

## Guidance for Private Water Supplies Water Safety Maintenance Plan Checklist

### **WHY ROUTINE MAINTENANCE?**

Compared to the public water supply, private water supplies are more likely to be contaminated with bacteria, protozoa, viruses and other substances which can pose a threat of serious illness and even death in vulnerable people.

The Water Intended for Human Consumption (Scotland) Regulations 2017 and The Private Water Supplies (Scotland) Regulations 2006 places a legal responsibility on persons who are responsible for private water supplies to ensure that the water is safe to drink.

The maintenance of a water supply system is essential to achieving safe drinking water and a written water safety maintenance plan can assist in complying with the Regulations.

Additional information can be found at the following links:

[My Gov Scotland](#)

[Drinking Water Quality Regulator - Private Water Supplies](#)

### **KNOW YOUR SUPPLY**

It is recommended that all users of private water supplies should be familiar with their supply i.e.:

- Who is responsible for the maintenance and upkeep?
- Where is the source?
- What is the infrastructure of the supply system, including treatment?
- What are the arrangements for maintenance?

### **MAINTENANCE**

The attached information offers some guidance on basic maintenance.

Should you wish an electronic copy, please contact the office detailed below.

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**WEEKLY MAINTENANCE**

**Date** \_\_\_\_\_

TREATMENT SYSTEM		Action/Detail
PARTICULATE FILTERS	<p>Check condition of filter. Does the filter need washed / changed? <i>Follow manufacturer's instructions; filters may require frequent replacement depending on quality of water.</i></p>	
ULTRAVIOLET SYSTEM	<p>Is lamp switched on? Intermittent operation may reduce the life of an ultraviolet system. <i>Frequent on/off operation should be avoided.</i></p>	
	<p>How old is the bulb, does it need replaced? <i>Warning – ensure UV light disconnected from electricity supply before changing</i></p>	
	<p>Follow manufacturer's instructions re cleaning and maintenance of the equipment (e.g. clean glass sleeve)</p>	
CHLORINATION	<p>Is there residual chlorine in the water?</p>	
	<p>Is the system operating correctly?</p>	
	<p>Maintenance – follow manufacturer's instructions.</p>	

**NEXT WEEKLY CHECK DUE**

**Date** \_\_\_\_\_

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### MONTHLY MAINTENANCE

Date \_\_\_\_\_

SOURCE		Action/Detail
RIVER / STREAM	Catchment area - Any changes in land use? <i>e.g. grazing livestock, forestry operation</i>	
	Any potential sources of contamination? <i>e.g. pesticides, sewage discharges, run off from farmland, etc</i>	
	Cut back overgrown vegetation at collection area.	
	Inlet pipe – is it stable and in the correct position?	
	Inlet filter – are there any blockages?	
	Check condition of livestock fencing ( <i>if applicable</i> )	
	Check diversion ditches ( <i>if applicable</i> ) for blockages.	
SPRING	Catchment area - Any changes in land use? <i>e.g. grazing livestock, forestry operation</i>	<b>Action/Detail</b>
	Any potential sources of contamination? <i>e.g. pesticides, sewage discharges, run off from farmland, etc</i>	
	Check the collection chamber - is it secure from hill water run-off? - is it protected from vermin?	

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	Cut back overgrown vegetation at collection area.	
	Check condition of livestock fencing ( <i>if applicable</i> )	
	Check diversion ditches ( <i>if applicable</i> ) for blockages.	
WELLS & BOREHOLES	Is the construction in good condition?	
	Is the cover seal tight and in good condition?	
	Does the top extend 150mm above ground level to protect the borehole from surface water run off?	
	Cut back overgrown vegetation at well/borehole.	

