intertek
Total Quality. Assured.

LEGIONELLA CONTROL

OEUK HSE Conference 2026 – Trust, Transparency, Transform

Julie Hart BSc BioMed

CONTENT

- Legionella from Natural to Built Environment
- Legionella Growth and Legionnaire's Disease
- Legionella Management
- Offshore Water Systems
- Written Scheme of Control

LEGIONELLA FROM OUR NATURAL TO BUILT ENVIRONMENT

- Legionella bacteria are common in the natural environment, and are found in rivers, lochs and reservoirs, generally in low number due to competition with other species.

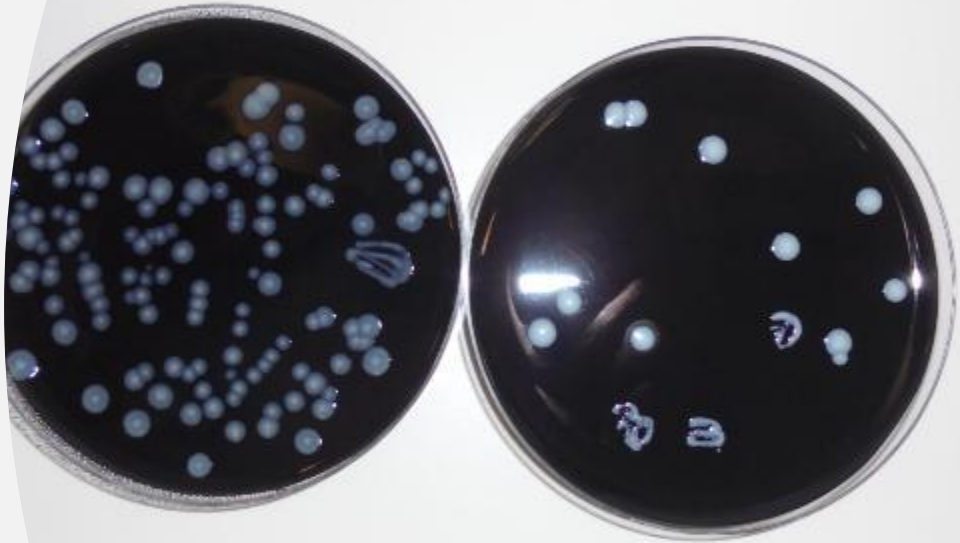
- Legionella are a great example how a species can thrive in our built environment when they find the right conditions for growth.

- If the bacteria get into an artificial water systems that support their metabolic needs, they can pose a health risk.

- Exposure to the bacteria by inhalation of water aerosols generated from contaminated systems is the key route of infection. Cooling towers, evaporative condensers, hot & cold water systems and any plant and water systems with temperatures between 20-60^{o}C can be a source.

FOR OPTIMUM GROWTH

- pH 5.1 to 9.1
- Dissolved oxygen (0.2 - 6.2ppm)
- Temperature 20°C to 50°C (optimum 36°C)
- Nutrients
- Iron source (corrosion)
    - Ferric oxide can give a 10,000 to 100,000 times increase in growth rate
- Scale (Ca & Mg salts)
- Biofilm (L Cysteine)
- Moisture - water



