



DRINKING WATER INSPECTORATE

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DWI Advice Letter 02/2020

To Board Level and Day to Day Contacts of Water and Sewerage Companies and Water Companies in England and Wales

Dear Sir/Madam,

Advice Letter on maintaining drinking water quality when reinstating water supplies after temporary closure due to the CoViD-19 outbreak

Purpose

1. The purpose of this letter is to provide advice to Government Departments; Local Authorities; private water suppliers; homeowners; public building owners/occupiers; industrial, commercial and retail business premises owners/occupiers; and those responsible for travel hubs such as airports with the necessary information concerning water supplies in buildings as a consequence of national restrictions due to CoViD-19.
2. This letter does not pre-suppose the timing of or how national restrictions may change, but seeks to ensure water quality is maintained when returning a building water supply which has remained unused.
3. This letter additionally sets out expectations to water suppliers, who are responsible for enforcement of various aspects of the Water Supply (Water Fittings) Regulations (1999), together with the quality and sufficiency of public water supplies.

Introduction

4. The exceptional circumstances arising from the national restrictions put in place to deal with CoViD-19 have led to the closure of many premises. Whilst closure is not uncommon (for example, for the purposes of school and industry holiday shutdowns), the extent and duration of the current closure of premises is beyond routine practice

and experience, and has given rise to enquiries to the Inspectorate concerning the quality of drinking water supplies, including requests for advice on returning supplies to normal use when current restrictions are revoked.

5. This Advice Letter provides generic guidance on matters of good practice to return and maintain a water supply in a building as these are often overlooked because they typically fall outside of the responsibility of the public water supplier.
6. There are a number of publications, advice and guidance in this area and this letter does not seek to endorse, verify or supersede these documents. However, where appropriate, links to such advice for particular circumstances and sectors of the economy have been provided. Where relevant, queries on specific advice should be directed to the appropriate regulatory authority or trade body.

Generic Advice

7. All suppliers and users should be aware of the importance of maintaining a clean and safe drinking water supply for public health purposes, and that is of acceptable quality for consumers.
8. It is the duty of those supplying water made available to the members of the public for it to be wholesome for domestic purposes, such as drinking, washing, cooking and preparing or cooking food. Where there is a failure or a likely failure attributable to the building distribution system, appropriate action must be taken by the facilities management of the building to mitigate the failure. Where water is supplied by a water supplier, the Water Supply (Water Fittings) Regulations (1999) apply and are enforceable by the water supplier. Where water is supplied through a private supply the Private Water Supplies (England) Regulations (2016)(as amended) and the Private Water Supplies (Wales) Regulations (2018) apply and are enforceable by the Local Authority (LA)
9. The World Health Organisation (WHO) has published guidance on [water safety in buildings](#) and within this it states that poor design and management of water systems in buildings can cause outbreaks of disease. More latterly, the European Society of Clinical Microbiology and Infectious Disease has published a series of documents aimed at [ensuring building water systems](#) are safe during and after the CoViD-19 crisis. Whilst this later guidance is aimed at *Legionella* prevention, the advice is relevant in the wider context.
10. Hazards in buildings may be roughly divided into microbial, chemical (including disinfection) and configuration, and some basic considerations should include the following:
 - a. Microbial:

