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# Water Leak Detection Course

## **Water Leak Detection- Course Description**

This course is designed to provide participants with the knowledge in the practices of water leak detection and correlation methods. Students will learn about the causes and impact of leaks, as well as the evaluation of pipe leakage. Students will be instructed in the basics and background theory of leak detection to better utilize advanced correlation techniques. Various methods and equipment will be demonstrated and used to accurately pinpointing leaks in all types of water mains.

**Course Length:** 2 days - classroom each morning and field work each afternoon.

**Hours of contact time:** 15 hours over 2 days

**CEU's:** To be determined

**Training method:** Classroom supported with computer and Field Work

**Learning objectives:** Students will learn the methodology and techniques available to detect leaks in water mains to reduce unaccounted for water loss. Participants will also learn about which type of equipment would be best suited to identify and find leaks in a water system. Basic acoustic theory of sound waves, including frequency and wavelength will be covered in order for students to have a better understanding of leak noise and it's application to more advanced correlation methods. The increased knowledge of locating leaks, with emphasis on correlation, will improve the student's success of finding leaks in the field.

## **Specific knowledge:**

- The importance of leak detection
- Causes and impact of leaks
- System Assessment
- Methods for locating leaks and breaks
- How to assess for leaks using correlation survey
- Fundamentals of correlation for leak detection
- Field issues encountered in leak detection
- Types of sensors and when to use them
- How to do a velocity measurement
- Types of pipes and related leak correlation issues
- Advanced correlation
  - Frequency
  - Coherence
  - PVC Large Diameter Pipes
  - PVC Repairs
- Case Studies



## Water Leak Detection Course

### **Specific skills:**

- Set up for leak detection using acoustic and correlation
- How to listen for a leak
- Selecting and connecting the correct transducer for the pipe type
- Measuring distance for the leak
- Entering parameters for a correlation
- Correlating a leak
- Adjusting for coherence
- Use of software & hardware
- Troubleshooting

### **Participant learning verification method:**

**Classroom:** A series of exercises given along the way.  
Correlation exercises using computer generated sound files.

**Field:** Evaluation checklist

**Who should attend:** Water works operators and maintenance personnel, utilities staff and supervisors