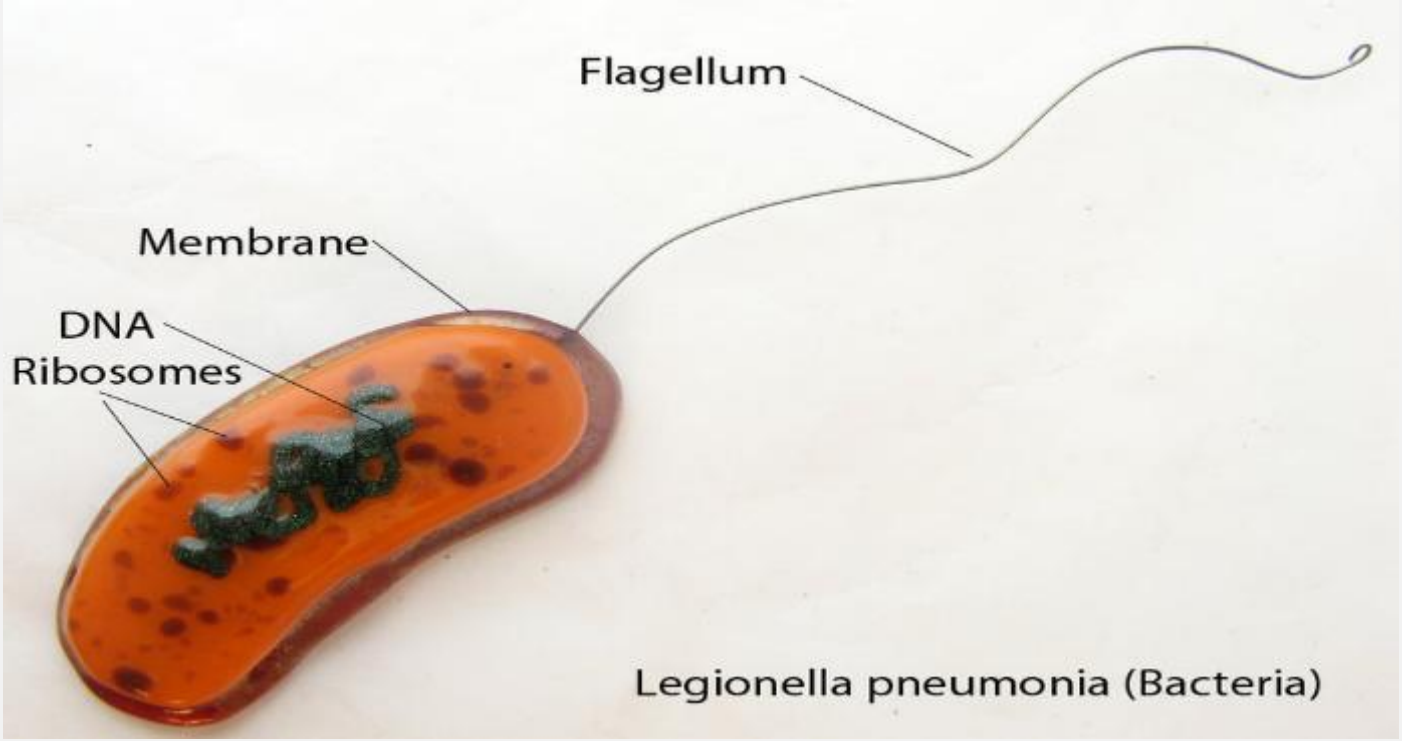
MULTIPLICATION OF *LEGIONELLA PNEUMOPHILA*

- Presence of bacterium
- Multiplication of bacterium
  - Food source (sludge, slime)
  - Biofilm
  - Temperature range
  - Stagnant/low flow, stop/start areas
- Aerosol generation
- Inhalation of aerosol
- Susceptible person

If all are present a case or a larger outbreak could occur.

Symptoms set in 2-10 days after infection – chest infection, cough, fever, lack of energy.