- i. Ingress & faecal contamination; bacteria and viruses of faecal origin; environmental bacteria; bacteria/fungi of decay;
 - ii. Regrowth; stagnation; biofilms caused by heterotrophic bacteria;
 - iii. Points of user contamination such as water dispensers, water fountains and liquid vending which may be contaminated by viruses, bacteria and fungi e.g. CoViD-19;
 - iv. Organisms of serious concern e.g. *Legionella spp.*;
 - v. Nuisance organisms causing discolouration, fouling, or staining by iron precipitating bacteria, e.g. *Crenothrix*, *Gallionella*, *ferruginea*, *Leptothrix*;
 - vi. Taste and odour, including dimethyl polysulphides, e.g. *Pseudomonas*, *Flavobacterium* and *Aeromonas*, *Penicillium caeseicolum*; or hydrogen sulphide by *Clostridium*, *Bacillus Desulfovibrio* or *Desulfotomaculum*;
 - vii. Reduction of chloramines to free chlorine and nitrite by nitrifying bacteria.
- b. Chemical
- i. Leaching of cadmium, copper, lead, nickel, or zinc;
 - ii. Polymeric and elastomeric compounds;
 - iii. Disinfectants and equipment used to deliver disinfectants;
 - iv. Antiscalants, coolants, heating fuels, oils and other chemicals used in boilers, dishwashers, washing machines etc;
 - v. Organic compounds, such as BTEX, MTBE.
- c. Configuration
- i. Design of materials, pipes and fittings (including taps);
 - ii. Galvanic corrosion;
 - iii. Backflow, migration, cross-connection, valves, air gaps, dead ends, markings;
 - iv. Expertise and competence of operators, and contract arrangements;
 - v. Temperature, pH, flow, source;
 - vi. Water treatment devices such as softeners, filters, reverse osmosis devices.

11. After an extended period of low turnover or no demand, a water supply may deteriorate when left stagnant in storage tanks and pipework. Additionally, the domestic network or equipment used to treat, distribute and deliver water to the tap or outlet may not work as expected. These risks may not have been previously considered as part of a building or domestic systems risk assessment or more specifically a building Water Safety Plan (bWSP).

12. Deterioration may well be significantly exacerbated following prolonged shutdown, and may present serious and unaccounted for risks to health. Typical examples of deterioration problems might include the leaching of metals such as lead and nickel to a poisonous

level; the build-up of *Legionella* in tanks creating serious respiratory hazards; the accumulation of foul taste or odour issues causing consumers concern or to reject the water; the build-up of disinfectants through injector leakage to a level which becomes toxic; the failure of unused valves permitting backflow of faecal matter from toilets; unknown migration of petroleum products through plastic pipes at toxic levels; and dried out filters which may no longer be effective or have accumulated serious contamination. These examples are not exhaustive.

13. When returning water services to supply, the scale and complexity of the facilities which are managed need to be taken into account, including the needs of specialist purpose parts of the facilities that may present a higher risk profile.
14. In most routine circumstances, water supplies to households, and smaller public, commercial and retail buildings and other premises should, as a minimum, have progressive flushing of storage tanks and pipework to introduce fresh water into the system before consumer access. However, it will vary from system to system as to how this is done, for example, hot water systems will need to be raised to a temperature of greater than 60°C, and full system disinfection may be required in some circumstances to achieve 50mg/L free chlorine. Building managers should seek advice where necessary from WaterSafe scheme approved plumbers, or in more complex situations, from an experienced and competent professional, who should carry out a bWSP to determine new, changed, or previously unaccounted for risks and provide advice on how to mitigate them.
15. Where flushing is carried out from the public supply within buildings or facilities of a substantial size, building managers are advised to work in collaboration with the local water supplier to avoid sufficiency issues in the local area and to manage the disposal of large volumes of water, disinfectants and other chemicals.

New Risks

16. When considering the bWSP, new risks as a consequence of CoViD-19 should be considered. Particularly, drinking water fountains/communal drinking water points where person to person transmission may occur, potentially presenting a new risk. Consideration should be made of the design of the outlet to protect the outlet from direct contact by, in particular, the mouth. The outlet should preferably be free flowing without splashback and with sufficient space for a glass or bottle which then can be used for drinking. It may be considered prudent to introduce a short flush regime between users as an extra precaution.
17. Where a new risk is identified, a competent person with the necessary skills, knowledge and experience should be consulted to consider if the

design is appropriate and if the cleaning regimes and subsequent use to mitigate the risks are effective. For instance, a cleaning regime should be effective against contamination and be at an appropriate frequency. However, any cleaning chemicals should be used in a manner so as not to damage the outlet or leave a residue which in itself leaves a taint or is harmful to a subsequent user.

