

## GEOHERMAL HEATING AND COOLING INSTALLATION OF A GEOTHERMAL SYSTEM

Geothermal systems are used for heating, cooling and humidity control in both residential and commercial buildings. A ground source heat pump (GSHP) is used to transfer the earth's constant temperature to provide heating, cooling and hot water. The system can be based on an open or a closed ground loop, which can be installed horizontally, vertically or using onsite surface water. Most systems consist of three main components: subsurface piping that exchanges heat from the earth to fluid in the pipes, a GSHP that moves heating or cooling between the ground & building, and duct work that delivers heating or cooling to the building depending on the season.

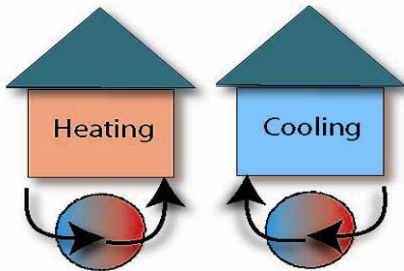


Figure 1. Using the constant temperature of the ground to heat or cool your building.

Based on site specific conditions and layout, **R.E.A.** personnel will design a system to meet your needs. During the feasibility assessment, **R.E.A.** will determine if a GSHP system is right for you and will guide you through the decision process.

Important design considerations include:

- Size of the building and number of rooms
- Age and type of construction
- Size of the lot
- Yield of existing supply well
- Current heating costs
- Existing electrical service
- Current and future electrical costs
- Permit and/or zoning restrictions

After system installation, **R.E.A.** will document the efficiency of the system, prepare an as-built report and assist with any applicable incentives and/or tax credits related to GSHP system.



Figure 2. Drilling for a Vertical Loop System

### Advantages of a GSHP System:

- Green Energy
- No petroleum used;
- No emissions are generated leading to better indoor air quality;
- Flexibility – the system can be used for both heating and cooling;
- No outdoor compressors (A/C);
- Long Equipment Life with very little maintenance;
- Quiet operation;
- No open flame or potentially dangerous fuel storage tanks;
- Comfort – less fluctuation in heating/cooling temperatures; and
- Credits and Tax incentives.

**R.E.A.** personnel have been accredited by the International Ground Source Heat Pump Association (IGSHPA) for the design and installation of Residential & Light Commercial Ground Source Heat Exchange Systems.

