

Geothermal Education Program – Santa Fe, New Mexico  
Get up to speed with state-of-the-art information about “Geothermal” technology and its applications

## USING THE EARTH'S RENEWABLE ENERGY

**Tuesday, May 17, 2011 (8:15 – 4:45)**

Courtyard by Marriot Santa Fe, 3347 Cerrillos Road, Santa Fe, NM 87507  
Hotel Telephone: (505) 473-2800

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

Presented by:

#### American Ground Water Trust (AGWT)

50 Pleasant Street, Concord, NH  
501(c)(3) education organization



#### THANK YOU TO OUR SPONSORS:

Baroid IDP

ClimateMaster

IECsolar

Preferred Pump



In cooperation with:

Geothermal Exchange Organization (GEO) and International Ground Source Heat Pump Association

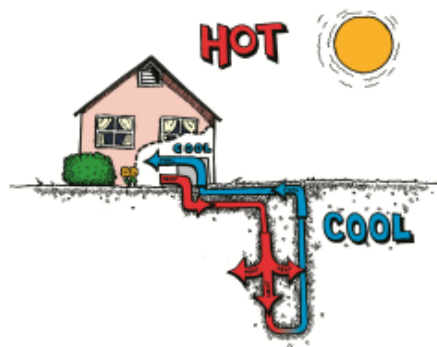
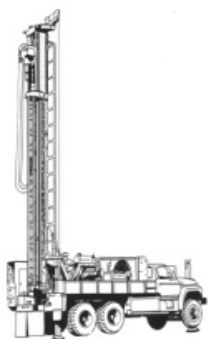
#### Continuing Education Credit

Architect Credits - 7.25 LUS (for HSW and Sustainable Development) through the AIA (Provider # 521)

American Society of Home Inspectors - 7.0 ASHI® CE Credits

IGSHPA Accredited Installers – 0.75 CEUs

Call for details about other professions - 800-423-7748



#### WHO SHOULD ATTEND?

This program is geared to potential end-users and to professionals who design, install, inspect, approve, recommend or regulate geothermal systems. Geothermal has the potential to become the technology of choice among those considering “green energy” options for commercial or residential installations.

Energy company engineers, architects, planners & conservation commissioners, building code inspectors, environmental health professionals, home inspectors, water well contractors, HVAC professionals, real estate agents, home builders and developers, town officials (Conservation, Zoning, Planning), water testing specialists etc. should not miss this opportunity to get up to speed with this technology. It will be coming to buildings near you!

## WHAT IT IS ALL ABOUT

Geothermal, (Ground source heating and cooling) (GSHC) technology provides a proven method for saving energy costs for heating, cooling and hot water generation. Thousands of homes, businesses and manufacturing plants across the nation are already taking advantage of these energy-efficient conditioning systems. GSHC systems operate at significantly lower costs than traditional gas, oil or electric-based installations. National benefits from geothermal installations include less demand for energy generation capacity, reduction in green-house gas emissions and a reduced dependence on imports of fossil fuels. Installation of ground source systems involves accessing the sub-surface by excavation or by drilling vertical bores. Because the sub-surface heat-exchange process occurs near or beneath the groundwater table, environmental and water resource regulatory issues make it important to “do the job right.” Correct design, materials specification and installation are critically important to maximize efficiency and minimize risk. There is not a one-size-fits-all for geothermal.

- The Program will:
- ➔ Show the professional connections among designers, manufacturers and installers
  - ➔ Provide the “state of the art” in terms of design options and pay-back calculations
  - ➔ Demonstrate the environmental and strategic benefits of the technology
  - ➔ Explain the tax-breaks, incentives and subsidies available for installing geothermal
  - ➔ Dispel myths about the effectiveness, reliability & safety of ground source systems
  - ➔ Explain industry-accepted installation, operation and maintenance practices
  - ➔ Provide an update on state, local and regulatory oversight

The program draws on the experience & expertise of industry and agency professionals and will provide a unique opportunity for exchange of information among policy makers involved in energy issues and specialists involved with the design, construction and permitting of ground source geothermal systems for cooling and heating.

## PROGRAM

**7:15 – 8:15 REGISTRATION (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 and LOCAL RULES AND REGULATIONS**

**To Be Announced, New Mexico Regulation & Licensing Dept., Santa Fe, NM**

- Current regulatory requirements in New Mexico (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**

**John Dibble, Western Region Sales Manager, ClimateMaster, Sandpoint, ID**

- 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**

**Richard Reif, PE and Vice President, Bridgers and Paxton Consulting, Albuquerque, NM**

- 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**

**David Wilson, Account Representative, Baroid IDP, Denver, CO**

- 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 GEOTHERMAL ENERGY IN NEW MEXICO**

**James Witcher, Geologist, Witcher and Associates, Las Cruces, NM**

- Resource base and classification
- Applied technologies
- Case study - large-scale geothermal greenhousing

**1:45 – 2:30 STATE ENERGY INITIATIVES – GROUND SOURCE ENERGY OVERVIEW**

**Stephen Lucerno, Clean Energy Specialist, Energy Conservation and Management Division, NM Energy, Minerals and Natural Resources Department, Santa Fe, NM**