Other Matters

18. The Inspectorate provides advice on a range of matters relating to drinking water quality through consumer advice leaflets that can be accessed on its website.
19. At the end of this Advice Letter links are attached in Annex A for convenience to various sources of advice for key sectors of the economy, and the Inspectorate may add to this list regularly as a need arises. We would draw to the attention of owners/occupiers of premises in the following sectors in particular the need for them to ensure that their start up maintenance schedules for their water supply systems have regard to this advice.
 - Transport, including port, airport, and rail operators;
 - Leisure, including hotels and other accommodation providers such as holiday parks, campsites and holiday lets; and fitness centres and swimming pools;
 - Commercial premises;
 - Retail premises;
 - Industrial premises, including temporary facilities such as construction sites;
 - Health, including GP and dental surgeries and clinics;
 - Education and child care, including nurseries, schools, colleges and universities; and
 - Other public buildings, including offices, or premises where water supplies are used in service, such as in serving drinks and refreshments, or in hair dressing.

Water Supplier Duties

20. Water suppliers are reminded that they have a statutory duty to require all owners/occupiers of premises to maintain the quality of their water supplies, and to prevent contamination of the public supply. This may require suppliers to impose requirements on owners/occupiers to carry out work on their supply system, if wholesomeness requirements are compromised or threatened, using the powers conferred on them by the Water Supply (Water Fittings) Regulations (1999). In addition, owner/occupiers of non-household premises should be aware of their duties to comply with Health and Safety legislation, particularly that applying to risk assessments for *Legionella*.

21. Water suppliers are aware of their duties to take a proactive preventative approach to protection of public health, and have standing procedures and processes for managing issues that may arise in their supply systems from low turnover. Suppliers are reminded to:
- review their risk assessments in light of any operational changes associated with the lockdown, for example, changes in demand or usage patterns at treatment works, and for any capital works that may have been suspended where water has been made available to the scheme;
 - consider whether these changes have the potential to negatively affect water quality, for example: increased risk of discolouration due to accumulation of mains deposits; reduction in residual chlorine due to reduced turnover in storage and supply networks; or elevated pH in cement lined mains through increased duration of contact;
 - have plans in place to pre-empt any such issues, with proactive flushing, increased turnover or other suitable measures to prevent deterioration in water quality; and
 - be mindful of the potential impacts of extended storage at business properties and to provide appropriate advice to its consumers, and to non-household retailers, to ensure that water supplies are maintained in a wholesome condition.

Local Authority Duties

22. Local Authorities are reminded that they have a statutory duty to require owners/occupiers of premises with private water supplies that come within the legislation to maintain the quality of their supplies. LAs are advised to consider whether the changing circumstances arising from CoViD-19 might require any of their risk assessments to be reappraised. If so, in some exceptional circumstances, this may require LAs to impose requirements on owners/occupiers to carry out work on their supply system, if wholesomeness requirements are compromised or threatened, using the powers conferred on them by the Private Water Supplies (England) Regulations (2016)(as amended) and the Private Water Supplies (Wales) Regulations (2018). Particular attention should continue to be focussed on food production facilities with private supplies, and the operators of such facilities should be aware of their duties to comply with Health and Safety and other legislation.

Regulatory Duty

23. Water suppliers are reminded that they remain responsible under the Water Industry Act 1991 (as amended), the Water Supply (Water Quality) Regulations 2016 (as amended) in England and the Water Supply (Water Quality) Regulations 2018 in Wales, to provide sufficient and wholesome water at all times. Similarly for LAs, who continue to have responsibilities for private water supplies under the Water Industry Act 1991 (as amended), the Private Water Supplies (England) Regulations (2016)(as amended) and the Private Water Supplies

(Wales) Regulations (2018). The guidance provided in this Advice Letter does not relieve suppliers or LAs of these obligations.

24. This Advice Letter remains in force only for the duration of the CoViD-19 outbreak, as designated by the Government.

Enquiries

25. All enquiries regarding this Advice Letter should be made to Jacky Atkinson by email to Jacqueline.Atkinson@defra.gov.uk.

Copies of this letter are being sent to Christine McGourty, Chief Executive, Water UK; Jan Dixon and Kirstin Green, Deputy Directors Water Quality, Department for Environment, Food and Rural Affairs; Eifiona Williams, Water Management Team, Welsh Government; Sue Petch, Drinking Water Quality Regulator for Scotland; Catriona Davis, Drinking Water Inspectorate for Northern Ireland; Tony Smith and Chairs of the Regional Consumer Council for Water; Alison Cullen, Ofwat; Simon Moody, Environment Agency; Benedict Duncan, Food Standards Agency; Stephen Robjohns at Public Health England; and Local Authorities in England and Wales.