LEGIONELLA BACTERIUM

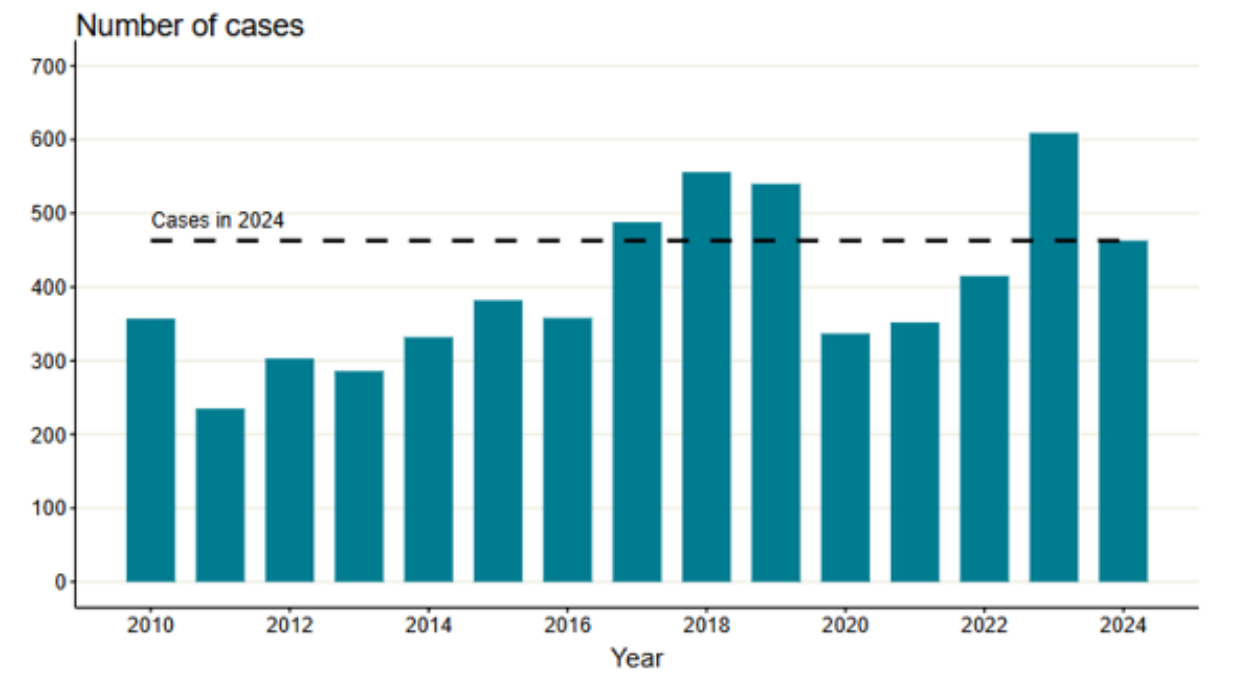


LEGIONNAIRES' DISEASE CASES BY CAUSATIVE ORGANISM REPORTED IN SCOTLAND, 2017-2024

Year	2017 (% Total of Cases)	2018 (% Total of Cases)	2019 (% Total of Cases)	2020 (% Total of Cases)	2021 (% Total of Cases)	2022 (% Total of Cases)	2023 (% Total of Cases)	2024 (% Total of Cases)
L. Pneumophila Sg1	27 (77.1)	29 (78.4)	27 (77.1)	15 (77.1)	6 (37.5)	32 (72.7)	38 (71.7)	37(64.9
L. Pneumophila Sg 2-14	2 (5.7)	0 (0.0)	2 (5.7)	0 (0.0)	0 (0.0)	1 (2.3)	4 (7.5)	0 (0.0)
L. Pneumophila Sg Unknown	1 (2.9)	3 (8.1)	4 (11.4)	2 (10.0)	1 (6.3)	2 (4.5)	3 (5.7)	3 (5.3)
Legionella Species (non-pneumophila, non-longbeachae)	4 (11.4)	4 (10.8)	1 (2.9)	3 (15.0)	5 (31.3)	6 (13.6)	6 (11.3)	9 (15.8)
L. Longbeachae	1 (2.9)	1 (2.7)	1 (2.9)	0 (0.0)	4 (25.0)	3 (6.8)	3 (5.7)	8 (14.0)

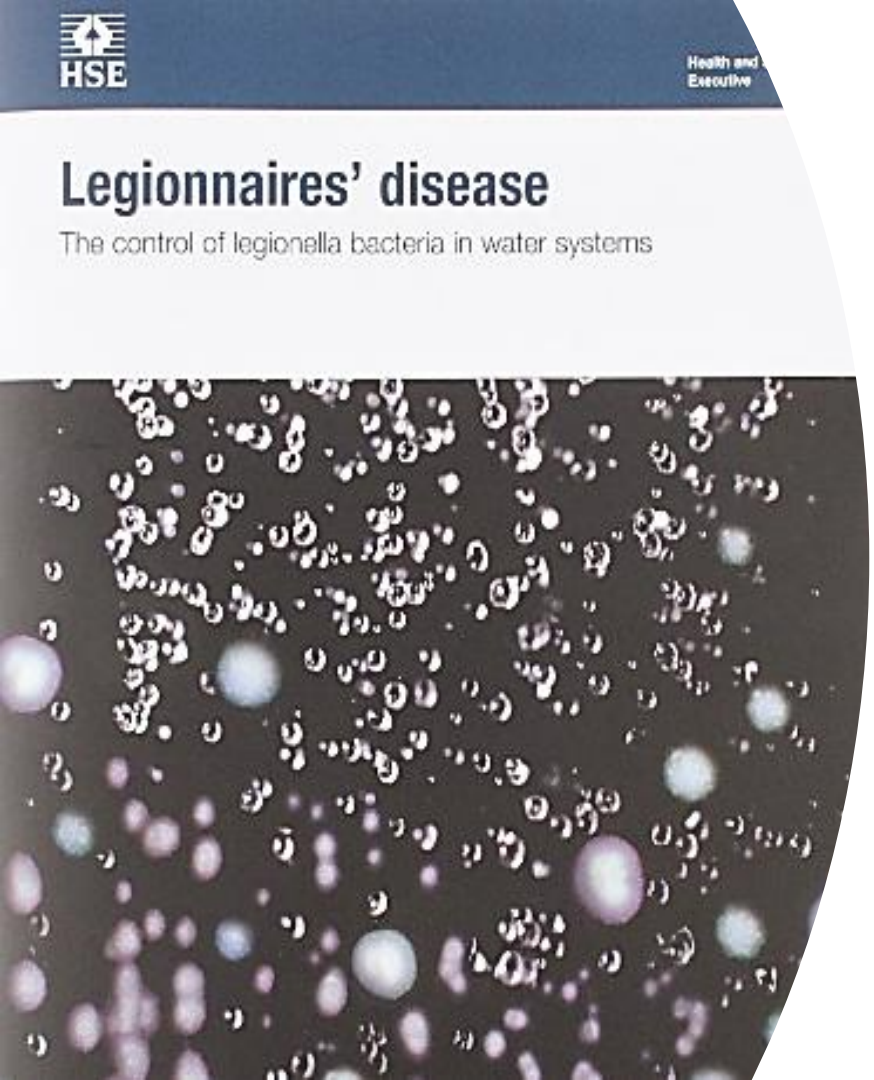
Source: PHS Legionella Enhanced Surveillance System, ECOSS

CONFIRMED CASES OF LEGIONNAIRES DISEASE BY YEAR OF SYMPTOM ONSET, ENGLAND AND WALES 2010-2024



It should be noted that during June-August, the most cases are observed due to higher ambient temperatures

Source:PHS Legionella Enhanced Surveillance System, ECOSS



"LEGIONNAIRES' DISEASE: THE CONTROL OF LEGIONELLA BACTERIA IN WATER SYSTEMS" (L8)

Prosecutions would fall under

- HSWA 1974 sections 2, 3, 4 & 6
- COSHH 2002 Regulations 6, 7, 8, 9 & 12
- MHSWR 1999

- L8 is a combined **approved code of practice** and guidance effective from January 2001

- Updated version from Dec 2013 is in 4 separate sections;
  - Legislation – L8
  - Cooling Towers – Technical Doc – HSG 274 Part 1
  - Hot & Cold Water Systems – Technical Doc – HSG 274 Part 2
  - Other Systems – HSG Part 3
  - HSG 282 – Spa Pool Systems – Released 2017

- Legionnaires' disease is reportable buy the clinicians and a strict RIDDOR investigation is likely

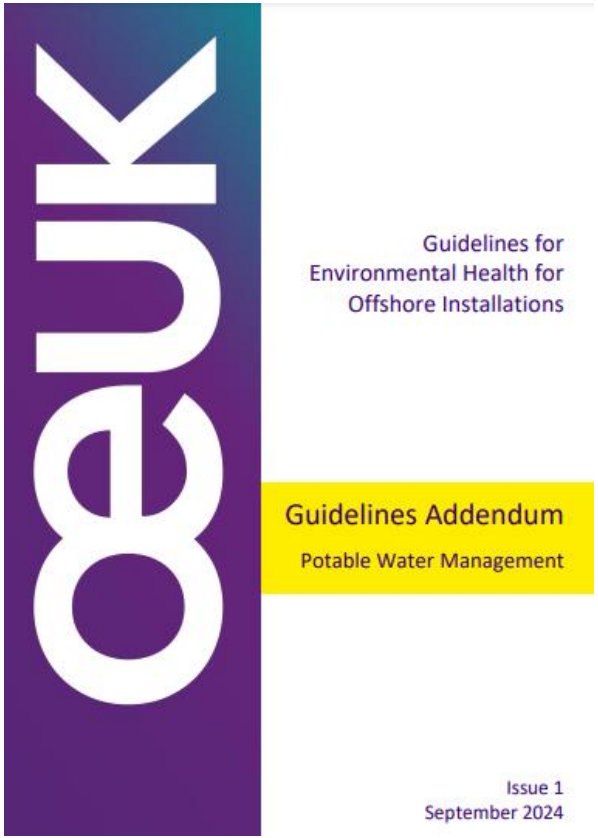
OFFSHORE ENERGY UK 2024

Focus on Potable Water Management

Legionella Control (2 yearly Legionella Risk Assessment)

Highlights the risk from other water systems

Other Guidance from: World Health Organisation, Maritime Coastguard Association, International Maritime Organisation and other industry bodies

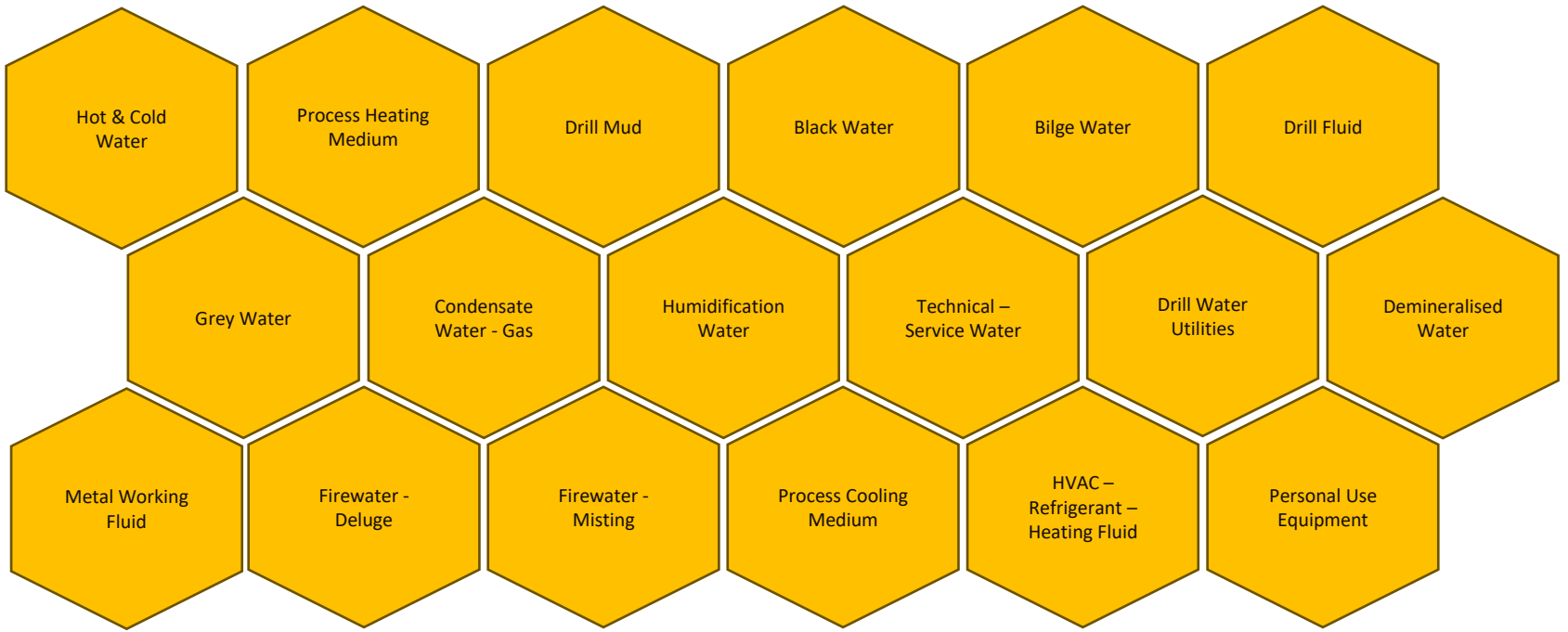


DUTY HOLDERS – ACTION REQUIRED

Duty holders are required to assess the risks from legionella bacteria within their water systems and put in place a scheme to prevent or control the risk

- Appoint a competent person to **be managerially responsible** for this
- Ensure that **the Legionella Risk Assessment has been reviewed** within the past two years (OEUK)
- Have a **Written Scheme of Control** for preventing or controlling the risk
- **Monitor control parameters** from the water systems
- Ensure **successful completion of remedial actions i**dentified by the risk assessment and keep a record of these implementations

HOT & COLD SYSTEMS & OTHER SYSTEMS FOR CONSIDERATION



This list is not exhaustive, and any water system capable of producing an aerosol, even if only during maintenance or failure, should be risk assessed

WHAT SHOULD THE WRITTEN SCHEME COVER?

- Introduction
- Aim
- Scope
- Responsible people & duties
- Description of systems cover by the scope
- Water Treatment Programme
- Source of P&IDs
- PMs List with Task Title & Reports
- Schedule/Table of routine monitoring Tasks
- Sampling Plans – labs submission details
- Legionella Risk Assessment and Reviews
- Task/Compliance Spec/Location/Frequency/Who
- Record keeping – where results are saved
- Out of Spec results – Escalation Plan
- Fault Logs
- Common Faults and Remedy
- Calibration Records
- Training Requirements & Records
- Remedial Action Management Tracker
- Method Statements for all tasks – risk assessment for tasks
- Annual Audit of Control task Data (Checklist Available from HSE)

The Written Scheme is the site-specific control philosophy for monitoring Legionella Control parameters .

Contact Details for Intertek Aberdeen

Health & Hygiene Department:
Reception: +44 (0) 1224 708500
Email: aberdeen.piamicrohealth@intertek.com

Julie.Hart@Intertek.com
Andrew.Russell@Intertek.com
Gavin.Riley@Intertek.com