

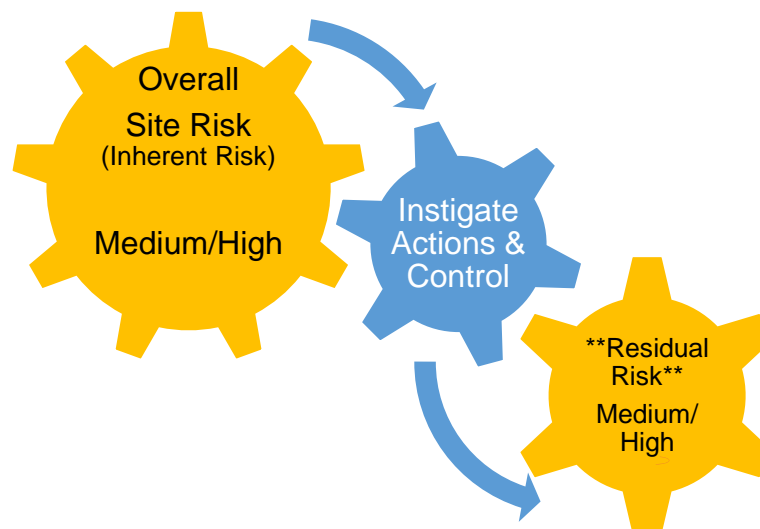
Site: Arches Housing Ltd

Customer: Block 1-8 Burns Court

Date of Assessment: 22 July 2024

Risk Assessor: D Roden

Risk Assessor Signed: 



Residual Risk is the Risk that remains after all efforts to eliminate and reduce risks have been made

Advisory Review Date: **July 2026**

Guidance on review. See Section 3 and Appendix 7

General Environmental Services Ltd.

Contents

| <u>Part One - Legionella Risk Assessment Summary</u> | | Section |
|--|-----------------------|-----------|
| Site Details | | 1 |
| Responsible Persons (Nominated Authorities) | | 2 |
| Site Risk Summary | | 3 |
| Desk Top Appraisal, Log Book, Record Keeping etc. | | 4 |
| Corrective Action Summary. | | 5 |
| Current and Advised Legionella Control Program | | 6a and 6b |
| <u>Part Two - Legionella Risk Assessment Details</u> | | |
| Cold Water Storage Tanks Risk Assessment | <i>Not Applicable</i> | 7 |
| Calorifiers / Water Heaters Risk Assessment | | 8 |
| Point-Of-Use Water Heaters Risk Assessment | <i>Not Applicable</i> | 9 |
| Hot and Cold Water Services Risk Summary | | 10 |
| Hot and Cold Water Services Temperature Data & Asset Register | | 11 |
| Other Risk Systems | | 12 |
| Schematics | | 13 |
| <u>Part Three - Appendices</u> | | |
| Appendix 1: Introduction to Legionella Risk Assessment | | |
| Appendix 2: Actions Following Legionella Detection or an outbreak of Legionellosis | | |
| Appendix 3: Recommended Inspection Frequencies for Risk Systems | | |
| Appendix 4: Glossary of Terms and Reference Sources. | | |
| Appendix 5: Written Schemes | | |
| Appendix 6: Population Susceptibility, Risk Categories | | |
| Appendix 7: Review Guidance | | |
| Appendix 8: Assessor Competency Certificate and Impartiality Agreement | | |
| Appendix 9: Legionella Control Association Membership Certificate | | |

| | |
|--|--|
| Customer: | Arches Housing Ltd |
| Customer Address: | 122 Burngreave Road Sheffield S3 9DE |
| Customer Contact: Telephone: | Nicola Maguire 07774 347950 |
| Site: | Block 1-8 Burns Court Burns Drive Chapelton Sheffield S35 1TP |
| Site Contact: Site Telephone: | Nicola Maguire 07774 347950 |
| GES Account Manager: Mobile: Email: | Holly Jackson 07788 716454 hjackson@ges-water.co.uk |
| Address: | GES Water Unit 10a Goldthorpe Industrial Estate Commercial Road Rotherham S63 9BL |
| Telephone: | 01226 399244 |

| Type of Building: Accommodation and Office | |
|--|-------------------------|
| <u>Assets on site & considered in survey</u> | <u>Present (number)</u> |
| Mains water supply to site | 1 |
| Other water supply to site (please specify below) | 0 |
| Cold Water Storage Tanks | 0 |
| Calorifiers | 0 |
| Water Heaters | *1 #4 |
| Water Heaters with Header Tanks | 0 |
| Domestic hot water services | *4 #32 |
| Showers | |
| Expansion Vessels (Flushable / Un-flushable) | 0 0 |
| Other Spray Producing Outlets e.g., Spray Connections on Dishwashers | 0 |
| Tank-fed cold water services | 0 |
| Mains-fed cold water services | *8 #44 |
| Water softeners/conditioners | 0 |
| TMVs/Thermotap/Thermostatic Showers | 0 *1 #8 |
| Miscellaneous systems: | |
| -Fountains & water features | 0 |
| -Whirl pools & Spa baths | 0 |
| -Fire suppression systems | 0 |
| -Car wash – drive through & lance type | 0 |
| -Horticultural misting systems | 0 |
| -Lawn sprinklers & hose pipes, BT/hoses | 1 |
| -Lathe & machine cooling systems | 0 |
| -Vending machines | 0 |
| -Spray booth water curtains | 0 |
| -Industrial uses of water | 0 |
| -Closed Systems | 0 |
| -Others (Chemical Treatment) | 0 |

Exclusions: Please note the following were found on site but are not included as part of this risk assessment.

Flats were asked not into be on this RA. Advised by Nicola Maguire.

The flats have a programme in place by site monthly flushing, temp checks and shower descale.

*Communal
Including Flats

Summary

| | |
|---|--|
| Date site assessed: | 22 nd July 2024 |
| Risk Assessor was shown around site by: | Rachel McVeigh |
| Thermometer/Probe reference: | Thermometer: D22430945 Contact Probe: #0111 |
| Type of building: | Flats & Offices |
| Approximate age of site (<i>years</i>): | 1980's |
| Currently the building is: | In Use |
| Typically, the building is in use between the hours of: | 24/7 for Flats. Mon – Fri 9-5 staff areas |
| Typical number of building users: | 10+ |
| It was noted during the assessment that the overall risk of persons on site should be considered as: | Medium/High |
| Water to site is via: | Mains: This assessment is mainly for the communal area of the site. It is mains fed, feeding all cold outlets and WH01 (combi boiler). WH01 feeds all communal areas. Flats 1-8 are mains, also each flat has individual combi boiler for kitchen & bathroom. |
| Other noteworthy issues on site observed: | Advised not to add flats, but site carryout tasks and I believe the flats need to be added to assessment. Each flat has its own comb: Kitchen & bathroom. GES carry out monthly checks in communal areas only. |
| Several actions were noted as requiring attention during our survey please refer to Section 4 for further guidance and notes. | |
| Following the assessment, an advised Legionella control programme has been suggested please see Section 6b for further guidance. | |
| The client is advised to review this document and provide any feedback on any amendments within 60 days of receipt of this report. | |

Management Personnel

Statutory Site Duty Holder

A senior executive with budgetary control who ensures that the operation complies with the law, by appointing and overseeing a competent Responsible Person. All appointments should be made and accepted in writing. The Duty Holder cannot delegate his / her duty, but can delegate managerial responsibility to the Nominated Responsible Person.

Nominated Responsible Person

Individual appointed with, and who has accepted, responsibility under the authority of the duty holder for ensuring that the organization's responsibilities for the control of *Legionella* are met and that all individuals and organizations assigned to carry out tasks in the scheme of *Legionella* control are competent to do so. A member of staff sufficiently senior to hold the budget.

This person would report to the statutory site duty holder and have day-to-day responsibility for ensuring that operational duties are carried out in a timely and effective manner and ensuring the adequate training and competence of themselves, operational staff and any contractors or subcontractors. This person should also be responsible for the accurate audit of the Site Log Book.

Operational Staff

Staff whose duties include inspection, monitoring, implementing, record keeping and carrying out remedial actions. There should be adequate record of their on-going training and regular assessment of their competence.

Service Providers

For example: risk assessors, monitoring companies, consultants, and contractors carrying out such duties as water treatment and cleaning and disinfection. Information should also be available to show the competence of individuals and the contact details of all relevant personnel within the service provider company.

The Client should satisfy himself that:

- each of the above can be clearly identified
- that they are aware of contact details of others in the chain of command
- each role has a competent deputy identified
- that each post has been accepted in writing
- that there is a separate sheet for each position showing training records and competency assessment.

It is the responsibility of the Nominated Responsible Person to ensure that Log Books are kept up to date and those actions are implemented

Nominated Authorities

| | | Name | Position | Tel No. |
|--|---|------------------|--------------------------|--------------|
| Statutory Site Duty Holder | | *Paul Common | CEO | |
| Nominated Responsible Person | | *Nicola Maguire | Compliance Officer | |
| Deputy Nominated Responsible Person | | *N/A | | |
| Operational Staff See previous page; list all relevant | A | *Janine Galloway | Cleaner | |
| | B | * | | |
| | C | * | | |
| | D | * | | |
| Service Providers See previous page; list all relevant | | | | |
| Company: GES Water | A | Holly Jackson | Environmental Consultant | 01226 399244 |
| | B | | | |
| | C | | | |

| | |
|--|--|
| Remedial Action Required | <div style="background-color: red; color: white; padding: 2px; display: inline-block;">Yes</div> |
| <p>Action Reference.</p> <p>Please refer to your written scheme of control for Legionella bacteria or Allocation of Responsibilities and confirm * above (complete as applicable).</p> | |

The overall site risk summary considers the system surveyed as a whole, and gives an “at a glance” view of conditions and the likely hood for Legionella bacteria to represent an infection risk to humans. The summary will also conclude the potential lowest (or, residual) risk possible if all recommendations in the assessment are completed.

