

PROGRAM SCHEDULE

Ground Source Heating & Cooling for  
Residential and Commercial Properties  
Latest Technologies, Economic Advantages,  
Environmental Impacts and Regulations

Presented by

**American Ground Water Trust**

50 Pleasant Street, Concord, NH

*Ground Water Information, Awareness & Education Since 1986*



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Geothermal Heat Pump Consortium  
International Ground Source Heat Pump Association

*In Cooperation with:*



Thursday, April 14<sup>th</sup>, 2011  
Crowne Plaza Pittsburg South, 164 Fort Couch Road, Pittsburg, PA 15241  
Hotel Telephone: (412-833-5300)

## American Ground Water Trust

The American Ground Water Trust is a national not-for-profit public education organization. The Trust's mission:

- ◆ Promoting efficient and effective ground water management
- ◆ Communicating the environmental and economic value of ground water
- ◆ Showcasing ground water science and technology solutions
- ◆ Increasing citizen, community and decision-maker awareness
- ◆ Facilitating stakeholder participation in water resource decisions

## Forum Program

**7:15 – 8:15 REGISTRATION / EXHIBITS / CEU Sign-in (coffee and donuts provided)**

**8:15 - 8:30 INTRODUCTION**

**Jacqueline Daoust, Environmental Specialist, American Ground Water Trust, Concord, NH**

- Concept of Resource Sustainability, Environmental Issues related to "Geothermal" technology
- The importance of "doing it right" (No shortcuts – No one-size-fits-all)

**8:30 - 9:15 GEOEXCHANGE INSTALLATIONS – STATE RULES AND RESIDENTIAL INCENTIVE PROGRAMS**

**G. Patrick Bowling, PG, Bureau of Watershed Management, PA DEP, Harrisburg, PA**

- Current regulatory requirements in Pennsylvania (state and local)
- Application requirements for installation of a geothermal well/system
- Well construction requirements
- Licensing requirements for well and heat-exchange equipment installers
- Environmental and health concerns from geothermal installation/ operation

**9:15– 10:15 THE STATUS OF THE "GEOTHERMAL" INDUSTRY**

**Paul Bony, Director of Residential Market Development, ClimateMaster, Montrose, CO**

- Geographic distribution of geothermal installations, nationally
- Trends in the growth of geothermal applications, market potential and market predictions for the geothermal industry
- How the Geothermal industry is organized nationally, regionally and locally
- What appear to be the barriers to greater acceptance of geothermal installations?

**10:15 – 10:35 BREAK**

**10:35 -11:15 GROUND SOURCE HEAT PUMP SYSTEMS - THE FUNDAMENTALS**

**Chuck Hammock, Principal, Andrews, Hammock & Powell, Inc, Macon, GA**

- Understanding the basic physics of the heat transfer process
- Explanation of terminology (geoexchange, geothermal, ground source, BTUs, tons etc.)
- What happens to the heat transferred underground – where does it go?
- How to measure the efficiency of geothermal systems
- What makes a "good" system? What should a home inspector, Realtor or purchaser look for?

**11:15 – 12:00 GEOEXCHANGE WELL / BORE CONSTRUCTION**

**John Christ, Account Representative, Baroid IDP, Cincinnati, OH**

- How a ground source heat pump boring differs from a water well
- Basic difference between drilling fluids and sealing grouts
- Matching the drilling technology to the geological conditions
- Managing drilling fluids to optimize vertical penetration rates
- Collecting geologic & water quality information for the geothermal designer
- Dual purpose (water supply and geothermal) wells
- Techniques of grout placement to meet geothermal design specifications

**12:00 – 1:00 LUNCH (Provided on site)**

**1:00 – 1:45 THERMAL CONDUCTIVITY TESTING AND SOFTWARE OVERVIEW**

**Chuck Hammock, Principal, Andrews, Hammock & Powell, Inc, Macon, GA**

- How is a Thermal Conductivity Test (TCT) accomplished, and the critical need for it on all commercial projects
- An overview of how this TCT information is then utilized in Ground Loop Heat Exchanger (GHX) modeling software

- 1:45 – 2:45 GROUTS FORMULATED FOR GEOTHERMAL HEAT PUMP APPLICATIONS**  
**Alan Skouby, Vice-President, GeoPro Inc., Bowie, TX**
- Regulatory and thermodynamic reasons for grouting
  - Grouting material options for geothermal projects
  - Heat-exchange physics of thermally-enhanced grouts
  - How correct grout selection impacts operational economics
  - Verification of geothermal grouting material performance
- 2:45 – 3:00 BREAK**
- 3:00 – 3:45 GEOEXCHANGE INSTALLATION CASE STUDIES (1)**  
**Nathaniel Doyno, Thar Geothermal LLC, Pittsburgh, PA**
- Geothermal success stories
  - Alternative energy
  - Geothermal technology
- 3:45 – 4:30 GEOEXCHANGE INSTALLATION CASE STUDIES (2)**  
**Bob Tudi, Chief Executive Officer, TUDI Mechanical Systems, McKees Rocks, PA**
- Geothermal success stories
  - A LEED Perspective
- 4:30 – 4:45 WRAP-UP AND ADJOURN**  
**Jacqueline Daoust, Environmental Specialist, American Ground Water Trust, Concord, NH**

**CONTINUING EDUCATION CREDITS AVAILABLE**

**ARCHITECT CREDITS – 7.25 LUS (FOR HSW AND SUSTAINABLE DEVELOPMENT) THROUGH AIA (PROVIDER #521)**  
**AMERICAN SOCIETY OF HOME INSPECTORS – 7.0 ASHI® CE CREDITS**  
**IGSHPA ACCREDITED INSTALLERS – 0.75 CEUS**  
**PROFESSIONAL ENGINEERS – 7.25 PDH FOR PA LICENSED PROFESSIONAL ENGINEERS**



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