- Overview of New Mexico's Energy Initiatives
- New Mexico's economic perspective of reducing electrical energy demands and the need for infrastructure investment
- Potential impact of geo-exchange technology on new Mexico's energy security
- Ground Source technology impact on New Mexico's efforts to reduce CO2 emissions

**2:30 – 3:00 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

**3:00 – 3:15 BREAK**

**3:15 – 3:45 GEOEXCHANGE SYSTEM INSTALLATIONS - The LEED Perspective**

**Matthew Higgins, Energy Engineer, Bridgers and Paxton Consulting, Santa Fe, NM**

- What is Leadership in Energy and Environmental Design (LEED)?
- Overview of the various Green Building rating systems: United States Green Building Council (USGBC)
- Overview of the LEED rating systems - Commercial vs. Residential
- How is a building's heating and cooling system (energy-use) evaluated in the LEED rating system?
- How do Ground Source Heating and Cooling systems achieve LEED rating points

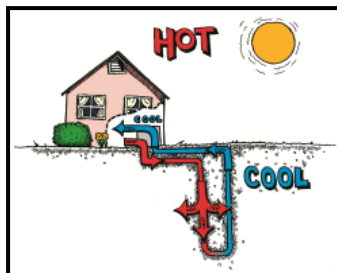
**3:45 – 4:30 GEOEXCHANGE INSTALLATION CASE STUDIES**

**Don Swick, Engineer, Energy Control Inc., Rio Rancho, NM**

- Geothermal success stories
- Alternative energy
- Geothermal technology

**4:30 – 4:45 WRAP-UP AND ADJOURN**

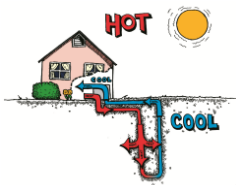
**Jacqueline Daoust, Environmental Specialist, American Ground Water Trust, Concord, NH**



**Program Venue - Hotel information**

Courtyard by Marriot Santa Fe, 3347 Cerrillos Road, Santa Fe, NM 87507

To obtain the special sleeping room rate of \$99 call: (505) 473-2800 and ask for the room rate under the American Ground Water Trust block. Rooms will be held at this rate until 5/6/2011.



Another Education Program from:  
**American Ground Water Trust**  
 50 Pleasant Street (Suite 2)  
 Concord, NH 03301



# GEOTHERMAL

## Ground Source Heating & Cooling Workshop

**Tuesday, May 17, 2011 (8:15 – 4:45)**

Courtyard by Marriot Santa Fe, 3347 Cerrillos Road, Santa Fe, NM 87507

Hotel Telephone: (505) 424-2455

- ☉ Find out how to save thousands of dollars in energy costs
- ☉ Learn state-of-the-art technical information on geothermal
- ☉ See how geothermal fits with state & federal energy policy
- ☉ Hear firsthand about Pennsylvania success stories
- ☉ Network with designers, manufacturers & installers
- ☉ Get the regulatory perspective on geothermal
- ☉ Obtain Architect Credits - 7.25 LUS

**GEOTHERMAL PROGRAM - REGISTRATION FORM**

**Tuesday, May 17, 2011 (8:15 – 4:45)** Courtyard by Marriot, Santa Fe, NM

[Walk-in registration (on day of event) \$225]

Check box

<b>Registration (General)</b>	<b>\$185</b>	<input type="checkbox"/>
<b>Registration (AGWT Members)</b>	<b>\$150</b>	<input type="checkbox"/>
<b>Registration (Student) (ID required)</b>	<b>\$ 90</b>	<input type="checkbox"/>
<b>CD of Presentations (Registrant price)</b>	<b>\$ 15</b>	<input type="checkbox"/>
(Non-Registrant Price)	<b>\$ 50</b>	<input type="checkbox"/>
<b>Exhibit Table (does not include registration)</b>	<b>\$200</b>	<input type="checkbox"/>

**TOTAL \$ \_\_\_\_\_**

**PAYMENT:**  Check [payable to: American Ground Water Trust]

AMEX  Visa  MasterCard  PO

**Credit Card or PO No.** \_\_\_\_\_ **Expiration** \_\_\_\_\_

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**SPONSORSHIP & EXHIBITS**

There are opportunities to showcase company achievements, expertise, projects, products and services  
 Call (800) 423-7748  
 Sponsors receive recognition

**CANCELLATION POLICY**

- Cancellations received in the AGWT office by 5 pm EST 5 days prior to event will receive a full refund less \$25.
- For cancellation 4-2 days prior to the there is a 50 % refund.
- Cancellations one day prior to the start of the event or on the day of the event are considered "No Shows" and no refund will be made - (substitutions gladly accepted).
- The Trust will not cancel a program because of bad weather conditions. Except that, as the result of an event cancellation resulting from, (but not limited to) circumstances such as a state mandatory evacuation or a fire at the program facility, the Trust will reschedule the event and honor registrations as payment for the new event.

**Return by mail: American Ground Water Trust, 50 Pleasant Street, Concord, NH 03301**

**Return by fax: (603) 228-6557 Call to register (800) 423-7748**

**Register on line <http://www.agwt.org> (Conferences/workshops)**