Yours sincerely



Marcus Rink
Chief Inspector of Drinking Water

Annex A to Advice Note 02/2020: Links to advice

The Drinking Water Inspectorate is not responsible for the content or accuracy of the following links and are for information only

Transport:

Rail

Rail operator's guidance – provision of drinking water on trains - <https://www.raildeliverygroup.com/component/arkhive/?task=file.download&id=469775986>

WRAS “The Use of Public Water Supplies in Railway Premises” https://www.wras.co.uk/downloads/public_area/publications/general/ign/ign_railways_9-06-03.pdf/

Harbours, Marinas and inland waterways seaports and airports

WRAS - https://www.wras.co.uk/downloads/public_area/publications/general/ign/backflow_prevention_guidance_coastal_and_inland_waterways_v1_september_2019_24.09.19.pdf/

Port Health Authorities – covers seaports and airports – home page - <http://www.porthealthassociation.co.uk/>

Seaports - <http://www.porthealthassociation.co.uk/seaports/water-quality/> link to water quality and *Legionella*

Airports - <http://www.porthealthassociation.co.uk/airports/>

Education

WRAS - https://www.wras.co.uk/downloads/public_area/publications/general/booklets/school_booklet_final_7.12.18.pdf/

Department of Education, Advice on standards for school premises - <https://www.gov.uk/government/publications/standards-for-school-premises>

Public buildings

Building Regulations and Water Fittings Regulations are applicable.

BSEN 806-5 Specification for installations inside buildings conveying water for human consumption – operation and maintenance. This standard provides

specific requirements for the operation and maintenance of installations inside buildings. Section 6 of this document provides details on operation, section 12 provides details on maintenance, Annex A provides details on frequency for inspection and maintenance and Annex B provides details on inspection and maintenance procedures.

BS 8558 Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

Guidance on BSEN 806. This standard provides additional guidance on best practice and section 6 provides details on water quality checks for stored water.

Leisure facilities

Sportsgrounds -

https://www.wras.co.uk/downloads/public_area/publications/general/booklets/sports_grounds.pdf/

Stables

https://www.wras.co.uk/downloads/public_area/publications/general/booklets/stables.pdf/

Swimming pools

<https://www.spata.co.uk/> this is the trade organisation for swimming pools and has guidance for Covid-19 as well as general guidance.

[The Pool Water Treatment Advisory Group](#) - PWTAG is a UK-based independent, non-commercial membership organisation, dedicated to raising standards in pool water treatment.

Agriculture

Agricultural premises -

https://www.wras.co.uk/downloads/public_area/publications/general/booklets/wras_agricultural_premises_2017.pdf/

Holiday accommodation

Holiday and residential parks -

https://www.wras.co.uk/downloads/public_area/publications/general/booklets/holiday_parks.pdf/

Preventing frost damage in caravan holiday homes

https://www.wras.co.uk/downloads/public_area/publications/general/info_leaflets/winterising_by_draining_down.pdf/

General Public

Looking after Water in your home -

https://www.wras.co.uk/downloads/public_area/publications/public_in_page/water_in_the_home_2015.pdf/

Keeping water safe in premises –

https://www.wras.co.uk/downloads/public_area/publications/general/info_leaflets/keeping_water_safe_in_premises_policy_dec2013.pdf/

Water in tanks, storage and fittings – DWI consumer leaflet, includes details for landlords - <http://dwi.defra.gov.uk/consumers/advice-leaflets/tanks.pdf>

Building regulations – Approved document G, Sanitation, hot water safety and water efficiency - <https://www.gov.uk/government/publications/sanitation-hot-water-safety-and-water-efficiency-approved-document-g>

Water UK briefing note on recovering drinking water supplies in buildings and networks (added to Annex A on 15/5/2020) -

<https://www.water.org.uk/publication/recovering-drinking-water-supplies-in-buildings-and-networks-after-prolonged-inactivity/>