

**Act 48 Approved: 12.5 Professional Education Contact Hours**

**AMERICAN GROUND WATER TRUST**  
PRESENTS  
**2007 PENNSYLVANIA**  
**GROUND WATER INSTITUTE FOR TEACHERS™**

*(Allentown, Pennsylvania)*

*Event Location: Nestlé Waters Deer Park Facility, 405 Nestlé Way, Breinigsville, PA 18031-1500*

American Ground Water Trust contact, Garret Graaskamp (603) 228-5444, ggraaskamp@agwt.org

***Institute Program Co-sponsor Donors***

Nestlé Waters North America, Breinigsville, PA  
Schramm, Inc. West Chester, PA

**Invited Speakers and Topics**

**MONDAY OCTOBER 22, 2007**

**8:00am - 9:00am**                      **Registration (Coffee and Danish)**

**9:00am – 10:00am**                      **Class Session**

*Garret Graaskamp, Hydrogeologist, American Ground Water Trust, Concord, NH*

**Ground Water Fundamentals**

- Overview of the hydrologic system and the geologic environments that influence the nature and occurrence of ground water

**10:00am - 10:15am**                      **Networking Session**

**10:15am – 11:15am**                      **Class Session**

*Dennis Risser, Hydrologist, United States Geological Survey, New Cumberland, PA*

**The Geology and Aquifers of Pennsylvania**

- Where is the State's ground water?
- How to choose a drilling site for a well
- How do aquifers, springs and natural ground water systems work?
- Summary of potential threats to ground water quality

# 2007 Pennsylvania Institute Program

**MONDAY OCTOBER 22, 2007 (CONTINUED)**

**11:15am – 12:00 noon      Class Session**

*Joel Jordan, Water System Specialist, PA Rural Water Association, Harrisburg, PA*

- Ground Water Model Demonstration

**12:00 noon – 1:00pm      Lunch – Provided Courtesy of Nestlé Waters**

**Lunch Time Speaker:**

*Todd Mayer, Owner, Mayer Well Drilling, Quakertown, PA (Invited)*

- Hands-on Explanation of a Rotary Percussion Drilling Rig and Process

**1:00pm - 2:15pm      Class Session**

*Eric Andreus, Natural Resource Manager /Hydrogeologist Nestlé Waters, Breinigsville, PA*

**From Spring to Bottle – Tour of Nestlé Waters Bottling Plant Process**

**2:15 – 2:30pm      Networking Break**

**2:30pm – 4:30pm      Class Session, Activities and Demonstrations**

*Pamela Kistler, Ph.D., Chairman, Chemistry Department, Cedar Crest College, Allentown, PA*

**The Chemistry of Ground Water - What is Water?**

- The basic chemistry of natural ground and surface water – Are they the same?
- Is a “polar molecule” only found at the North Pole?
- How and why do substances dissolve in water?
- Does the chemistry of a water droplet change as the temperature decreases?
- Does water have a role in the processes of adsorption and absorption?
- How can an insoluble compound (gasoline or dry cleaning fluid) be a water contaminant?
- Analysis of selected water samples



# 2007 Pennsylvania Institute Program

**TUESDAY OCTOBER 23, 2007** (continued)

**1:00pm - 2:00pm**                      **Class Session**

*Anthony Griscavage, PE, Global Technical Marketing Manager,  
GE Water & Process Technologies, Trevose, PA*

**Water Treatment – In with the “good water” out with the “bad water.”**

- Why is there water scarcity around the world?
- How do we solve difficult water scarcity and quality problems?
- Water recycling – a “new” source of water
- Reverse Osmosis – What is it?
- Desalination in Saudi Arabia – More oil than water?
- Facing Global Water Challenges - China and other resource-stressed regions

**2:00pm – 5:00pm**                      **Field Trips – 1) Fogelsville Flooded Quarry Site  
2) Nestlé Waters - Hoffman Spring**

1) *Liesel Adam, Water Education Specialist, Lehigh County Authority, Allentown, PA*

- Historical perspective of quarries in Pennsylvania and their impact on groundwater
- Description of geology and other features of the quarry
- Is the quarry a discharge or recharge area for ground water?
- Evaluation of historical groundwater levels in Lehigh County
- Visual assessment of the effect of drought on ground water levels

2) *Eric Andreus, Natural Resource Manager /Hydrogeologist Nestlé Waters, Breinigsville, PA*

- What is “Spring Water?”
- The geology of the Hoffman Spring
- History of the Hoffman Spring
- What is the “safe yield” for the spring resource and how is it determined?
- How is the source area of the spring defined?
- How is the quality of the spring water protected?

**5:00 pm Institute Adjourns at Nestlé Waters Deer Park Facility, 405 Nestlé Way, Breinigsville**