Protecting Groundwater Quality: The Spring Creek Watershed Drilling Ordinance Success Story

by

Todd Giddings, