

Act 48 Approved: 12.5 Professional Education Contact Hours

AMERICAN GROUND WATER TRUST
PRESENTS
2005 PENNSYLVANIA
GROUND WATER INSTITUTE FOR TEACHERS™
(Allentown, Pennsylvania)
Event Location: Nestlé Waters Deer Park Facility, 405 Nestlé Way, Breinigsville, PA

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

Institute Program Co-sponsor Donors

Invited Speakers and Topics

WEDNESDAY OCTOBER 26, 2005

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

2005 Pennsylvania Institute Program

WEDNESDAY OCTOBER 26, 2005 (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

1:00pm - 2:15pm Class Session

Charles Cravotta, III, Research Hydrologist, United States Geological Survey, New Cumberland, PA

Acid Mine Drainage in Pennsylvania

- What is acid mine drainage?
- The chemistry of acid drainage.
- Is acid drainage from coal seams a natural occurrence?
- How can the drainage be managed to reduce impacts?
- Demonstration

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

2005 Pennsylvania Institute Program

THURSDAY OCTOBER 27, 2005 (continued)

1:00pm – 5:00pm

Field Trips –

- 1) Fogelsville Flooded Quarry Site**
- 2) Demonstration - Stream Habitat Monitoring**
- 3) Nestlé Waters - Hoffman Spring**

- 1) *Liesel Smull, 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 the 2002 Drought Emergency
- 2) *Ken Wagner, Water Resources Manager, ENSR, Willington, CT*
 - Demonstration - Fish Habitat Monitoring at the Hoffman Spring Site
- 3) *Bruce Lauerman, 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