golden measures for action limit breaches and specify any that could influence odour levels	For example high sludge levels in a primary settlement tank can lead to septic sludge
9	Check if there is a increase in odour levels around plants operated by other companies on a Severn Trent site (e.g. Biffa food waste plant at Wanlip STW)	
10	Check if there are any other operational issues potentially effecting odour	There could have been a change in circumstances on site (e.g. an incident has occurred or new assets/processes installed)
11	Check if there are any factors outside of the site that are influencing site odour levels	E.g. Petfoods in Melton discharging high strength waste into the network
12	Carry out and complete next steps	
13	Store proactive site odour reports electronically and forward onto Environmental Health (if applicable)	To create records to refer to, to build relationship with Environmental Health and allow customers to view a public record

Detailed step-by-step guide: Reactive

Step	Procedure	Why
1	Team manager/site operative receive customer complaint via COSC or direct customer contact	
2	Record customer details in actions/next steps of the site odour check list	Help track and keep a record on site of customer odour complaints
3	If contacted by COSC, must contact customer within 24 hours of complaint	To ensure that we maintain a good relationship with our customers
4	If direct customer contact then liase with COSC and inform them of the odour complaint	To ensure that Severn Trent have a central record of customer odour complaints

5	Create site odour checklist if not already produced as part of proactive work	
6	Carry out site odour checklist using site map of highlighted areas where historic odour issues have occurred and record next steps throughout the process (follow from step 4 in proactive process)	If assets are out of service or not operating correctly this can affect odour levels
7	Carry out and complete next steps	
8	Store reactive site odour reports electronically and forward onto Environmental Health (if applicable) CROSS	To create records to refer to, to build relationship with Environmental Health and allow customers to view a public record
9	What do we do now? Who contacts the customer? (COSC or team manager is it COSC unless direct contact?)	
10	If persistent or compliant is escalated (Severn Trent hierarchy or local MP) then invite customer for site visit	

Records, Appendices & References

Site specific odour checklist form

Document Control & Governance:

Owners Name	James Stalbow	
Owners Role	Non-Infra Improvement Manager	
Date of Next Review	TBC	
Version Number	Draft1	
Revision History	First draft	
<i>Version 1</i>	<i>Date</i>	<i>Notes</i>
	04/05/2017	First issue
<p>The only valid version of this SOP is the electronic version held in Waterpedia. If this is a printed version it is only valid on the date of printing. Ensure this SOP is still within the current review period If not 'DO NOT USE' and contact your line manager for the new version</p>		

Appendix 5: Worksop Site Contact Details

Area of Site	Company Responsible	Contact Name	Phone Number
Sludge Screening Rag Skips	Biffa	Lee Harris [Transport Manager]	0845 608 6093
Odour Control Units	Air Water Treatment	Mark Purcell (STW) [Contract Specialist]	07789 903576
CHP Units	STW	Alan Preece [CHP Generation Manager]	07789 903043
Trade / Domestic Waste	STW	Ed Ruswa [Trade Waste Manager]	07770 605990
Biosolids / Cakepad	STW	Lee Musgrove [Biosolids Recycling Manager]	07766 558876
Permit Compliance	STW	Kay Daily [Permit Compliance Advisor]	07834 420353
Bioresources Operations	STW	Colton Cropper [Bioresources Team Manager]	07917 721456
Production Operations	STW	Karen Eynon [Non Infra Team Manager]	07703 718446
Bassetlaw District Council	-	Environmental Health	01909 533 219 01777 713 764
Environment Agency	-	Incident Hotline	0800 80 70 60