



## TECHNICAL BULLETIN

# Legionella

**Analysis for:**  
*Legionella*

**Limit of Reporting:**  
<10 cfu/1mL

**Components:**  
*L. pneumophila*  
*L. species*

**Sampling Requirements:**

- Sterile 600mL PET bottles
- Air gap essential
- Transport & Store at 4°C
- Transport in individual snap-lock bags
- Process within 6 hrs of collection (preferable), up to max 24 hrs (AS/NZS 2031:2001)

*“The AWQC is the only laboratory in South Australia to offer a rapid DNA- based Legionella assay.....”*

### **LEGIONELLA AND LEGIONNAIRE’S DISEASE**

The outbreak of pneumonia amongst American ex-servicemen attending a bicentennial convention in a Philadelphia hotel in 1976 resulted in the recognition and description of Legionnaires’ Disease (Legionellosis) and the discovery of a bacterium later named *Legionella pneumophila*.

*Legionella* are common in industrial and environmental water sources, existing as part of biofilms or in sediments and are often found to co-exist with protozoa and ciliates. *Legionella* species are responsible for sporadic and outbreak cases of atypical pneumonia (Legionellosis) and a lesser form of infection known as Pontiac Fever, which is undiagnosed in many instances.

Efforts to control the spread of Legionnaire’s Disease have primarily concentrated on stopping the potential of transmission by controlling the multiplication of *Legionella* in water sources. Chemical dosing of water sources is the primary measure employed, although there are other techniques available.

### **METHODOLOGY**

Current testing for *Legionella* relies upon the use of traditional methodology that is time consuming. The AWQC has developed a method that couples standard bacterial culture techniques with DNA technology to allow more rapid detection. Recently, the developed method was compared to the current standard method (AS/NZS 3896:1998) in an extensive field evaluation involving over 140 samples. The results indicate that the newly developed rapid method is as accurate as the

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standard method, but has a superior advantage in speed, with confirmed *Legionella pneumophila* counts available in as little as 3 days compared to 5-7 days by the standard method. These results have recently been published in one of the premier environmental journals, Applied and Environmental Microbiology.

### **IMPORTANCE OF THE NEW TEST**

The greatest advantage of the rapid test is the speed at which results can be delivered. Typically, depending on species, the turn-around-time is reduced by at least 3-4 days. The delivery of a timely result will therefore aid in the administration of remedial action much sooner than previously possible and potentially stop contaminated sources continuing to spread *Legionella*. Additionally, because the assay tests the DNA of the bacteria, it is highly sensitive and specific and reduces the chances of reporting an erroneous result.

### **LEGIONELLA CONTROL AT THE AWQC**

The AWQC is the only laboratory in South Australia to offer a rapid DNA-based *Legionella* assay that has been compared to standard methods and published in an internationally renowned and peer-reviewed scientific journal. To complement this service, the AWQC can aid in the formulation of Risk Management Plans and auditing of Risk Management Plans dealing with *Legionella* and *Legionella* control. The AWQC also offers a comprehensive suite of microbiological and chemical analyses that can assist in determining levels of fouling and corrosion in water systems.

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