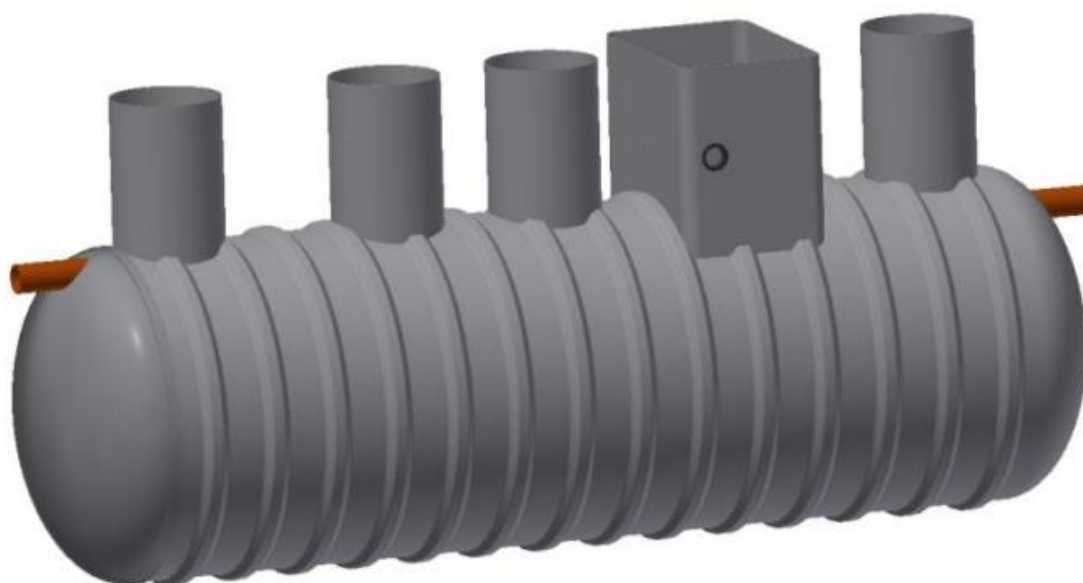


## Important Information

Please Read Before Using Your Sewage Treatment Plant

## Rewatec SAF

Submerged Aerated Filter – Sewage Treatment Plant



### Contents

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- ☐ Servicing & Maintenance



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Thank you for purchasing a Rewatec SAF.



25 Year Shell Warranty  
1 Year Technology & Kiosk Warranty  
1 Year Pump Warranty

Please Register Your  
Warranty Online Now

Warranty Registration



<https://www.premiertechaqua.com/en-gb/warranty-activation>

- Please register your warranty within 6 months of tank purchase.
- Registering your warranty allows the manufacturer to know the location of your tank if purchased from a third party.
- Proof of correct installation and regular plant maintenance (servicing) including purchase of serviceable parts MUST be retained, as these will be required in the event of any warranty claim.
- Premier Tech strongly recommend that the installation of the purchased product is carried out by an experienced installer.
- Premier Tech will not uphold the guarantee on the purchased equipment if routine maintenance has not been performed and documented.
- Failure to comply with the above Terms and Conditions will invalidate the warranty.

## Items Not Covered Under the Warranty

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- Premier Tech Water & Environment Ltd accepts no liability for any damage or loss, including consequential loss, caused by the failure of any equipment supplied and shall not be liable for any labour involved for the removal or replacement of its equipment or the subsequent transportation, handling or packaging of any part or parts thereof.
- In no case will Premier Tech Water & Environment Ltd be liable for loss incurred because of interruption of service or for consequential damages, labour or expense required to repair defective units, or 3<sup>rd</sup> party costs. Nor shall this constitute a cause for the cancellation of the contract of purchase and sale.
- Specifically exempt from this warranty are limited life of consumable components subject to normal wear and tear, such as air pump vanes, diaphragms and filters.

Examples of situations where the warranty is void:

- Failure to follow installation instructions or failure to follow operating and maintenance procedures.
- Accidental damage caused outside of Premier Tech's control.
- Unauthorised alterations made to the treatment plant.
- Improper use.
- Tampering.

## Permitting

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You require a legal water usage permit to operate a wastewater treatment plant if you discharge more than a certain volume of wastewater per day or in an environmentally sensitive area.

The approval/start-up of a small wastewater treatment plant can be performed only by a specialist company and must be documented with a start-up log within the installation manual provided to your installer.

## Organising an Installer & Servicing Agent

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You must ensure you use a suitably qualified company to install your sewage treatment plant and provide ongoing servicing.

Please record details of your installer and servicing agent below.

Failure to keep to a regular servicing schedule will void the warranty on your tank and may negatively impact performance.

Premier Tech can provide information on servicing agents in your area if required.

Installation Agents Name: \_\_\_\_\_

Installation Agents Address: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Postcode: \_\_\_\_\_ Tel: \_\_\_\_\_

Email: \_\_\_\_\_

Date Installed: \_\_\_\_\_

Product Installed: \_\_\_\_\_

Servicing Agents Name: \_\_\_\_\_

Servicing Agents Address: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ Postcode: \_\_\_\_\_ Tel: \_\_\_\_\_

Email: \_\_\_\_\_

# Health & Safety

You must read these warnings carefully before installing or using the equipment. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied.

Observe all hazard labels and take appropriate action to avoid exposure to the risks indicated.

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary.



- Only experienced contractors should carry out installation, following the guidelines.
- The unit should have a Pre-Service Agreement Inspection by a competent engineer.
- A qualified electrician should carry out electrical work.
- Covers must be kept locked.
- Observe all hazard labels and take appropriate action to avoid exposure to the risks indicated.

## Clothing

- We recommend the use of a dust mask and gloves when cutting components.
- Any person carrying out maintenance on the equipment should wear suitable protective clothing, including gloves.

## Working Area

- Ensure that the working area is adequately lit.
- Ensure that you are familiar with safe working areas and accesses.
- Use only the designated access walkways. Do not walk on the cover or deep well safety mesh(es).
- Ensure proper footing and balance at all times.
- Avoid any sharp edges.

## Maintenance and Inspection Procedures

- Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.
- The power supply to the equipment must be isolated at the control panel(s) before lifting the covers.
- If the equipment has to run with the covers off, all care must be taken to avoid contact with moving parts and electrical components or conductors.
- Drive guards must be replaced and secured if removed during maintenance.
- Once power has been isolated, the control panel must be kept locked shut to avoid accidental re-connection whilst work or inspection is being carried out.

## Desludging

- Desludging should be carried out by a licensed waste disposal contractor holding the relevant permits to transport and dispose of sewage sludge.
- The contractor must refer to the desludge instructions in the Operating Handbook, a copy of the instructions is fastened under the covers.

**Disclaimer:** This document constitutes installation and inspection guidance only – it is the responsibility of the installation company to ensure the wastewater treatment plant is fully functional & operating as intended.

## United Kingdom Health and Safety At Work Act 1974.

Section 6(a) of this Act requires manufacturers to advise their customers on the safety and the handling precautions to be observed when installing, operating, maintaining and servicing their products.

The user's attention is therefore drawn to the following:

1. The appropriate sections of this manual must be read before working on the equipment.
2. Installation and servicing must only be carried out by suitably trained or qualified personnel.
3. Normal safety precautions must be taken and appropriate procedures observed to avoid accidents

## Health

It is the customer's responsibility to ensure that all necessary health and safety control measures as well as suitable protective clothing/equipment is available.

### ***Leptospirosis – what is Leptospirosis and are you at risk?***

Two types of Leptospirosis infection affect people in the UK.

1. Weil's Disease – this is a serious and sometimes fatal infection that is transmitted to humans by contact with soil, water or sewage contaminated with urine from infected rats.
2. Hardjo-type Leptospirosis – this is transmitted from cattle to humans.

