

MODELING AND MANAGING REAL WATER LOSSES TRAINING COURSE - JUNE 1-2, 2017

“Water leakage is a highly complex multi-disciplinary phenomenon. A better understanding of leakage is key to saving millions of dollars through more effective leakage modeling and management.”

Managing water losses has the potential to save millions of dollars to your utility. Ensure you understand leakage to choose the most efficient and money-saving water loss strategy by attending this unique course!

Description:

Water leakage is an invisible problem, yet real. This workshop will expose you to the latest knowledge and give you a deep understanding of the behavior, modeling, detection and management of leaks in water pipe systems. You will learn international best practices for water loss benchmarking and management with hands-on opportunities to apply this knowledge to your system. The course will introduce you to the latest research on the behavior of leaks in different pipe materials and how this knowledge can be used to model and detect leaks. You will also learn about different leak detection methods, supported by software and equipment demonstration. The course includes a set of reference notes, examples analyses and hands-on exercises.

Course Agenda:

- Introduction to Water Loss Management
 - District metered areas (DMAs)
 - Minimum night flow analysis
 - The IWA Water Balance
- Benchmarking water losses
 - Do's and don'ts of benchmarking
 - Infrastructure leakage index (ILI)
- Behavior of pipe leaks
 - The orifice and N1 power equations
 - Factors affecting the orifice equation
- Effect of soils on leakage
 - Fluidization of soil outside leaks
 - Scouring of pipes outside leaks
- Effect of structural pipe behavior on leakage
 - Leak area variation mechanisms
 - Linear pressure-area relationship
 - Problem with the power equation
- Modeling of distribution systems with leaks
 - Using the modified orifice equation
 - Improved EPANET for leak modeling
- Benefits of pressure management
- Innovyze modeling software demonstration
- Leak detection methods
- Leak detection field demonstration (EST Environmental Technologies Ltd.)

Course Type:

- Classroom learning: theory, hands-on exercises and the Aqualibrium water competition.
- Participants to bring own laptops. Free EPANET software will be provided or participants can use their own hydraulic modeling software.

Course Details:

- Two-day training course. **Space is limited, max 20 people**
- Cost: \$850 + GST per person (breakfast and lunch included)
- Learning units: 1.2 CEUs (12 Personal Development Hours)
- Training Dates: Thursday and Friday June 1-2, 2017 (9am to 4pm)
- Location: GeoAdvice office in Port Moody



GeoAdvice Education

Make the cut with GeoAdvice training!

"If you don't pass, you don't pay"*

Testimonials:

"Thank you for putting on a great course. At first, I was dreading a 2 day course in modeling from past experiences with this type of a course, but I was pleasantly surprised. It was more educational, far more interesting and fun than I had anticipated. You do the job extremely well."

Lisa O'Neill, City of Calgary, AB

"The training was well organized and tailored to our needs. We had a great time too thanks to the excellent Instructor. I thoroughly enjoyed the training and I certainly recommend GeoAdvice to any other Region or Municipality for hydraulic modeling training. Thumbs up GeoAdvice!"

Theresa Macintyre, B.Eng., Water & Wastewater Modeling Co-coordinator, The Regional Municipality of York, ON

GeoAdvice training deliverables:

- Customized training manual
- Step by step tutorials for each training topic
- Quiz, tests, true/false questions to assess the understanding of each topic
- Training feedback form to help in the assessment of the training
- A Certificate of Completion with CEU credits from IACET

About the Instructor:

Prof Kobus van Zyl, P.Eng. is a professor in the Department of Civil Engineering at the University of Cape Town, South Africa. He has been involved in research on the behavior of leaks in distribution systems for the last 20 years using a range of techniques that include mechanics theory, hydraulic, FEM and CFD modeling, laboratory studies and field work. He collaborates closely with leakage practitioners and has presented many courses on water loss management throughout the world. Prof Van Zyl's work on leakage has received high international praise, including being listed as one of the "top five research works in the past few decades in water distribution planning and management" (Walski, 2014) and "The principal theoretical advance in understanding of pressure - leak flow rate relationships since 2005" (Lambert et al., 2013).

To Register: Contact GeoAdvice Engineering Inc.

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*** This is GeoAdvice's training quality guarantee or your training course will be delivered at no cost.**

Cancellation Policy: Refund requests must be in writing. You will receive a refund, less a 10 percent administration fee, if your written request is postmarked no later than 10 working days before the course begins. No refunds will be given after this date. If you register, but don't attend and don't notify GeoAdvice of cancellation, you will be responsible for the entire registration fee. Substitutions may be made with advance notice. If for any reason the course is canceled, the registration fee will be refunded in full. No refund for travel expenses.