		Action/Detail
<b>COLLECTION CHAMBERS, PIPEWORK &amp; TANKS</b>		
PIPEWORK	Check all pipework for leaks or breaks.	
COLLECTION CHAMBERS,	Cut back overgrown vegetation at chamber/tank.	
EXTERNAL STORAGE and	Check the construction and integrity of the chamber/tank. <i>Is it in good condition; does it have any cracks; does the top extend 150mm above ground level to protect from surface water run off?</i>	

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<b>SETTLEMENT TANK(S)</b>	Is the cover seal tight and does it prevent ingress of surface water and vermin?	
	Check the overflow. <i>Is there a suitable cap to prevent vermin entering whilst still allowing water to exit?</i>	
	Check condition of livestock fencing ( <i>if applicable</i> )	
INTERNAL TANKS	Check integrity of tank & lids	

<b>TREATMENT SYSTEMS</b>		<b>Action/Detail</b>
PRE-FILTERS	Check filters and replace/clean as appropriate and in accordance with manufacturer's instructions.	
CHEMICAL TREATMENT SYSTEMS	Check media levels where applicable to the system and refresh as appropriate in accordance with manufacturer's instructions. Ensure system is working correctly.	
HOUSING	Check housing for any hazards that may affect water quality or integrity of equipment i.e. flooding, rodent activity, electrical faults. Take corrective action where any hazards are identified	

**NEXT MONTHLY CHECK DUE**

**Date** \_\_\_\_\_

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**ANNUAL MAINTENANCE**

Date \_\_\_\_\_

GENERAL		Action/Detail
DISINFECTION	<p><b>If the water supply has not run (flushed) regularly (i.e. once a week) then you should disinfect and flush the water system.</b></p> <p>The supply system should be cleaned and disinfected once every 12 months (annually).</p> <p><i>Disinfection of the supply should only be carried out by a competent person. If in doubt, seek advice from a plumber.</i></p> <p>See attached guidance for disinfecting your private water supply system.</p>	
TREATMENT MEDIA	Refresh / replace any correction media for treatment systems (i.e. pH, iron, manganese) as per manufacturer's instructions.	
UV TREATMENT SYSTEM	Replace the bulb as per manufacturer's guidance which is usually every 12 months	

**NEXT ANNUAL CHECK DUE**

Date \_\_\_\_\_

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<b>DISINFECTION</b>		<b>Action/Detail</b>
POWER FAILURE (Ultraviolet)	In the event of a power failure whereby untreated water has contaminated the pipework, sterilization tablets will require to be inserted at the physical filter preceding the UV.	
MAINTENANCE OF TREATMENT SYSTEM	Following maintenance of the system, disinfection should be undertaken to ensure sterilization of all tanks (internal and external), pipework, etc.	

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### GUIDANCE ON HOW TO DISINFECT SUPPLY

1.	Acquire tablets / solution suitable for potable water. <i>e.g. chlorine-based product</i> <i>Consult plumber for most suitable product.</i>
2.	Notify supply users that water will be heavily chlorinated and unusable during chlorination process.
3.	The system should be designed to be drained down. Where necessary, fit extra drain points to the bottom of the hot water storage or other tanks. Pipework needs to be self-draining and self-ventilating to aid the filling and draining. Make sure any dead leg (as opposed to low points in pipework) is fully drainable.
4.	Fit gate valves to the feeds from the cold-water storage tank if none are already fitted.
5.	Switch off the boiler.
6.	Shut off the supply to the cold-water storage tank.
7.	Completely drain the hot and cold system including the hot water cylinder, wc cisterns, etc.
8.	Thoroughly clean the cold water storage tank(s), taking care to remove all the debris.
9.	Shut off the feeds to the system from the cold water storage tank.
10.	Fill the cold water storage tank.
11.	Add the required amount of sterilizing tablets / liquid.
12.	Again, turn off the supply to the cold water storage tank. <ul style="list-style-type: none"> <li>a. Open the gate valves on the feeds and release the chlorinated water into the system by running every tap (and shower) and drain cocks on dead legs starting with the ones nearest the cold water storage tank.</li> <li>b. Do not allow the cold water storage tank to empty during the filling. If it looks like emptying, then close the gate valves in time to allow the cold water storage tank to refill. Re-chlorinate the filled tank and re-start the filling process.</li> <li>c. All the water in the system should now contain at least 50 ppm free chlorine. Check this at one or two outlets (including the furthest from the cold water storage tank), using the test tablets (see below).</li> </ul>
13.	When the system is full, top up the storage tank to above the normal level in the tank by holding down the ball valve and add a further tablet (see step 9 above).
14.	At this stage all cistern lids and storage tanks must be in their fixed position and remain so from this point onwards.



