

Leak detection



Hydroacoustic Leak Detection with Air on Body Corporate Sub-Meter Water Lines and Main BC Lines

Process Overview

1. Site Assessment and Preparation

- Inspect and document the layout of the Body Corporate (BC) water supply system, including sub-metered and main BC lines.
- Identify and isolate sections for testing.
- Obtain necessary permissions before commencing leak detection.

2. Initial Leak Detection Using Hydroacoustic Methods

- Shut off the water supply and introduce pressurised air into the pipeline.

- Use hydroacoustic listening devices to detect abnormal sounds (hissing, gurgling, whistling) that may indicate leaks.
- Mark suspected leak locations for further investigation.

3. Pinpointing Leak Locations (Drilling if Required)

- Drill small holes at suspected leak sites to confirm pinpoint accuracy if necessary.
- Utilise specialised probes to assess water leakage at drilled points.
- Properly seal drilled holes after assessment.

4. Secondary Leak Confirmation via Line Tracing

- Employ electromagnetic or gas tracing techniques to verify leak locations.

Leak detection

- Cross-check results with hydroacoustic findings for accuracy.

5. Report and Documentation

- Provide a comprehensive report detailing detected leaks, severity, and recommended repairs.
- Include photographic and acoustic evidence where applicable.

6. Completion and Invoicing

- An invoice will be issued regardless of whether a leak is found, as the service is for detection rather than guaranteed results.
- Clients are responsible for arranging any necessary repairs following detection.

Issues and Limitations

Pipe Material and Depth

- Acoustic signals may be dampened by certain materials such as PVC or poly pipes, making leaks harder to detect.

Background Noise

- External noise from traffic, machinery, or running water may interfere with acoustic readings.

Complex Pipe Networks

- Older or undocumented systems with unmarked branches may complicate tracing efforts.

Residual Water in Lines

- Small amounts of residual water can create false acoustic signals, affecting accuracy.

Air Leak vs. Water Leak

- Pressurised air behaves differently than water in pipelines, and minor leaks may not always be detected.

Access Restrictions

- Some locations may be difficult to reach without excavation, requiring additional permissions or alternative detection methods.

Interference from Residents

- Household activities (e.g., running taps, flushing toilets) can introduce noise, making detection more challenging.

- Scheduling detection during low-usage periods is recommended. In emergencies, residents should follow instructions to minimise noise.

Ground and Soil Conditions

- Soil type, moisture levels, and underground obstructions (e.g., rocks, roots) can impact sound transmission and leak detection effectiveness.
- Loose or sandy soil absorbs sound, while compacted or clay-heavy soil can distort acoustic signals.

Limited Detection Range

- Hydroacoustic methods have a restricted range, meaning leaks far from the listening device may not be identified.
- Large-diameter pipes or extensive pipeline sections may require multiple test points for thorough coverage.

By following this structured approach, hydroacoustic leak detection efficiently identifies issues in BC water lines while acknowledging the potential limitations that may affect results.