### **What are the symptoms?**

Both diseases start with a flu-like illness with a persistent and severe headache, muscle pains and vomiting. Jaundice appears about the fourth day of the illness.

### **How might I catch it?**

The bacteria can enter the body via cuts and scratches and through the lining of the mouth and throat or through the eyes.

### **How can I prevent it?**

After having worked in contact with sewage or anything contaminated with sewage, wash your hands and forearms thoroughly with soap and water. If your clothes, boots or tools are contaminated with sewage, wash thoroughly after handling them.

- **Take immediate** action to wash thoroughly any cut, scratch or abrasion of the skin as soon as possible. Apply antiseptic to the wound, cover with cotton wool or gauze, and protect with a waterproof plaster.
- **DO NOT** handle food, drink or smoking materials without first washing your hands.

If you contract the symptoms described above after coming into contact with sewage, report it to your doctor immediately and advise him/her of the circumstances.

## Sewer Gases

Sewage gases are potentially hazardous; it may be necessary to open the biozone treatment manhole cover to perform routine maintenance or to adjust the biozone air distribution system. **Take suitable precautions including venting of unit and the use of suitable personal protection equipment when engaged in these operations.** Work of this nature should not be conducted by an individual; there should be a minimum of two responsible individuals, one performing the task and one available in the event of an incident. All tasks and operations near the waste water treatment plant must be adequately risk assessed.

**DO NOT** enter the primary (septic) tank associated with the treatment system.

**DO NOT** leave the access/manhole covers to the plant open for any longer than is necessary. Temporary barriers and warning signs should be erected around any open covers or manways as appropriate. While the tanks are installed underground there is still a potential for falls from a height and drowning to occur should an individual fall through a manway access.

## Responsibility

The owner of the Sewage Treatment Plant is entirely responsible for plant operation and ensuring that the effluent quality does not breach applicable Discharge Consent Standards.

The offloading of the treatment plant and the correct installation is the responsibility of the owner. It is strongly recommended that a contractor with an adequate understanding of drainage and sewer systems should install the plant.

We can provide details of our service partners in your area who will be able to provide you with a quotation for Servicing. You are reminded that the existence of a service agreement with a service company does not transfer full responsibility for general maintenance that must be conducted in accordance with the accompanying instructions. It is still also the owner's responsibility to ensure that servicing and desludging of plant is carried out.

Soakaways, drains and emptying of Primary Tanks and Humus Tanks remain the responsibility of the owner, as does the prevention of the influx of surface water or backing up of the soakaways or treated effluent drains and as such are not covered by any service agreement. We shall not be liable for any damage or loss, including consequential loss, caused by the failure of any pumping equipment.



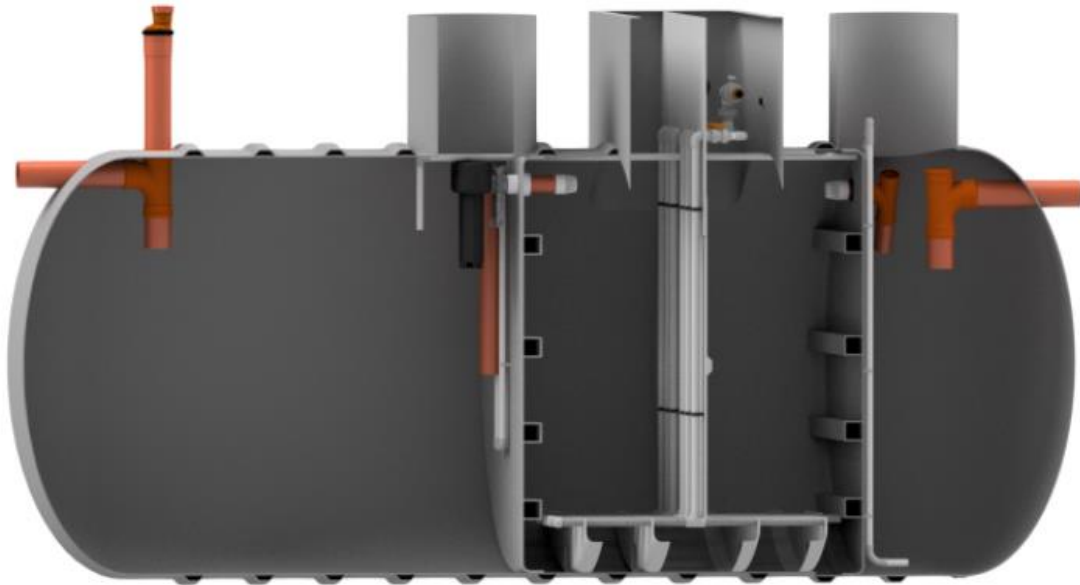
# What is a submerged aerated filter (SAF)?