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15.	Leave the system for 4 hours when the chlorine level should still be in excess of 30 ppm. Check as in step 11(c) above using the test tablets. If it is not, the system should be re-chlorinated as the level of contamination is likely to have been high.
16.	Flush out the chlorinated water. This is best done by completely draining the system and tank and refilling with fresh water at least twice.
17.	Use the test tablets at selected outlets to ensure that the chlorine level is no greater than that of the incoming mains. A small trace of free chlorine is not harmful but may give an unpleasant taste to the water.
18.	Keep accurate records of the date of chlorination, initial and final chlorine concentrations and contact time. Include company and personnel responsible for chlorination and date of next chlorination.

Date of Chlorination	Initial Chlorine Concentration	Final Chlorine Concentration	Contact Time	Chlorination carried out by	Date Next Chlorination Due

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### GENERAL GUIDANCE

1. Ground levels should be below the top of the collection chamber/holding tank (minimum 250mm/6") to prevent water flowing over the ground into the tank and to prevent the overgrowth of vegetation into the tank. Remedial works may be required to clear ground vegetation; however, a **WEED KILLER MUST NOT BE USED**.
2. The collection chamber/holding tank(s) and lid(s) should be in a good state of repair and in place. Any damaged tanks require to be repaired or replaced. The lining should be smooth to inhibit colonisation by insects, vegetation etc. Lids/covers should be tightly fitting and designed to overhang the chamber/tank.
3. Any animal/plant/insect debris should be removed if present, followed by disinfection with a suitable disinfectant - the tank and system should be flushed out several times to ensure that all residual traces of disinfectant are removed.
4. Ancillary components - including coarse filters (roses)/filters, valves, ballcocks, stopcocks, pumps, etc. should be checked to ensure they are in good working order.
5. A rose/coarse filter should be fitted to the outlet pipe of the collecting chamber/holding tank(s) to reduce the potential accumulation of peat, soil etc., debris within the pipework/distribution system. (NB. debris may also damage hot water/heating system).
6. Inlet, outlets and overflow pipes should be vermin proofed where appropriate and sealed at their entry and exit points to/from their tank(s). Vermin proofing to prevent the entry of small animals, frogs, toads and insects can be achieved by securing a piece of fine mesh screen over vulnerable outlet points.
7. Inlet, outlet and overflow pipes should be positioned to prevent the level of water within the tank(s) breaking over the top of the tank and flooding the surrounding area.
8. Existing fencing around the collection chamber/holding tank(s) should be checked to ensure that it is in a good state of repair, preventing access by animals.
9. If at present, the collection chamber/holding tank(s) is/are not protected by a stock proof fence, a fence should be erected at a radius of not less than four metres from the chamber/tank(s). It is recommended that wire mesh be fitted to the fence to prevent access by smaller animals.

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10. Holding/water tanks within individual domestic premises should also be checked to ensure that lids are intact and in place and the tanks are in a good state of repair.

In some cases, remedial works in accordance with the above checklist should suffice to at least improve the bacteriological quality of a private water supply. A specialist consultant or water treatment company should be consulted should this not be the case.

In the case of a stream/burn/loch supply, the bacteriological supply is unlikely to improve and under these circumstances, a permanent treatment system will be required.

Temporary measures may be required in the interim period prior to completion of remedial works: -

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### **Bacteriological Failure**

1. Water used for drinking and cooking purposes should be boiled. Generally, vigorous boiling for up to one minute should suffice. Once the water has been boiled, it should be allowed to cool and settle and if necessary, be decanted or filtered through a coffee paper. Alternatively, bottled water should be used.
2. Sterilising tablets may be added to water in glass containers BUT ONLY IF the water is clear, odourless and free from suspended matter/solids.

### **Chemical Failure**

1. If the supply is unsatisfactory due to suspended solids, boiling, cooling, settling and decanting or filtering through a coffee filter paper should improve quality. It is recommended however, that a suitable, permanent filter be installed.
2. In the case of other chemicals, an alternative source of drinking and cooking water requires to be provided pending the implementation of a permanent solution.