(Scoring: Low Risk = 1, Medium Risk = 2, High Risk = 3, Very High Risk = 4)

| | | | |
|--|------------------------------|--|----------|
| 1. Contamination (of the water supply): | Comment:- | | |
| a. Incoming water quality | Good and clear in appearance | | |
| b. Incoming water temperature(s) | 16 °C | | |
| c. Potential contamination of the water supply e.g. backflow. | None found | | |
| d. Any existing control measures in place? | No TVC Sampling seen | | |
| | | | |
| Inherent Risk | 1 | Residual Risk | 1 |
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

| | | | |
|---|--|--|----------|
| 2. Amplification (conditions that can support Legionella growth): | Comment:- | | |
| a. Temperature profile of water | Hot & cold temperatures taken are compliant | | |
| b. Water change (turnover) rate | Generally good for communal areas. Flats are used daily but flushed monthly by site. | | |
| c. Dead leg/ends | None Found | | |
| d. High risk temperature zone 32-40°C (not thermostatically controlled outlets) | None found | | |
| e. Materials of construction | FH & scale deposits and outlets | | |
| f. Suitability of existing control program | Site carry out monthly water temps flushing & shower descale for flats only. Also temps for communal area GES carryout monthly temps of this area only. Improvements required see section 6B. | | |
| | | | |
| Inherent Risk | 2 | Residual Risk | 1 |
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

| | | | |
|--|---|--|----------|
| 3. Aerosols, or water droplets likely to form and spread: | Comment:- | | |
| a. Outlets likely to form aerosols | 8x SH – high | | |
| b. Will aerosols be contained | Yes | | |
| c. How far are these likely to spread | SH room only | | |
| d. Suitability of existing control program | Monthly descale & disinfection carried out by site. | | |
| | | | |
| Inherent Risk | 2 | Residual Risk | 2 |
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

| | | | |
|---|------------------|--|----------|
| 4. Exposure (are Aerosols, or droplets, likely to be inhaled): | Comment:- | | |
| a. Are aerosols likely to be inhaled | Yes | | |
| b. Is contaminated water likely to be aspirated | Unlikely | | |
| | | | |
| Inherent Risk | 2 | Residual Risk | 2 |
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

| | | | |
|--|--|--|----------|
| 5. Susceptibility of Individuals: | Comment:- | | |
| a. Is the exposed population vulnerable to Legionella infections? | Various ranges of susceptibility on site. <i>Please refer to appendix 6 for guidance.</i> | | |
| | | | |
| Inherent Risk | 2 | Residual Risk | 2 |
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

| 6. Conclusion: | | Advisory assessment review period based on (Inherent) Risk** |
|-------------------|-----------|--|
| Low Risk**** | = 5 - 6 | 4 Years |
| Low/Medium Risk | = 7 - 8 | 4 Years |
| Medium Risk | = 9 - 10 | 2 Years |
| Medium/High Risk* | = 11 - 12 | 2 Years |
| High Risk* | = 13 - 14 | 1 Year |
| Very High Risk* | = 15 - 16 | 1 Year (< 1 year if failures in control) |

OVERALL SITE RISK (score from 1-5 above)

| Inherent Risk | 9 | Residual Risk | 9 |
|--|---|--|---|
| <i>Risk before any action, and with present controls in place.</i> | | <i>Risk if all actions are completed and control program instigated.</i> | |

***These timeframes are advisory, any failures in control, or changes as identified in Appendix 7 will require a higher frequency of re-inspection.*

**** Table 2.2 from HSG274 as example of low-risk building. Important as most buildings will be medium risk as a minimum.

Info box 2.2: Low-risk systems

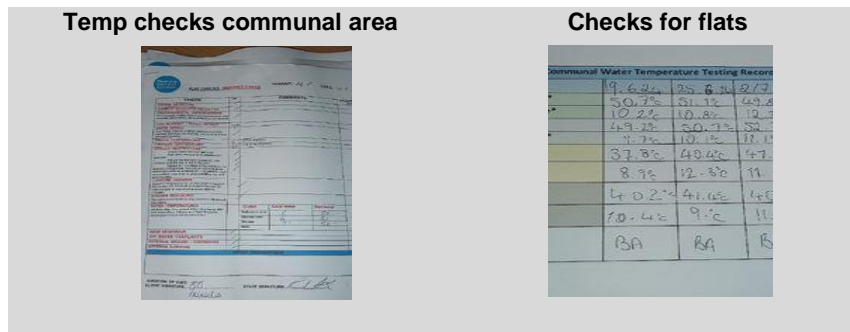
An example of a low-risk situation:

- in a small building without people especially 'at risk' from legionella bacteria;
- where daily water usage is inevitable and sufficient to turn over the entire system;
- where cold water comes directly from a wholesome mains supply (no stored water tanks);
- where hot water is fed from instantaneous heaters or low storage volume water heaters (supplying outlets at 50 °C);
- where the only outlets are toilets and hand washbasins (no showers).

| RISK ASSESSMENT SCORING – RECORD KEEPING SYSTEMS | | | |
|---|---------------|--|-----------------------|
| Criteria | Key to scores | | Risk assessment score |
| Site logbook | Low | Comprehensive logbook and fully up to date. | MEDIUM |
| | Medium | Logbook present, but some records missing. | |
| | High | No site logbook or unable to access | |
| Details of current risk assessment | Low | Previous risk assessment satisfactory | HIGH |
| | Medium | Out of date or insufficient risk assessment | |
| | High | No previous risk assessment available | |
| Description and plan of system | Low | Full description and up-to-date drawing | HIGH |
| | Medium | Insufficient description, out of date drawing | |
| | High | No description or drawing | |
| Description of Asset Registers and their accuracy | Low | Full description and up-to-date asset register | HIGH |
| | Medium | Insufficient description, out of date asset register with some omissions | |
| | High | No description or drawing | |
| Written control scheme details of precautionary measures for Legionella control. Note: check schedule of monitoring, operational checks, inspections, and calibration checks | Low | Full plan in force and up to date (see Section 6a). | MEDIUM |
| | Medium | Plan present, but some deficiencies (See Section 6a and Section 6b and notes below). | |
| | High | No plan of precautionary measures available (See Section 6b and notes below). | |
| Effectiveness of precautionary measures for Legionella control | Low | Monitoring records show consistent desired outcome. | MEDIUM |
| | Medium | Some out of specification results, but remedial actions documented. | |
| | High | Written scheme insufficient | |
| Written details of incident and emergency measures for Legionella control | Low | Full plan in force and up to date. | HIGH |
| | Medium | Plan present, but some deficiencies | |
| | High | No plan of precautionary measures available | |

| RISK ASSESSMENT SCORING – RECORD KEEPING SYSTEMS | | | |
|---|---------------|---|-----------------------|
| Criteria | Key to scores | | Risk assessment score |
| Procedures and records for inspecting and checking the system i.e., clean and disinfection certificates, Calorifier inspections etc. including all maintenance records. Ensure no deviations from operating procedures. | Low | Full, documented schedule & records in place | HIGH |
| | Medium | Insufficient schedule/documentation/records | |
| | High | No procedures, inspection details, records | |
| Inspection and assessment of the design, construction and condition of the water system and accessible equipment | Low | Good Condition | LOW |
| | Medium | Generally acceptable but some improvements may be advisable | |
| | High | Poor condition significant remedial works required. | |
| Are all areas of the system available for inspection. | Low | All areas available (only minimal exclusions present) | MEDIUM |
| | Medium | Not areas accessible but the assessor could garner sufficient information from the existing assessment and/or site records. | |
| | High | Poor access and no previous LRA or records for reference. POSTPONE AND RESCHEDULE LRA. | |
| <i>Optional use if required</i> <i>If areas of the system are not accessible system conditions were noted from the previous assessment and any records that were made available to the assessor.</i> | Low | N/A | |
| | Medium | Not areas accessible but the assessor could garner sufficient information from the existing assessment and/or site records. | |
| | High | Poor access and no previous LRA or records for reference. POSTPONE AND RESCHEDULE LRA. | |

| RISK ASSESSMENT SCORING – RECORD KEEPING SYSTEMS | | | |
|--|---------------|--|-----------------------|
| Criteria | Key to scores | | Risk assessment score |
| Are there sufficient details for the Calibration of equipment | Low | Calibration in date and kept in the Logbook | HIGH |
| | Medium | Calibration out of date however interim checks are completed | |
| | High | No records in place or out of date | |
| Is training and competency sufficient for nominated authorities (Statutory Duty Holder, Responsible Person etc.) | Low | All authorities have had sufficient training and checks completed on staff | HIGH |
| | Medium | As above but with some gaps and improvements required | |
| | High | No authorities in place site staff have had no checks or training completed. | |
| Have all Contractors been identified and assessed for Competency and adequate training. | Low | All identified, training and competencies all up to date. | MEDIUM |
| | Medium | All identified but some missing (or lapsed) and improvements required | |
| | High | None identified and not in place | |



The following items have been noted as requiring remedial actions.
A risk category has been assigned to each remedial as following:

| | |
|---------------|--|
| High | Action Required Immediately |
| Medium | Action Required Within 3 months |
| Low | Action Required Within 12 months |
| | <i>Other remedial actions for good practice are given without a risk rating.</i> |

Key to Codes for Action References

| | | | |
|-----|-----------------------------|------|---------------------------|
| RRK | Records/Management/Training | RHC | Hot & Cold-Water Services |
| RCP | Advised Control Programme | RS | Showers |
| RCW | Cold Water Storage Tanks | RORS | Other Risk Systems |
| RC | Calorifiers | RDL | Dead-Leg / Ends Register |
| RWH | Water Heaters | | |

Action Reference is to help quickly reference any issue in your report, rather than quoting the whole recommendation.

Action(s) Required Record from Desk Top Audit

| Action Reference | Recommendation(s) | Reference(s) | Risk | Completed | Signed / Date |
|------------------|--|--|-------------|-----------|---------------|
| RRK1 | Every site must have a clearly defined plant management structure with responsible persons nominated for each task. All site staff involved in the management of the system(s) should be recorded within the site logbook. We would strongly advise that clear responsibility pathways are established and maintained and that regular training reviews be arranged to ensure compliance. | Ensure Allocations of Responsibilities is completed for Site | HIGH | | |
| RRK3 | The site logbook records are incomplete. HSG 274 Part 2 requires that the log book is completed fully and records relating to Maintenance of the system(s) are retained for at least 5 years. | Log Book records should be audited once per annum by Site responsible person or contracted water hygiene company to ensure records are kept up to date | | | |
| RRK4 | We recommend that the logbook contains a written monitoring/maintenance/treatment schedule, method statements and a written control scheme with actions to be taken in response to monitoring results. | Ensure a planned maintenance schedule is included in the Site Log Book. This should include job specific Method Statements and Risk Assessments | | | |
| RRK5 | We strongly recommend that those personnel involved in the control and maintenance of the systems undertake Legionella awareness training. | Ensure personnel with responsibilities for Legionella control have suitable training | | | |

| Action(s) Required for Advised Control Programme | | | | | |
|---|--|--|-------------|-----------|---------------|
| Action Reference | Recommendation(s) | Details | Risk | Completed | Signed / Date |
| RCP6b | Suggested improvements to sites Legionella Control programme should be reviewed and implemented. | Refer to Section 6b for Legionella Control Programme as advised from this Risk Assessment. | HIGH | | |

| Action(s) Required for Water Heater(s). | | | | | |
|--|---|---|---------------|-----------|---------------|
| Action Reference | Recommendation(s) | Details | Risk | Completed | Signed / Date |
| RWH5 | Label the water heaters to clearly identify asset number/name. This aids identification with regards to record keeping. | See section 9 Typical combi on site (photo) | MEDIUM | | |

| Action(s) Required for Hot and Cold Water Service(s). | | | | | |
|--|--|----------------|---------------|-----------|---------------|
| Action Reference | Recommendation(s) | Details | Risk | Completed | Signed / Date |
| RHC12 | It is recommended that flexible hoses are removed from the system. Flexible hoses can contain rubber inner lining that can be a breeding ground for bacteria. Copper hard piping is preferred. | See Section 11 | MEDIUM | | |

| Action(s) Required for Shower(s). | | | | | |
|--|--|----------------------|-------------|-----------|---------------|
| Action Reference | Recommendation(s) | Location(s) | Risk | Completed | Signed / Date |
| RS4 | Showerheads were able to reach below normal bath water level creating a potential back flow risk. check to ensure appropriate back flow prevention is built-in, or a suitable restraint should be fitted to restrict the movement of the showerhead. | All flats with baths | HIGH | | |

| System | Daily | Weekly | Monthly | Quarterly | Six-monthly | Yearly |
|---|-------|--------|---------|-----------|-------------|--------|
| Cold water mains supply to site (drinking water) Potable tests – No | | | | | | |
| Point of use water heaters (POUWH) no greater than 15 litres | | | | | | |
| Check water temperatures to confirm the heater operates at 50–60°C (55°C in healthcare premises) – No | | | | | | |
| Check the installation has a high turnover – N/A | | | | | | |
| Domestic cold water services | | | | | | |
| Run infrequently used outlets - Yes | | | ✓ | | | |
| Temperature checks of sentinels and representative outlets – Yes site do flats and communal, GES do communal | | | ✓ | | | |
| Legionella tests - No | | | | | | |
| Inspect/descale outlets - No | | | | | | |
| Domestic hot water services | | | | | | |
| Run infrequently used outlets - Yes | | | ✓ | | | |
| Temperature checks of sentinels and representative outlets - Yes site do flats and communal, GES do communal | | | ✓ | | | |
| Legionella tests - No | | | | | | |
| Inspect/descale outlets - No | | | | | | |
| Domestic showers and spray taps | | | | | | |
| Run infrequently used outlets - Yes | | ✓ | | | | |
| Inspect/descale outlets - Yes | | | ✓ | | | |
| Legionella tests - No | | | | | | |
| Thermostatic mixer valves | | | | | | |
| Fail safe test – No | | | | | | |
| Full service – No | | | | | | |

This programme is based on a combination of the guidance contained in documents such as those listed in Appendix 4.

| System | Daily | Weekly | Monthly | Quarterly | Six-monthly | Yearly |
|---|-------|--------|---------|-----------|-------------|--------|
| Cold water mains supply to site (drinking water) Potable tests - Yes | | | | | | ✓ |
| Point of use water heaters (POUWH) no greater than 15 litres | | | | | | |
| Check water temperatures to confirm heater operates at 50–60°C (55°C in healthcare premises) - Yes | | | ✓ | | | |
| Check the installation has a high turnover – N/A | | | | | | |
| Domestic cold water services | | | | | | |
| Run infrequently used outlets - Yes | | ✓ | | | | |
| Temperature checks of sentinels and representative outlets - NFA | | | ✓ | | | |
| Legionella tests - Yes | | | | | | ✓ |
| Inspect/descale outlets - Yes | | | | | | ✓ |
| Domestic hot water services | | | | | | |
| Run infrequently used outlets - Yes | | ✓ | | | | |
| Temperature checks of sentinels and representative outlets - NFA | | | ✓ | | | |
| Legionella tests - Yes | | | | | | ✓ |
| Inspect/descale outlets - Yes | | | | | | ✓ |
| Domestic showers and spray taps | | | | | | |
| Run infrequently used outlets - NFA | | | | | | |
| Inspect/descale outlets - NFA | | | | | | |
| Legionella tests - Yes | | | | | | ✓ |
| Thermostatic mixer valves | | | | | | |
| Fail safe test - Yes | | | | | ✓ | |
| Full service - Yes | | | | | | ✓ |

None on site

None on site

| | | | | | | |
|--|---------------------|--------------------------|---|--------------------------|--|--------------------------|
| Location: Laundry | | | | | | |
| Floor: | Ground | *Designation: WH01 | | | | Action Reference |
| Make & Model: | Worcester | | Combi Boiler | | | ✓ |
| Capacity (L): | Combi Boiler | | | | | |
| Construction: | Steel | | | | | |
| How is it vented? | Unvented | | | | | |
| Heat Source: | Gas | | | | | |
| Type: | Instantaneous | ✓ | Small Volume | <input type="checkbox"/> | Low Volume | <input type="checkbox"/> |
| Labelling: | Yes | <input type="checkbox"/> | No | ✓ | | |
| Flow Temperature: | >50-60°C | ✓ | 64°C | | <50°C | <input type="checkbox"/> |
| Estimated Turnover: | Good | ✓ | Average | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| Frequency of use: | High | ✓ | Average | <input type="checkbox"/> | Low | <input type="checkbox"/> |
| Make up: | Mians | | | | | |
| Drain on unit? | Yes | <input type="checkbox"/> | | | No | ✓ |
| Header Tank? | Yes | <input type="checkbox"/> | | | No | ✓ |
| Header Tank Condition: | Good | <input type="checkbox"/> | Average | <input type="checkbox"/> | Poor | <input type="checkbox"/> |
| Header Tank Temperature: | <25°C | <input type="checkbox"/> | Between 25°C & 38°C with the W/H set @ 60°C | <input type="checkbox"/> | Between 25°C & 38°C with the W/H set @ <60°C | <input type="checkbox"/> |
| Are dead-ends present? | No | ✓ | | | Yes | <input type="checkbox"/> |
| Is there an expansion vessel on the pipe work? | No – Cold pipe work | ✓ | Yes – Cold pipe work | <input type="checkbox"/> | | |
| | No – Hot pipe work | ✓ | Yes – Hot pipe work | <input type="checkbox"/> | | |
| Is expansion vessel fitted correctly? | Yes | <input type="checkbox"/> | N/A | ✓ | No | <input type="checkbox"/> |
| Can Expansion Vessel be Flushed | Yes | <input type="checkbox"/> | N/A | ✓ | No | <input type="checkbox"/> |
| Access details: | | | | | | |
| Notes: | | | | | | |
| Flats 1-8 all have a combi boiler fitted. | | | | | | |
| WH02-WH09 | | | | | | |

Typical combi on site – RWH5



Section 10 – Hot and Cold Water Services Risk Summary

| | | <u>Yes/ No?</u> | <u>Action Reference</u> |
|--|---|--|-----------------------------|
| Are all temperatures compliant at the time of survey? | | Yes | |
| Do TMVs supply multiple outlets? | | No | |
| Are there any TMV spurs >1m in length? | | No | |
| Are spray inserts present on outlets? | | Yes | |
| Are low use showers flushed to drain weekly? | | *Yes | |
| Scale present on showerheads? | | No | |
| Do raised HW temps indicate scald risk | | No | |
| Are flexible hoses present on pipe work? | | Yes | RHC12 |
| Are outlets currently labelled? | | N/A | |
| Does exposed pipe work require insulation? | | CWS | No |
| | | HWS | No |
| Are jointing compounds compliant with Water Regulations? | | Yes | |
| Is there any lead pipe work on site? | | No | |
| Is there a risk of backflow contamination of the wholesome water supply? | Can showerheads reach other water services and present a backflow risk? | #Yes | RS4 |
| | Washing machine (domestic)? | No | |
| | Live connection to heating system? | No | |
| | Bib tap(s)? | No | |
| | Process water with inadequate protection to mains water supply? | N/A | |
| | Care home washing machine? | N/A | |
| | Other: | | |
| Other: | | | |
| Key | Risk | Notes: TMV = Thermostatic Mixer Valve. HWS = Hot Water Services. CWS = Cold Water Services | |
| | LOW | *Flushed monthly, but used regular by flats #All flats with baths | |
| | MEDIUM | | |
| | HIGH | | |

Section 11 – Hot & Cold Water Services

Temperature Data & Asset Register

| Building: | | Source/ Temps °C | | | Sentinel Hot | Sentinel Cold | TMV Present / Temps °C | TMV s Isolatable | Thermostatic Shower / taps | Mixer | Filters | Spray Inserts / Spray producing | Dead-leg/end (insert a ✓ or I) | Hose WRAS? Y/N | Low Use | Suggested Sampling Point |
|-----------------------------------|--------|---------------------|----------|-----|--------------|---------------|---------------------------|------------------|-------------------------------|-------|---------|------------------------------------|-----------------------------------|----------------|---------|-----------------------------|
| Locations: | | Mains | Tank Fed | HWS | | | | | | | | | | | | |
| Rooms | Assets | | | | | | | | | | | | | | | |
| Main Office | S | 17 | | 62 | ✓ | ✓ | | | | | | | | No | | ✓ |
| Laundry | WM | ✓ | | | | | | | | | | | | | | |
| | S | 17 | | 62 | | | | | | | | | | | | |
| Acc Toilet | WC | ✓ | | | | | | | | | | | | | | |
| | WHB | ✓ | | ✓ | | | 41 | ✓ | ✓ | | | | | | | |
| Staff Toilet | WC | ✓ | | | | | | | | | | | | | | |
| | WHB | 16 | | 70 | | | | | | | | | | | | |
| Outside | BT | ✓ | | | | | | | | | | | | ✓ | ✓ | |
| Flat 3,4,7,8 Typical SH set up | S x4 | ✓ | | ✓ | | | | | | | | | | | | |
| | WC x4 | ✓ | | | | | | | | | | | | | | |
| | WHB x4 | ✓ | | ✓ | | | | | | | | | | | | |
| | SH x4 | ✓ | | ✓ | | | ✓ | x | ✓ | | | ✓ | | | | ✓ |
| Flat 1,2,5,6 Typical B set up | S x4 | ✓ | | ✓ | | | | | | | | | | | | |
| | WC x4 | ✓ | | | | | | | | | | | | | | |
| | WHB x4 | ✓ | | ✓ | | | | | | | | | | | | |
| | B x4 | ✓ | | ✓ | | | | | | | | | | | | |
| | SH x4 | ✓ | | ✓ | | | ✓ | x | ✓ | | | ✓ | | | | ✓ |

Key for Section 12 Abbreviations (add additional if required)

BD = Bidet
 BS = Belfast Sink
 BT = Bib Tap
 C = Cold
 CM = Coffee Machine
 CWS = Cold Water Service
 DD = Drinks Dispenser
 DE = Deadend
 DF = Drinks Fountain
 DL = Deadleg
 DW = Dishwasher
 DWD = Drinking Water Dispenser
 ES = Electric Shower
 FD = Flushing Device
 ? = TMV hidden behind panel
GSE = Rooms grouped together, and assets spread evenly across each room.

FHR = Fire Hose Reel
 F = Furthest
 GA = Grease Shield
 H = Hot
 HWS = Hot Water Service
I = Deadleg impractical to remove
 MXH = Mixer Shower
 N = Nearest
 PP = Potato Peeler
 S = Sink
 SD = Shared TMV (schematic)
 SH = Shower
 SO = Steam Oven
 SS = Spray Sink
 r = Hot Water Return Loop

STSH = Steam Shower
 T = Thermostatic Tap
 TMV = Thermostatic Mixing Valve
 TP = Tea Point
 U = Urinal
 VM = Vending Machine
 WB = Water Boiler
 WC = Toilet
 WF = Water Feature
 WHB = Wash Hand Basin
 WM = Washing Machine
 WRAS = Water Regulations Advisory Scheme
 SSH = Spray Shower
 B = Bath
 IWT = Instant Hot Water Tap
 SP = Sampling Point

Section 11 – Hot & Cold Water Services Temperature Data & Asset Register

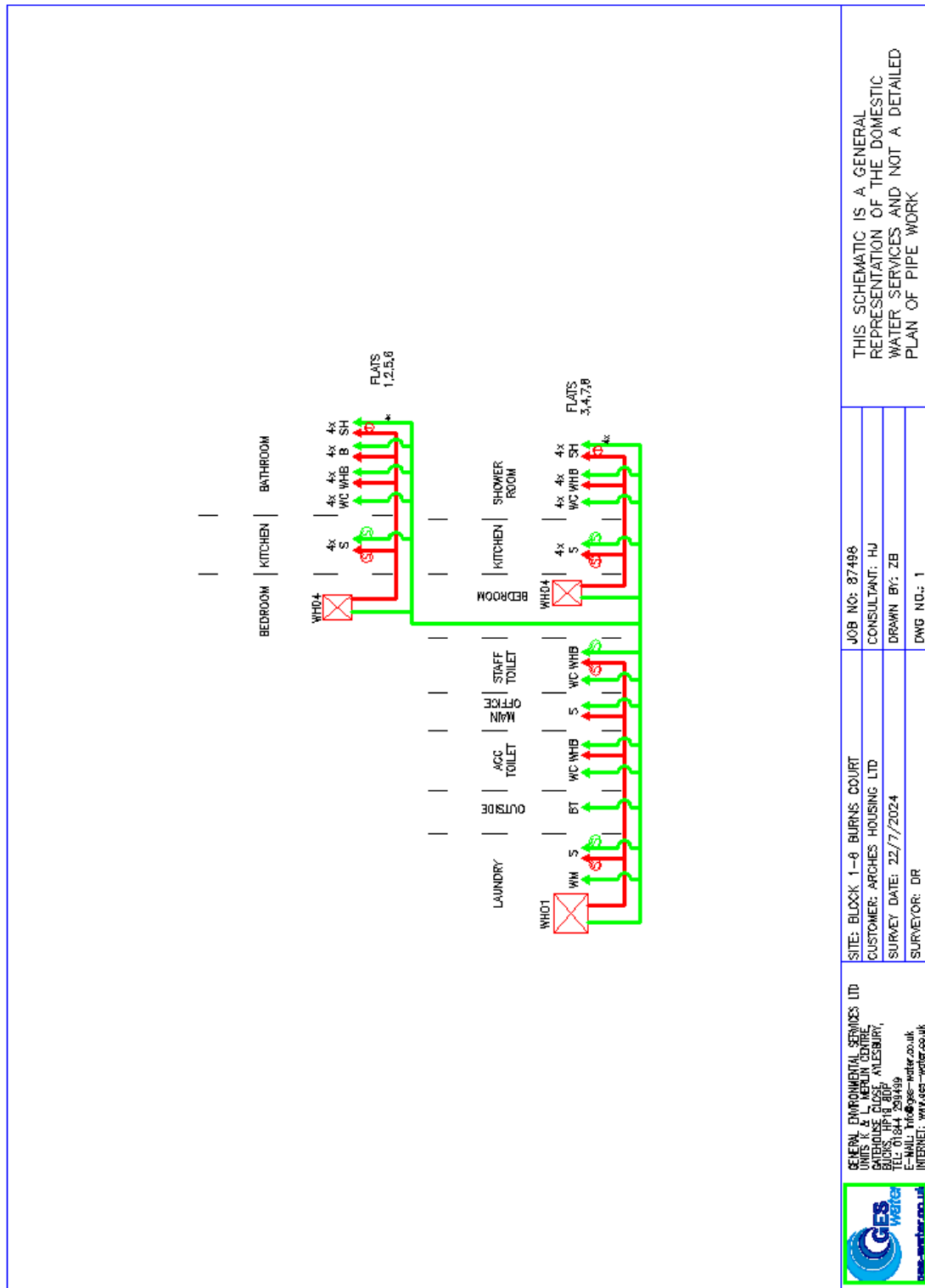
Suggested Sampling Point:


















Guidance for the Assessor is in line with HSG 274 part 2, 2.122 and will include any other outlets that the Assessor has noted during the assessment as being a potentially higher risk outlet. This may be due to several factors, such as poor temperature; heavy scale build-up; suspected low use; or because of its ability to create aerosols.

By default, assume the advice is to sample hot water service for Legionella, if cold is suggested a small "c" will follow the tick.

No other risk systems present

The diagram below gives a simplified overview of the water systems on site. They are based on our observations during the survey and information obtained from site staff.



| LEGEND | |
|---|--------------------------|
|  | HOT WATER SERVICE |
|  | COLD WATER DOWN SERVICE |
|  | MAINS WATER SERVICE |
|  | SOFT WATER SERVICE |
| WC | TOILET |
| DF | DRINKING FOUNTAIN |
| UR | URINAL |
| WHB | WASH HAND BASIN |
| WM | WASHING MACHINE |
| DWD | DRINKING WATER DISPENSER |
| SH | SHOWER |
| DW | DISHWASHER |
| TP | TEA POINT |
| HWB | HOT WATER BOILER |
| PM | POST MIX |
| WB | WATER BUNNIE |
| GW | GLASS WASHER |
| DL/DE | DEADLEG / DEADEND |
| FHR | FIRE HOSE REEL |
| | |
|  | CALORIFIER |
|  | COLD WATER STORAGE TANK |
|  | WATER METER |
|  | PUMP |
|  | ISOLATING VALVE |
| DE= DEAD END DL=DEAD LEG FH= FLEXIBLE HOSE TMV= THERMOSTATIC MIXER VALVE  = NON-RETURN VALVE  = THERMOTAP TMS=THERMOSTATIC MIXER SHOWER PRV=PRESSURE-REDUCING VALVE | |
|  | WATER HEATER |
|  | MIXER TAP |
|  | ELECTRIC SHOWER |
|  | TANK-FED SENTINEL |
|  | MAINS-FED SENTINEL |
|  | HOT WATER SENTINEL |

1. Legal Requirements and Implications

The risk assessment surveys are undertaken to identify and assess, as far as reasonably practicable, the water systems with regard to the risk of exposure to Legionella bacteria.

In particular, it is the aim of the survey to assess the risk to health in accordance with the Approved Code of Practice and Guidance, L8 'The Control of Legionella Bacteria In Water Systems' (ACoP L8 Guidance) under the Health and Safety At Work Act 1974.

The risk assessment document includes comprehensive survey forms. These are designed to provide a good level of background information relating to water services and information relating to potential risks.

It is important that the nominated responsible person gives serious consideration to the recommendations within the risk assessment, and that remedial works, monitoring, and cleaning programmes are implemented. These measures ensure that statutory obligations placed on the responsible person are complied with.

The following Regulations are considered to be relevant to the use and management of water installations where they may potentially pose a risk to health, and have been considered in conjunction with the risk assessment:

a) Control of Substances Hazardous to Health Regulations 2002 (COSHH)

These Regulations require:

- The employer to carry out a suitable and sufficient risk assessment of the risks created by their undertaking to the health of their employees and the general public.
- The employer to prevent or where this is not reasonably practicable, adequately control the risk of exposure. This would involve control measures, monitoring and maintenance procedures, and adequate training.
- The employer has a managerial obligation to co-operate in providing suitable emergency procedures in the event of an outbreak or suspected outbreak.

b) Health and Safety at Work Act 1974

Sections 2-3 require that employers take all reasonable precautions to protect the health and safety of employees and the general public.

c) The Approved Code of Practice & Guidance (ACoP) for the control of Legionella bacteria in water systems (commonly known as ACoP L8 Guidance)

Provides guidance on how to:

- Appoint a responsible person
- Identify and assess sources of risk
- Prepare a scheme for preventing or controlling the risk
- Implement and manage precautions
- Keep records of precautions implemented

Appendix 1

Introduction to Legionella Risk Assessment

The assessment should be reviewed regularly and whenever there is reason to suspect that it is no longer valid. This may result from, for example:

- Changes to the water system (including plant) or its use
- Changes to the use of the building in which the water system is installed
- The availability of new information about risks or control measures
- The result of checks indicated that control measures are no longer effective
- A case of Legionellosis is associated with the water system
- Changes to key personnel

The following systems are identified in the ACoP L8 Guidance, which may create a reasonably foreseeable risk of Legionellosis:-

- Cooling towers and evaporative condensers
- Hot and cold-water services
- Humidifiers and air washers where the water temperature exceeds 20°C
- Spa baths and pools where the water is deliberately agitated
- Other plant and systems containing water which is likely to exceed 20°C and which can release a spray or aerosol

1. General ACoP (L8) 4th Edition & HSG274 Guidance Recommendations for Domestic Services

The risk assessment may make the following types of recommendations in respect of the water supply, and hot and cold-water services.

a) Mains Water Supply

Potable water supplied through the mains is generally of high quality. However, water taken from alternative sources i.e. bore holes and private supplies could be contaminated with organic materials and organisms including Legionella.

It is therefore important to ensure that the water supplied to any building is of an acceptable quality.

In particular, pipe runs to cold water outlets should not follow the route of heating of hot water pipes, and where possible should not pass through heated areas.

Further care should be taken to ensure that drinking water outlet points are not installed at the end of a very long pipe where only small volumes of water are drawn off.

Water Temperatures

| | | |
|----------------|-----|--------------------------------|
| 0 -19°C | --- | Legionella will remain dormant |
| 20 - 45°C | --- | Legionella will multiply |
| 60°C and above | --- | Legionella will not survive |

b) Stored Cold Water Systems

Correctly maintained cold water services should present little risk during normal operation. However, several factors if not controlled, greatly increase the risk.

- **Temperature Control**

Cold water must be maintained below 20°C to prevent Legionella bacteria and other micro-organisms, from proliferating. Insulating storage cisterns and pipe work can control temperature, thus preventing the gain of heat from hot water services and other heat sources.

- **Storage Cistern Size**

Suitably sized storage cisterns should be used to comply with Water Supply (Water Fittings) Regulations 1999, to prevent water stagnation and possible heat gain.

Additionally, storage cisterns and their distribution systems as a whole, must also comply with Water Supply (Water Fittings) Regulations 1999.

Therefore, it is important that water temperature and water quality are maintained, and storage cisterns inspected on a regular basis (minimum six-monthly).

Consequently, a water hygiene monitoring regime and cleaning program should be implemented to ensure clean and safe water.

c) Hot Water Services

Hot water services are generally considered to present the highest level of the risk when not maintained correctly. Several factors can be controlled to minimise the risk.

- **Temperature Control**

A calorifier or water heater must be capable of heating its contents to 60°C. At the outlets a temperature of 50°C should be attainable within a minute of running.

Temperature can be maintained by insulating both the calorifier/water heater and associated pipe work, through to the outlets.

The water temperature within a calorifier/water heater and the outlet temperatures should be regularly checked (monthly). Additionally, the hot water service system should be inspected (and consequently cleaned and disinfected if necessary) on an annual basis, to prevent the build-up of sludge and debris and bacterial colonisation respectively. With careful management and water hygiene monitoring procedures, the risk of Legionellosis can be minimised.

3. British Standard 8580 - 1:2019

A code of practice that provides guidance and recommendations for water quality – risk assessments for Legionella control.

4. Health Technical Memorandum 04-01

The control of Legionella, hygiene, 'safe' hot water, cold water and drinking water systems. Provides specific healthcare related guidance for estates and facilities professionals.

5. RIDDOR

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) 8 These regulations require employers and those in control of premises to report accidents and some diseases that arise out of or in connection with work to HSE. Cases of legionellosis are reportable under RIDDOR if a medical practitioner notifies the employer; and the employee's current job involves work on or near cooling systems that are located in the workplace and use water; or work on water service systems located in the workplace, which are likely to be a source of contamination. For more information, see HSE guidance at www.hse.gov.uk/riddor/index.htm

6. Additional Considerations

a) Potential Scalding Risk

Where the temperature of the hot water exceeds 60°C or the users of the building are susceptible to higher temperatures. There is a potential scald risk for young children, the elderly, some persons with disabilities and those with sensory impairment.

Public areas and facilities are of particular concern and blending valves should be fitted to supply water at a temperature of 41°C ± 2°C. Measures should be taken to either reduce the temperature to 41°C ± 2°C and/or incorporate temperature control measures in accordance with ACoP L8 guidance.

b) Asbestos

Prior to undertaking any works, materials suspected of being asbestos based should be evaluated and appropriate action taken covered by Asbestos Regulations.

c) Access to Plant

To carry out assessments and remedial action it is important that safe access to storage cisterns and other assets is available, and considered as part of remedial works where access problems occur.

This risk assessment and schematics have been produced from the water system viewed at the time of the survey. Only by disinfections or chemical tracer tests, can accurate feeds be established.

This survey does not include any cooling water systems; if any are present on site these form part of a separate risk assessment.

Appendix 2

Actions Following Legionella Detection

ACoP L8 Table 2.2: Action levels following Legionella sampling in hot and cold-water systems

| Legionella bacteria (cfu/litre) | Action required |
|------------------------------------|--|
| More than 100 cfu/l and up to 1000 | <p>Either:</p> <p>(a) If the minority of samples are positive, the system should be resampled. If similar results are found again, a review of the control measures and risk assessment should be carried out to identify any remedial actions necessary or</p> <p>(b) If the majority of samples are positive, the system may be colonised, albeit at a low level. An immediate review of the control measures and risk assessment should be carried out to identify any other remedial action required. Disinfection of the system should be considered.</p> |
| More than 1000 cfu/l | <p>The system should be resampled and an immediate review of the control measures and risk assessment carried out to identify any remedial actions, including possible disinfection of the system. Retesting should take place a few days after disinfection and at frequent intervals afterwards until a satisfactory level of control is achieved.</p> |

Appendix 2

Actions Following Legionella Detection

ACoP L8 Table 2.3: Action levels following Legionella sampling in hot and cold-water systems in healthcare premises with susceptible patients

| Legionella bacteria (cfu/litre) | Action required |
|--|---|
| Not detected or up to 100 cfu/l | In healthcare, the primary concern is protecting susceptible patients, so any detection of legionella should be investigated and, if necessary, the system resampled to aid interpretation of the results in line with the monitoring strategy and risk assessment. |
| More than 100 cfu/l and up to 1000 cfu/l | <p>Either:</p> <p>(a) If the minority of samples are positive, the system should be resampled. If similar results are found again, review the control measures and risk assessment to identify any remedial actions necessary or</p> <p>(b) If the majority of samples are positive, the system may be colonised, albeit at a low level. An immediate review of control measures and a risk assessment should be carried out to identify any other remedial action required. Disinfection of the system should be considered.</p> |
| More than 1000 cfu/l | The system should be resampled, and an immediate review of the control measures and risk assessment carried out to identify any remedial actions, including possible disinfection of the system. Retesting should take place a few days after disinfection and at frequent intervals thereafter until a satisfactory level of control is achieved. |

HSG274 Part 2. Appendix 2.3

Appendix 2.3 Action to take if there is an outbreak of legionellosis

- 1 In England and Wales, legionnaires' disease is notifiable under the Health Protection (Notification) Regulations 2010²⁷ and in Scotland under the Public Health (Notification of Infectious Diseases) (Scotland) Regulations 1988.²⁸ Under these Regulations, human diagnostic laboratories must notify Public Health England (PHE), Public Health Wales (PHW) or Health Protection Scotland (HPS) (see 'Further sources of advice') of microbiologically confirmed cases of legionnaires' disease.
 - 2 An outbreak is defined as two or more cases where the onset of illness is closely linked in time (weeks rather than months) and where there is epidemiological evidence of a common source of infection, with or without microbiological evidence. An incident/outbreak control team should always be convened to investigate outbreaks. It is the responsibility of the Proper Officer to declare an outbreak. The Proper Officer, appointed by the Local Authority, is usually a Consultant in Communicable Diseases Control (CCDC) in England and Wales, or the Consultant in Public Health Medicine (CPHM) in Scotland. If there are suspected cases of the disease, medical practitioners must notify the Proper Officer in the relevant local authority.
 - 3 Local Authorities will have jointly established incident plans to investigate major outbreaks of infectious diseases, including legionellosis, and it is the Proper Officer who activates these and invokes an Outbreak Committee, whose primary purpose is to protect public health and prevent further infection.
 - 4 HSE or local Environmental Health Officers may be involved in the investigation of outbreaks, their aim being to pursue compliance with health and safety legislation. The local authority, Proper Officer or EHO acting on their behalf will make a visit for public health reasons, often with the relevant officer from the enforcing authorities (ie HSE or the local authority) for health and safety reasons. Any infringements of relevant legislation may be subject to a formal investigation by the appropriate enforcing authority.
 - 5 There are published guidelines (by PHE, PHW and HPS) for the investigation and management of incidents, clusters, and outbreaks of legionnaires' disease in the community.
 - 6 These are, for England and Wales, *Guidance on the Control and Prevention of Legionnaires' Disease in England*²⁹ and for Scotland, *Guidelines on Management of Legionella Incidents, Outbreaks and Clusters in the Community*.⁴⁰
 - 7 If a water system is implicated in an outbreak of legionnaires' disease, emergency treatment of that system should be carried out as soon as possible. This will usually involve the processes detailed in paragraphs 2.124–2.135.
-

HSG274 Part 2. Table 2.1: Checklist for hot and cold-water systems.

| Service | Action to take | Frequency |
|--|---|---|
| Calorifiers | Inspect calorifier internally by removing the inspection hatch or using a boroscope and clean by draining the vessel. The frequency of inspection and cleaning should be subject to the findings and increased or decreased based on conditions recorded | Annually, or as indicated by the rate of fouling |
| | Where there is no inspection hatch, purge any debris in the base of the calorifier to a suitable drain Collect the initial flush from the base of hot water heaters to inspect clarity, quantity of debris, and temperature | Annually, but may be increased as indicated by the risk assessment or result of inspection findings |
| | Check calorifier flow temperatures (thermostat settings should modulate as close to 60 °C as practicable without going below 60 °C) Check calorifier return temperatures (not below 50 °C). | Monthly |
| Hot water services | For non-circulating systems: take temperatures at sentinel points (nearest outlet, furthest outlet and long branches to outlets) to confirm they are at a minimum of 50 °C within one minute (55 °C in healthcare premises) | Monthly |
| | For circulating systems: take temperatures at return legs of principal loops (sentinel points) to confirm they are at a minimum of 50 °C (55 °C in healthcare premises). Temperature measurements may be taken on the surface of metallic pipework | Monthly |
| | For circulating systems: take temperatures at return legs of subordinate loops, temperature measurements can be taken on the surface of pipes, but where this is not practicable, the temperature of water from the last outlet on each loop may be measured and this should be greater than 50 °C within one minute of running (55 °C in healthcare premises). If the temperature rise is slow, it should be confirmed that the outlet is on a long leg and not that the flow and return has failed in that local area | Quarterly (ideally on a rolling monthly rota) |
| | All HWS systems: take temperatures at a representative selection of other points (intermediate outlets of single pipe systems and tertiary loops in circulating systems) to confirm they are at a minimum of 50 °C (55 °C in healthcare premises) to create a temperature profile of the whole system over a defined time period | Representative selection of other sentinel outlets considered on a rotational basis to ensure the whole system is reaching satisfactory temperatures for legionella control |
| POU water heaters (no greater than 15 litres) | Check water temperatures to confirm the heater operates at 50–60 °C (55 °C in healthcare premises) or check the installation has a high turnover | Monthly–six monthly, or as indicated by the risk assessment |

Recommended Inspection Frequencies for Risk Systems

| | | |
|----------------------------------|---|---|
| Combination water heaters | Inspect the integral cold water header tanks as part of the cold water storage tank inspection regime, clean and disinfect as necessary. If evidence shows that the unit regularly overflows hot water into the integral cold water header tank, instigate a temperature monitoring regime to determine the frequency and take precautionary measures as determined by the findings of this monitoring regime | Annually |
| | Check water temperatures at an outlet to confirm the heater operates at 50–60 °C | Monthly |
| Cold water tanks | Inspect cold water storage tanks and carry out remedial work where necessary | Annually |
| | Check the tank water temperature remote from the ball valve and the incoming mains temperature. Record the maximum temperatures of the stored and supply water recorded by fixed maximum/minimum thermometers where fitted | Annually (Summer) or as indicated by the temperature profiling |
| Cold water services | Check temperatures at sentinel taps (typically those nearest to and furthest from the cold tank, but may also include other key locations on long branches to zones or floor levels). These outlets should be below 20 °C within two minutes of running the cold tap. To identify any local heat gain, which might not be apparent after one minute, observe the thermometer reading during flushing | Monthly |
| | Take temperatures at a representative selection of other points to confirm they are below 20 °C to create a temperature profile of the whole system over a defined time period. Peak temperatures or any temperatures that are slow to fall should be an indicator of a localised problem | Representative selection of other sentinel outlets considered on a rotational basis to ensure the whole system is reaching satisfactory temperatures for legionella control |
| | Check thermal insulation to ensure it is intact and consider weatherproofing where components are exposed to the outdoor environment | Annually |
| Showers and spray taps | Dismantle, clean and descale removable parts, heads, inserts and hoses where fitted | Quarterly or as indicated by the rate of fouling or other risk factors, eg areas with high risk patients |
| POU filters | Record the service start date and lifespan or end date and replace filters as recommended by the manufacturer (0.2 µm membrane POU filters should be used primarily as a temporary control measure while a permanent safe engineering solution is developed, although long-term use of such filters may be needed in some healthcare situations) | According to manufacturer's guidelines |
| Base exchange softeners | Visually check the salt levels and top up salt, if required. Undertake a hardness check to confirm operation of the softener | Weekly, but depends on the size of the vessel and the rate of salt consumption |
| | Service and disinfect | Annually, or according to manufacturer's guidelines |

Recommended Inspection Frequencies for Risk Systems

| | | |
|----------------------------------|--|---|
| Multiple use filters | Backwash and regenerate as specified by the manufacturer | According to manufacturer's guidelines |
| Infrequently used outlets | <p>Consideration should be given to removing infrequently used showers, taps and any associated equipment that uses water. If removed, any redundant supply pipework should be cut back as far as possible to a common supply (eg to the recirculating pipework or the pipework supplying a more frequently used upstream fitting) but preferably by removing the feeding 'T'</p> <p>Infrequently used equipment within a water system (ie not used for a period equal to or greater than seven days) should be included on the flushing regime</p> <p>Flush the outlets until the temperature at the outlet stabilises and is comparable to supply water and purge to drain</p> <p>Regularly use the outlets to minimise the risk from microbial growth in the peripheral parts of the water system, sustain and log this procedure once started</p> <p>For high risk populations, eg healthcare and care homes, more frequent flushing may be required as indicated by the risk assessment</p> | Weekly, or as indicated by the risk assessment |
| TMVs | <p>Risk assess whether the TMV fitting is required, and if not, remove</p> <p>Where needed, inspect, clean, descale and disinfect any strainers or filters associated with TMVs</p> <p>To maintain protection against scald risk, TMVs require regular routine maintenance carried out by competent persons in accordance with the manufacturer's instructions. There is further information in paragraphs 2.152– 2.168</p> | Annually or on a frequency defined by the risk assessment, taking account of any manufacturer's recommendations |
| Expansion vessels | <p>Where practical, flush through and purge to drain.</p> <p>Bladders should be changed according to the manufacturer's guidelines or as indicated by the risk assessment</p> | Monthly–six monthly, as indicated by the risk assessment |

Recommended Inspection Frequencies for Risk Systems

HSG274 Part 3. Appendix 3.1:

Checklist for recommended frequency of inspection for other risk systems

| System/service | Task | Frequency |
|--|--|--|
| Ultrasonic humidifiers/foggers and water misting systems | If the equipment is fitted with UV lights, check to ensure the effectiveness of the lamp (check to see if within working life) and clean filters | Six monthly or according to manufacturer's instructions |
| | Ensure automatic purge of residual water is functioning | As part of machinery shut down |
| | Clean and disinfect all wetted parts | As indicated by risk assessment |
| | Sampling for legionella | As indicated by risk assessment |
| Spray humidifiers | Clean and disinfect spray humidifiers and make-up tanks, including all wetted surfaces, descaling as necessary | Six monthly |
| | Confirm the operation of non-chemical water treatment (if present) | Weekly |
| Air washers, wet scrubbers, particle and trivial gas scrubbers | Clean and disinfect air washers, wet scrubbers, particle and trivial gas scrubbers and water storage tanks | As indicated by risk assessment |
| | Apply, monitor, and record the results of the water treatment | As indicated by risk assessment |
| Water softeners | Clean and disinfect resin and brine tank – check with the manufacturer what chemicals can be used to disinfect resin bed | As recommended by manufacturer |
| Emergency showers, eyebaths and face-wash fountains | Flush through and purge to drain ensuring three to five times the volume of water in the stagnant zone is drawn off | As indicated by risk assessment, but at least every six months |
| | Inspect water storage tanks (where fitted) | Monthly |
| | Clean and disinfect shower heads, nozzles, roses, 'Y' strainers, and water storage tanks (where fitted) | Quarterly, or more frequently, as indicated by the risk assessment |
| Sprinkler and hose reel systems | When witnessing tests of sprinkler blow-down and hose reels ensure that there is minimum risk of exposure to aerosols | As directed |

Recommended Inspection Frequencies for Risk Systems

| System/service | Task | Frequency |
|-------------------------------|--|---|
| Spa pools | Detailed HSE/PHE guidance on the management of spa pools is available in <i>Management of spa pools: Controlling the risks of infection</i> | |
| Whirlpool baths | Clean, flush and disinfect air channels Remove, flush and clean jets | As indicated by risk assessment |
| Horticultural misting systems | Clean and disinfect distribution pipework, spray heads and make-up tanks including all wetted surfaces, descaling as necessary | Quarterly or as indicated by risk assessment |
| Dental equipment | Drain down, clean, flush and disinfect all system components, pipework and bottles | Twice daily (typically at the start and finish of each working day). Disinfectant contact time as recommended by the manufacturer |
| | Clean storage bottles, rinse with distilled or Reverse Osmosis (RO) water, drain, and leave inverted overnight | Daily |
| | Take microbiological measurements – refer to <i>Decontamination Health Technical Memorandum 01-05: Decontamination in primary care dental practices</i> ⁵ | As indicated by risk assessment |
| Vehicle wash systems | Check and clean filtration systems, collection tanks and interceptor tanks and check treatment system A biocide programme should be in place and should be monitored and controlled similar to the standards required in cooling towers Clean and disinfect system and ensure sludge tanks are emptied | As indicated by risk assessment |
| | Sample for legionella | Initially to establish that control has been achieved and thereafter quarterly or as indicated by risk assessment |
| Fountains and water features | Clean and disinfect ponds, spray heads and make-up tanks including all wetted surfaces, descaling as necessary | As indicated by the risk assessment, and depending on condition |

Recommended Inspection Frequencies for Risk Systems

| System/service | Task | Frequency |
|----------------------------------|--|--|
| Industrial process water systems | <p>Conduct a risk assessment of each system, preferably using an assessment team comprising members knowledgeable in legionella management and control, as well as those familiar with the design and operation of the system</p> <p>Devise a control scheme based on this risk assessment</p> | Monitoring, inspection, and testing frequencies to be determined as indicated by the risk assessment |

Appendix 4

Glossary of Terms

Terms below relevant to domestic hot & cold Legionella risk assessment

| | |
|--------------------------|---|
| Aerosol | A suspension in a gaseous medium of solid particles, liquid particles or solid and liquid particles having negligible falling velocity. |
| Bacteria | (singular bacterium) a microscopic, unicellular (or more rarely multicellular) organism. |
| Biocide | A substance which kills micro-organisms. |
| Biofilm | A community of bacteria and other micro-organisms, embedded in a protective layer with entrained debris, attached to a surface. |
| Blow-down/bleed off | Water discharged from the system to control the concentration of salts or other impurities in the circulating water; usually expressed as a percentage of recirculating water flow. |
| Calorifier | An apparatus used for the transfer of heat to water in a vessel by indirect means, the source of heat being contained within a pipe or coil immersed in the water. |
| Chlorine Dioxide | A chemical used for microbiological control. |
| Cold water service (CWS) | Installation of plant, pipes and fitting in which cold water is stored, distributed and subsequently discharged. |
| Dead end/blind end | A length of pipe closed at one end through which no water passes. |
| Dead-leg | Pipes leading to a fitting through which water only passes when there is draw-off from the fitting. |
| Disinfection | A process which destroys or irreversibly inactivates micro-organisms and reduces their number to a non-hazardous level. |
| Distribution circuit | Pipe work which distributes water from hot or cold-water plant to one or more fittings/appliances. |
| Domestic water services | Hot and cold water intended for personal hygiene, culinary, drinking water or other domestic purposes. |
| Fouling | Organic growth or other deposits on heat transfer surfaces causing loss in efficiency. |
| Hot water service (HWS) | Installation of plant, pipes and fittings in which water is heated, distributed and subsequently discharged (not including cold water feed tank or cistern). |
| Legionnaires' disease | A form of pneumonia caused by Legionella bacteria. |
| Legionella | Type of aerobic bacterium which is found predominantly in warm water environments. (Singular of legionellae). |
| L. pneumophila | One of the causative organisms of Legionnaires' disease. |
| Legionellosis | Any illness caused by exposure to Legionella. |
| Pontiac fever | A disease caused by species of Legionella; an upper respiratory illness less severe than Legionnaires' disease. |
| Make-up water | Water which is added to a cooling water system to compensate for wastage (e.g. via system leaks), evaporative loss and bleed. |

Appendix 4

Glossary of Terms

| | |
|---------------------------|---|
| Micro-organism | An organism of microscopic size including bacteria, fungi and viruses. |
| Non-oxidising biocide | A non-oxidising biocide is one that functions by mechanisms other than oxidation, including interference with cell metabolism and structure. |
| Nutrient | A food source for micro-organisms. |
| Oxidising biocide | Agents capable of oxidising organic matter, e.g. cell material, enzymes or proteins which are associated with microbiological populations resulting in death of micro-organism, the most commonly used oxidising biocides are based on chlorine or bromine (halogens) which liberate hypochlorous or hypobromous acids on hydrolysis in water. The exception is chlorine dioxide, a gas which does not hydrolyse but which functions in the same way. |
| Pasteurisation | Heat treatment to destroy micro-organism usually at high temperature. |
| Risk assessment | Identifying and assessing the risk from Legionellosis from work activities and water sources on premises and determining any necessary precautionary measures. |
| Scale inhibitors | Chemicals used to control scale. They function by holding up the precipitation process and/or distorting the crystal shape, thus preventing the build-up of a hard adherent scale. |
| Sero-group | A sub-group of the main species. |
| Sentinel taps | For a hot water services – the first and last taps on a recirculating system. For cold water systems (or non-recirculating hot water systems), the nearest and furthest taps from the storage tank. The choice of sentinel taps may also include other taps which are considered to represent a particular risk. |
| Sessile | Aquatic micro-organisms adhering to a surface normally as part of a biofilm. |
| Sludge | A general term for soft mud-like deposits found on heat transfer surfaces or other important section of a cooling system. Also found at the base of calorifiers and cold water storage tanks. |
| Shunt pump | A circulation pump fitted to hot water service/plant to overcome the temperature stratification of the stored water. |
| Slime | A mucus-like exudates which covers a surface produced by some micro-organisms. |
| Stagnation | The condition where water ceases to flow and is therefore liable to microbiological growth. |
| Thermal disinfection | Heat treatment to disinfect a system. |
| Thermostatic mixing valve | Mixing valve in which the temperature at the outlet is pre-selected and controlled automatically by the valve. |
| Total viable counts (TVC) | The total number of culturable bacteria (per volume or area) in a given sample (does not include Legionella). |

Appendix 4

Glossary of Terms

References

In preparing this risk assessment, we have referred to the following documents, which should be consulted for further information:

- Approved Code of Practice & Guidance: 'Legionnaires' disease - the control of legionella bacteria in water systems' (L8, Fourth Edition). Health and Safety Executive 2013.
- HSG 274 Parts 1, 2 & 3 Legionnaires Disease Technical Guidance: HSE 2013 & 2014.
- Health Technical Memorandum 04-01 – The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems. Published for NHS Estates by TSO 2016.
- Control of Substances Hazardous to Health Regulations 2002 (COSHH). (6th Edition) Health and Safety Executive 2013.
- CIBSE Technical Memorandum (TM13): Minimising the risk of Legionnaires' disease. Chartered Institute of Building Services Engineers 2013.
- Notification of Cooling Towers and Evaporative Condensers Regulations 1992.
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR).
- The Safety Representatives and Safety Committees Regulations 1977 and the Health and Safety (Consultation with Employees) Regulations 1996.
- BS EN 806-5:2012: Specifications for installations inside buildings conveying water for human consumption. Operation and maintenance.
- BS 8558:2011: Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages. Complementary guidance to BS EN 806.
- Water fittings and Materials Directory. Water Regulations Advisory Scheme.
- The Water Supply (Water Fittings) Regulations 1999. The Stationery Office Limited, 1999.
- The Water Regulations Guide. Water Regulations Advisory Scheme, 2000.
- British Standard BS 8580-1: 2019 Risk Assessments for Legionella Control. British Standards Institution 2019
- HSG 282 Control of legionella and other infectious agents in spa-pool systems HSE 2017
- HSG 65: Managing for health and safety. HSE 2013
- HSG 220: Health and safety in care homes

HSG274 Part 2. Appendix 2.2: Legionella Written Control Scheme

Appendix 2.2 Legionella written control scheme

1 The risk from exposure will normally be controlled by measures which do not allow the proliferation of legionella bacteria in the system. Once the risk is identified and assessed, a written control scheme should be prepared, implemented and properly managed for preventing or controlling legionella.

2 The scheme should specify the various control measures, how to use and carry out those measures, describe the water treatment regimes and the correct operation of the water system. The scheme should be specific and tailored to the system covered by the risk assessment. Along with the guidance in this document, this appendix summarises the information to include in a legionella written control scheme, ie:

- purpose;
- scope;
- risk assessment;
- management structure:
 - dutyholder;
 - responsible person(s) and communication pathways;
 - training;
 - allocation of responsibilities, ie to the dutyholder, responsible person(s) and water treatment service provider;
- up-to-date schematic plan showing the layout of the system(s) and its location within and around the premises – this should identify piping routes, storage and header tanks, calorifiers and relevant items of plant, especially water softeners, filters, strainers, pumps and all water outlets;
- the correct and safe operation of the system;
- precautions in place to prevent or minimise risk associated with the system;
- analytical tests, including microbiological testing, other operational checks, inspections and calibrations to be carried out, their frequency and any resulting corrective actions;
- remedial action to be taken in the event that the scheme is shown not to be effective, including control scheme reviews and any modifications made;
- health and safety information, including details on storage, handling, use and disposal of any chemical used in both the treatment of the system and testing of the system water;
- incident plan, which covers the following situations:
 - major plant failure, eg chemical system failure;
 - very high levels or repeat positive water analyses for legionella;
 - an outbreak of legionellosis, suspected or confirmed as being centred at the site;
 - an outbreak of legionellosis, the exact source of which has yet to be confirmed, but which is believed to be centred in an area which includes the site.