The Rewatec submerged aerated filter (SAF) is a wastewater treatment plant that combines energy efficiency with a low carbon footprint.

The SAF process uses individual cells within the tank which are arranged in series and the wastewater flows through each chamber in sequence. Each cell contains a media on which biomass forms, and a fine bubble diffuser system feeds oxygen from blowers in the control kiosk to promote the growth of the biomass.

A blower sends air to the bottom of the bed to provide oxygen for the biomass to support the oxidation process. The air stream promotes both efficient mixing of the effluent and disturbance of any excess solids from the filter medium.

To optimise efficiency, all of our SAF products come with a steel painted kiosk as standard. This also includes a hi/lo pressure alarm and beacon.



# How does the Rewatec SAF work?

**Step 1** – In typical installations, wastewater first flows into the primary settlement tank. The purpose of this tank is simple; to balance the flow when subjected to variation and to separate solids from liquids (and store such matter until it is removed via periodic desludging).

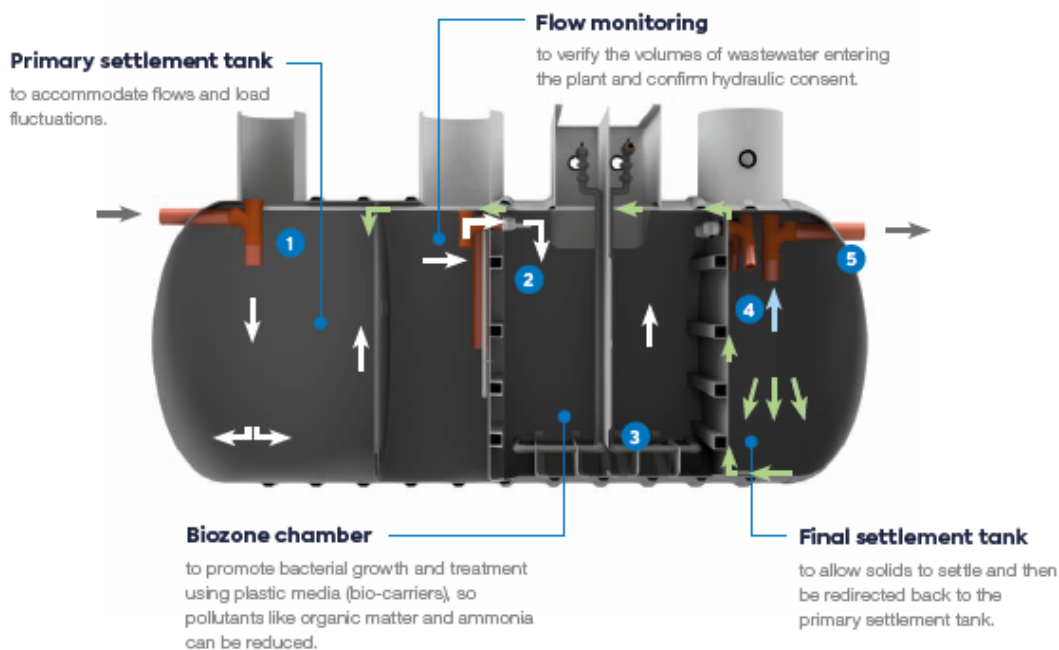
**Step 2** – Wastewater flow passes from the primary settlement tank to the biozone chamber. The biozone is designed with two coarse bubble aeration arrangements to prevent blockages from floating biomass and to increase the efficiency of oxygen being supplied to the chamber. Above each of these legs, plastic bio-media - each shaped with a large surface area to encourage biomass growth, treats the wastewater and minimises the size of the reactor.

