Phigenics provides a new class of water management services for commercial, institutional and manufacturing facilities that enables facility owners and managers, infection prevention and environmental health and safety personnel to improve water safety, reduce water processing costs and comply with best practice standards and regulations. Following is a summary of Phigenics Legionella testing services.

1. Legionella testing services
2. Other testing services
Phigenics provides comprehensive *Legionella* testing for all water systems found in commercial, institutional, and industrial facilities. The Phigenics Validation Test (PVT) delivers the fastest & most accurate *Legionella* testing service by applying the Phigenics patented TimeZero test method for quantitative measurement of viable *Legionella* and total heterotrophic aerobic bacteria. Results are useful for validation of biological hazard control in potable and utility water systems.

**Benefits**

Compared to other methods, the PVT using the TimeZero method is:

- **Faster** because culturing occurs at “time zero” (t = 0) and results are typically communicated 2-4 days after receipt in the lab
- **More accurate** because variations due to changes in water samples during shipment are entirely eliminated
- **More Comprehensive** because:
  - *Legionella* bacteria and total heterotrophic aerobic bacteria (THAB) are obtained from the same sample with one protocol
  - PVT test products include the Phigenics patented TimeZero method, the ISO 1173 spread plate method and the PCR method
  - Results are reported electronically with digital images and chain of custody records and are automatically archived in the Phigenics web-based analytics platform providing access to results at any time

**Faster and More Accurate**

This unique test is a “time zero” (t=0) dipslide format which means that the sample is inoculated immediately in the field and thereby eliminates inaccuracies due to bacterial growth or decline in water samples during transport to the laboratory. Other conventional tests, including the ISO 11731 *Legionella* test, are inoculated via spread plating after the drawn water sample is shipped to a laboratory. The delay due to shipping often causes inaccurate results due to sample holding time effects. In fact, scientific survey results show that a statistically-significant number of ISO 11731 spread plate analyses return a false-positive result.¹

Comprehensive
Legionella and Total Bacteria Results

The PVT, using the TimeZero method, has been proven reliable for determining viable cell concentrations of:

- *Legionella* pneumophila (serogroup 1 and 2-14)
- Non-pneumophila *Legionella* species
- Total heterotrophic aerobic bacteria (THAB)

Thorough Analytical Reporting, Digital Imaging & Chain of Custody

**Digital Image Record**
- Fast – Results in 2-4 days
- Microbial growth
- ID labels to establish chain of custody

**Comprehensive summary for all samples submitted in one easy to read table**

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**Phigenics Legionella Test Options**

**PVT** using the TimeZero test method, provides *Legionella* species and THAB where the inoculation occurs at “time zero” (t=0) and results are delivered in 2-4 days.

**PVT with ISO**, includes the TimeZero test method for *Legionella* species and THAB plus the *Legionella* ISO 11731 spread plate method.

**PVT Premium**, includes TimeZero test method for *Legionella* species and THAB, the *Legionella* 11731 ISO spread plate method, and PCR (a molecular marker negative screen).

**Other Tests:**

- **Legionella ISO 11731** (spread plate method) is available as a stand-alone test.
- **Legionella Swab Analysis** is available for tests of surfaces, such as plumbing fixtures.
Comparison of Phigenics PVT Products to Other Labs

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Phigenics Validation Tests</th>
<th>Tests from Other Labs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures Viable Legionella</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Inoculated at Time Zero (t=0)</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Inaccuracies from Water Transportation</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Time Required to Receive Reports</td>
<td>2-4 days*</td>
<td>10-14 days</td>
</tr>
<tr>
<td>Conforms to ISO 11731 Legionella Method</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Limit of Detection (CFU/ml)</td>
<td>10</td>
<td>1**</td>
</tr>
<tr>
<td>Reports L. pneumophila SG 1, Lp SG 2-14 and Legionella Species</td>
<td>YES</td>
<td>Variates</td>
</tr>
<tr>
<td>Measures Total Bacteria</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Molecular Marker Negative Screen</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>CDC ELITE Program Certification</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Several Lab Analyses in One Protocol</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Available On-Site Technical Support</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Comprehensive Reporting with Web-Based Data Management</td>
<td>YES</td>
<td>Variates</td>
</tr>
</tbody>
</table>

*From Receipt in Lab (can special order 2-day turnaround for PVT)
**The practical limit of quantification according to results published by the CDC is about 10 cfu/ml

Phigenics Laboratory Certifications

Phigenics Analytical Services Laboratories are certified as proficient in the Environmental Legionella Isolation Techniques Evaluation (ELITE) program administered by the Centers for Disease Control and Prevention (CDC) for using the Phigenics patented PVT Test and the ISO 11731 spread plate method. Phigenics has passed every proficiency test since the beginning of the CDC ELITE program with 100% correct scores. Phigenics is an EPA-NELAP certified laboratory for the analysis of drinking water and provides a wide range of other testing services for bio hazards such as Pseudomonas, Stenotrophomonas, Acinetobacter, Mycobacterium, Aspergillus and Fusarium. Phigenics also provides complete testing services required by the Safe Drinking Water Act.

Phigenics. Smart Water Management.
Call us today at 630.717.7546 or go to www.phigenics.com/smartwater