

# Rapid qPCR On-site Legionella Testing

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## Challenge

Legionella bacteria thrive in cooling systems:

- Temperature: 70-115°F (20-45°C)
- pH: 5-8.5
- Stagnant conditions promote biofilms, feeding biogrowth
- Natural habitat: ~10 cfu/ml
- Cooling systems: 1MM+ cfu/ml

### Natural habitat

~10 cfu/ml

### Cooling systems

↑ 1,000,000 cfu/ml

Pitfalls of traditional Legionella testing:

- **Slow:** 7-14 days to obtain results
- **Inaccurate:** 62.5% of lab cultures show false negatives due to degradation in transport

## Solution

Genomadix Cube®™ qPCR Legionella System relies in technology commonly used in medical fields (ex. COVID).

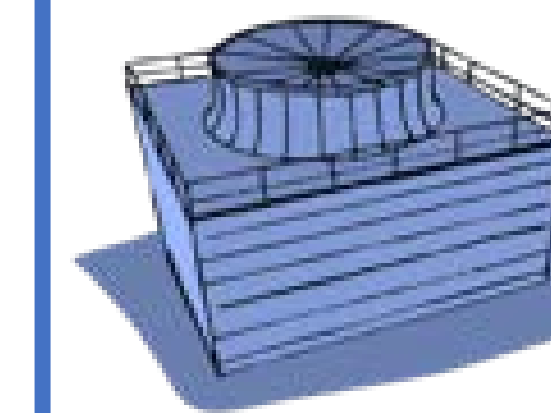


qPCR (polymerase chain reaction) testing works on the principle of “photocopier” instead of culture:

- **Fast:** clearly identified in only 40 minutes
- **Accurate:** filtration step removes false positives from dead bacteria
- **Easy:** no special training required

## Results

Industrial cooling system avoided \$2MM outage



HEX leak caused amine discharge into tower. High TOC and ideal growth conditions created MB concern. Plant had to take unplanned outage.



Water samples collected for LDB analysis at traditional lab. Turnaround one week.



Inability to maintain FAC residual due to HEX leak. Plant forced to remain down until elimination of LDB risk confirmed.



Genomadix Cube qPCR Legionella System obtained results in one hour. This allowed plant to start up one week sooner, avoiding \$2MM outage cost.