**Step 3** – A blower, housed in an external kiosk, delivers air to the bottom of the biozone to provide oxygen for the biomass, further stimulating growth to support the oxidation process. The air stream promotes the efficient mixing of wastewater effluent with the bio-media present in the tank.

**Step 4** – After treatment, wastewater flows into the final settlement tank. Settled sludge (dead biomass) accumulates at the bottom of the tank before being redirected to the primary settling area via re-circulation (enabling partial nutrients (TN, TP) removal).

**Step 5** – The treated wastewater (final effluent) is subsequently discharged from the SAF via the outlet pipe. This can either be via gravity displacement or via an external pump station, depending on the water table and site requirements.

**DSAF** – The Rewatec DSAF incorporates the same working principles as the Rewatec SAF however it also incorporates pumps in both the primary and final settlement tank. This is to regulate the circulation of the nutrients transformed in the process and to ensure contact between nutrients and microorganisms. At the end of the process, nutrients are converted to inert gases ( $N_2$ ) or inert solids (Phosphorus-based) and leave the plant as emissions or as sludge.



## First 4–8 Weeks – Running-In Phase

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Building a stable biological function is a prerequisite for ensuring your plant operates as it was designed to. The purification efficiency of the SAF is based on micro-organism activity. It is a living system.

Your plant should be configured by a specialist company to suit your usage requirements during installation & commissioning.

The start-up period is related to the ambient temperature of the location where the tank is installed. This can be accelerated. As your installer/servicing company for information.

## Usage

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Strong cleaning agents often contain substances that feed on the oxygen necessary for the purification process and can compromise the active 'good' bacteria within your sewage treatment plant.

The use of washing and cleaning solutions should be kept to a minimum to achieve optimal effluent quality. Biodegradable agents (eco-friendly biodegradable) instead of chlorine are recommended.

## Please familiarise yourself with the following.

- Surface water must not enter the plant. (Unless otherwise specified)
- High volume discharges from swimming pools or Jacuzzi's must not enter the plant.
- Kitchen waste such as oil and grease. (Unless otherwise specified)
- Large quantities of chemicals such as water softener regenerant, disinfectants, strong acids or alkalis, oil and grease, pesticides or photographic chemicals must not enter the system.
- Do not use chemical or biological emulsifiers in grease traps.
- If you have any doubt about a particular substance, please contact Premier Tech or your local supplier for further advice.

## **Do Not Allow The Following Items or Substances To Enter Your Sewage Treatment Plant:**

### Causes of Blockages (Use bin instead)

- ☐ Adhesive plasters
- ☐ Bathroom wipes, wet
- ☐ Bird sand
- ☐ Cat litter
- ☐ Cigarettes
- ☐ Condoms
- ☐ Corks
- ☐ Cotton swabs
- ☐ Frying oil/grease/fats
- ☐ Hair (insofar as can be avoided)
- ☐ Nappy wipes, oily cloths
- ☐ Razor blades
- ☐ Sanitary towels
- ☐ Sanitary towels, tampons
- ☐ Textiles (cleaning cloths etc.)
- ☐ Wallpaper adhesive (Use recycling point)