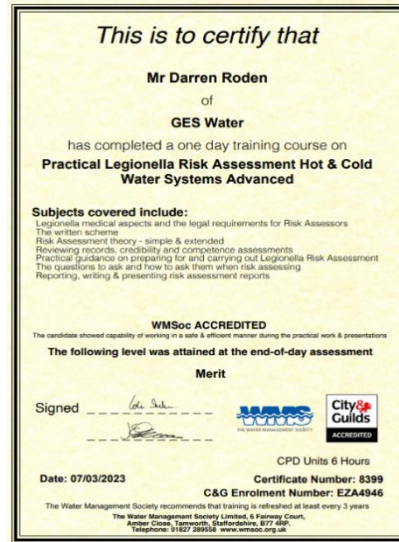
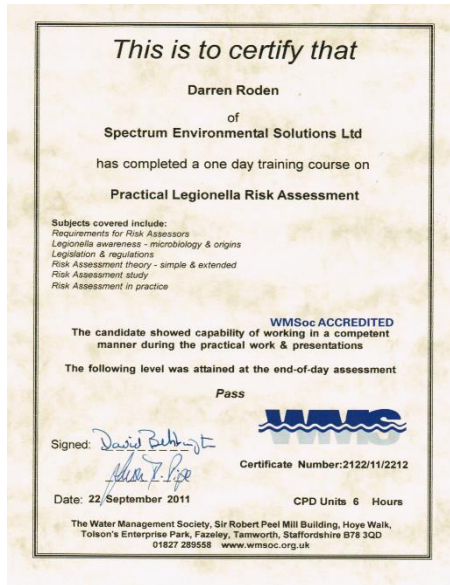
Part Three Appendix 6 – Population Susceptibility, Risk Categories

| Description of Persons on Site | Risk Category |
|--|----------------------|
| School Pupils | Low |
| College/University Pupils | Normal |
| Contractors working on water systems | Normal |
| General Public | Normal |
| Site Personnel | Normal |
| Children up to 4 years old | Low |
| Outpatients | High |
| Elderly Persons | High |
| Drug / Alcohol Addicts | High |
| Immuno-suppressed | Very High |
| High proportion of personnel over 45 | High |
| People with poor respiratory condition | Very High |
| Intensive Care Patients | Very High |
| Transplant / cancer patients | Very High |
| Smokers | High |
| OCPD / respiratory conditions | Very High |

When should the risk assessment be reviewed?

1. If there is a change to the system or its use
2. The use of the building in which the system is installed
3. New information about risks and control measures
4. Results of checks that indicate control measures are no longer effective (i.e. on-going non-compliant temperatures and /or sampling results).
5. Changes to key personnel
6. A case of legionnaires disease attached to the system
7. Or, as advised in Section 3 of this document

Appendix 8 Assessor Competency Certificate & Impartiality Agreement



Assessor: Darren Roden

Bio

Darren is a Legionella Risk Assessor with 20 years experience in the field of water hygiene and Legionella Risk Assessments in commercial sectors.

Darren started carrying out Risk Assessments for GES Water as part of his job role in 2016.

Experience

- 12 years experience as a Legionella Risk Assessor
- Attendance at many training courses on legionella, including sessions held by the Water Management Society

Qualifications

- Water Management Society advanced Legionella risk assessment course in March 2023
- Water Management Society HTM 04-01 Water Hygiene Training

Managing and controlling risk of waterborne pathogens in healthcare water systems.

Quality Checked On: 6 September 2024

By: G Davis

Signature: *G Davis*

A. Impartiality, Integrity and Confidentiality of Legionella Risk Assessments.

General Environmental Services (hereinafter known as GES), its Directors, Managers, Staff and other persons involved in the process fully understand the importance of Impartiality in undertaking any Certification Activities.

GES has identified activities (as listed) which may result in a conflict of interest or pose a threat to impartiality through departments, Finance, Operations and Sales.

Risk Assessment for Legionella control (including);

- Cold Water Storage Tank(s)
- Calorifiers
- Point of use water heaters, header tanks
- Domestic hot and cold water systems
- Temperature measurement
- Re-surveys of a premises already surveyed
- Other systems including but not limited to ultrasonic humidifiers/foggers and water misting systems, spray humidifiers, air washers and wet scrubbers, water softeners, emergency showers and eye wash sprays, sprinkler and hose reel systems, lathe and machine tool coolant systems, jacuzzis and spa baths, horticultural misting systems, dental equipment, car/bus washes, indoor fountains and water features, reverse osmosis, chlorine dioxide systems, ultra-violet systems, AHU's, filters, corrosion inhibitor dispenser, rain water harvesting, ice making machines, dishwashers, fire control systems, plating area process water/rinse tanks, heating and chilled water systems and any other water systems that may encourage bacterial growth.

Identified threats for example,

- Sales, Operations, Finance putting pressure on Risk Assessors to report works favourable to the relevant department which would result in works being carried out by GES. Potentially conflicting activities including but not limited to:
 - Tank clean and disinfection
 - Training
 - Remedial works
 - Dead leg removal
 - Tap descales
 - Shower head and hose cleaning and disinfection
 - Temperature monitoring
- Reporting potential remedial works over and above the Risk Assessment to Sales in order for sales figures to be increased.
- Finance advising Risk Assessors that figures are low and to ensure that they report any potential extra works over and above the Risk Assessment.

Safeguards have been put in place to ensure that this does not happen, Impartiality, Integrity and Confidentiality now forms part of all departmental meeting agenda items, all staff are to sign the Impartiality, Integrity and Confidentiality of Legionella Risk Assessments document.

Management will also conduct an Annual Risk Assessment on Impartiality and Conflict of Interest, which is reviewed by the Compliance committee. This is an independent committee made up of members representing our key interests, this annual assessment is recorded below (Part B) and confirmed each year.

Assessor Competency Certificate & Impartiality Agreement

Conflict of interest and objectivity is addressed further through annual training sessions and contractually binding agreements to ensure that all activities undertaken throughout the certification process are conducted in an independent and impartial manner.

It is paramount that the Compliance Team, in the process of conducting a Legionella Risk Assessment refrain from carrying out additional chargeable works that come outside the mandate of a Legionella Risk Assessment.

Marketing and publicity whether done through social media, our website, mail shots, or any other format must remain impartial. And prior to being distributed be checked by senior management to ensure that the content does not imply the inherent assumption associated, this being that the departments of GES can provide services throughout the assessment and remedial processes.

Ensuring that departments outside the "Compliance Team" do not under any circumstances try and affect the impartiality of any Legionella Risk Assessor and any resulting conclusions therein, safeguards are in place where should an assessor be pressured by any other member of GES staff to influence findings and recommendations to immediately report to the Technical Manager – Gareth Davis.

GES aim to inspire confidence in its management certification to its clients and the public at large by:

- being impartial,
- employing competent personnel,
- being responsive to complaints,
- being open,
- providing access to relevant information gathered,
- fairness,
- transparency of processes,
- maintaining confidentiality,
- having an anti-bribery policy,
- representatives of the compliance committee carry out impartiality audits annually.

All staff must sign the Confidentiality Agreement (WD134) agreeing to the principles of Impartiality and confirming that knowledge of site will be confined to the findings of the Risk Assessment. Any details discovered during any activity completed by the company visit will be kept in confidence and not discussed or communicated with ANY party that may have an interest in any works that may arise from their operations.

By signing this agreement all staff agree that should an occurrence arise that they feel their integrity has been compromised, they are to report the incident to the Managing Director immediately.

Signed..... *D. Roden* Print Name: *DARREN RODEN* Date: *31/8/23*

Ar

Note: See below for annual review of risk to impartiality and conflict of interest declaration.

Appendix 9

Legionella Control Association Membership Certificate



Legionella Control Association
KEEPING WATER SYSTEMS SAFE

Legionella Control Association

A Code of Conduct for Service Providers

Certificate of Registration

This is to certify that the following company has submitted a registration under the Conditions of Compliance as laid out in the LCA's Code of Conduct for Service Providers

Name of Company: General Environmental Services Limited

Registration Number: 2001/1239 Certificate valid until: 31st August 2025

Registration under the following services categories:

- (1) Legionella Risk Assessment Services**
 - 1.1 Hot and Cold Water Systems Risk Assessment
 - 1.3 Process and Other Systems Risk Assessment
 - 1.4 Healthcare Risk Assessment
- (3) Hot and Cold Water Monitoring and Inspection Services**
- (4) Cleaning and Disinfection Services**
 - 4.1 Hot and Cold Water Systems Cleaning and Disinfection
 - 4.2 Evaporative Cooling Systems Cleaning and Disinfection
 - 4.3 Process and Other Systems Cleaning and Disinfection
- (6) Training Services**
- (7) Legionella Monitoring Services**
 - 7.1 Sampling
 - 7.4 Interpretation of Analysis
- (8) Plant and Equipment Services**
 - 8.3 Servicing/maintenance
 - 8.4 Refurbishment

This Certificate is only valid if the Company named is listed on the LCA website www.legionellacontrol.org.uk/directory.php



THE WATER MANAGEMENT SOCIETY

Signed: 



Chairman, Executive Committee

Certificate Secretary



British Chemical Association

Legionella Control Association Limited. www.legionellacontrol.org.uk

Registered in England and Wales No. 8502723

The legal duty to comply with relevant health and safety legislation (including avoidance or control of risk to exposure to Legionella bacteria) rests solely with the statutory dutyholder, being either the employer or the person in control of the premises or systems where any relevant risk is present, and this cannot be delegated. Specific functions (e.g. carrying out risk assessment) can be delegated and the Legionella Control Association (LCA) Code of Conduct is designed to help service providers, who also have duties under health and safety legislation, to establish appropriate management systems for the prevention or control of risk from Legionella bacteria. The LCA assesses the management systems of LCA members upon initial registration, reviews annually upon re-registration, and re-assesses by annual company audits. The LCA cannot and does not carry out other regular supervision of its members' commitments to the Code of Conduct nor their compliance with other LCA guidelines. A valid LCA certificate of registration (which is only valid if the Company named is listed on the LCA website www.legionellacontrol.org.uk/directory.php) confirms only that a service provider has satisfied LCA requirements at registration and its most recent company audit. It does not confirm the service provider's actual or continuing compliance with their commitments to the LCA Code of Conduct and/or other LCA guidelines. The LCA does not approve specific products or services as being effective in controlling Legionella or verify the competence of service providers' staff and sub-contractors, which is the duty of the service provider and the statutory dutyholder. The LCA accepts no liability for any omission or any act carried out in reliance on the LCA Code of Conduct or other LCA guidelines, or any loss or damage resulting from non-compliance with such documents.