### Causes of Overloading (Use bin instead)

- ☐ Ash
- ☐ Cooking oil
- ☐ Food leftovers (solid and liquid, e.g. out-of-date milk)
- ☐ High volume discharges – jacuzzi's/swimming pools

### Causes of Environmental Contamination

- ☐ Backwash water from water softening plants
- ☐ Chemicals
- ☐ Cleaning agent
- ☐ Engine oil
- ☐ Insecticide
- ☐ Medications
- ☐ Oily waste
- ☐ Paint
- ☐ Paintbrush cleaner
- ☐ Paint thinner
- ☐ Pesticide
- ☐ Varnish

## Usage Patterns

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The plant is designed to cope with changing patterns of usage.

Please explain to your installer/commissioning agent how you intend to use the plant. This includes:

### **Air Supply Output & Loading**



If you operate a seasonal business, for example, a holiday park or hotel where numbers of people can significantly fluctuate. An optional DO probe helps the tank to operate within fluctuating usage patterns whilst also saving energy usage. This can be retrofitted if not specified.

The plant should not operate consistently under 20% or over 110% of the design specification allowance. Unless this requirement has been specified in the tank design from the outset.

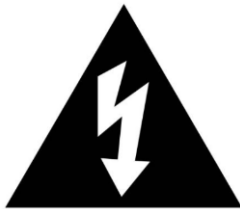
## Do Not Switch Off The Tank

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Your sewage treatment plant is a living biological system. DO NOT switch the tank off. This can affect the ongoing operational efficiency. If you need to switch the tank off consult a service agent.

Never allow the tank to remain empty. This creates an imbalance of external and internal forces. (Information: When the tank is de-sludged the contents should be replaced with clean water)



### In Case of Power Cut

Without power, the tank will essentially operate as a septic tank. The oxygen that is dissolved in the biozone will allow the tank to treat wastewater for up to 24 hours.

From this point onwards the effluent will flow by gravity towards the outlet.

## Kiosks

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All Premier Tech kiosks are manufactured from steel that undergoes a 3-stage powder coating paint process and finished in green.

All kiosks come with a 1 year warranty on all parts and components.



## Life Expectancy of the Tank

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**50  
Years**

Your sewage treatment plant shell is manufactured from GRP and built to last.

Upholding a regular servicing schedule will increase its life expectancy. Like any product, the level of maintenance it receives has a fundamental bearing upon the overall life expectancy.

Electrical components must be disposed of properly.

# Servicing & Maintenance

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Ensuring your sewage treatment plant is regularly maintained is necessary to ensure the operational efficiency of your tank and to limit the possibility of any faults occurring.

## ■ Servicing

This should be conducted by a professional wastewater treatment servicing agent as a matter of course never longer than a 6 month period. Failure to do this could impact the performance of your wastewater treatment plant and void your warranty.

Please consult your servicing agent. Your chosen servicing agent will provide you with information on what is carried out during a service.

**Please ask your servicing company to view the service document and ask them to run through this with you. Please record servicing in the schedule document on the next page.**

## ■ Monthly User Check

1. If you see an error message or the beacon flashes contact your servicing agent.
2. Visually check the tank and surrounding componentry for signs of damage/leakages/smells or anything which appears incorrect.



## SAF Maintenance Schedule

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Your tank must undergo a regular servicing programme. Please use this page to record services and maintenance.

Your warranty will be invalidated if you do not keep to a regular servicing schedule.

**1<sup>st</sup> Service**

Date:

Servicing Company:

Notes:

**6<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**2<sup>nd</sup> Service**

Date:

Servicing Company:

Notes:

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**7<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**3<sup>rd</sup> Service**

Date:

Servicing Company:

Notes:

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**8<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**4<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**9<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**5<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

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**10<sup>th</sup> Service**

Date:

Servicing Company:

Notes:

## Additional Resources

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British Water's A Guide For Users Of Wastewater Treatment Plants can be found on the British Water website.  
<https://www.britishwater.co.uk>

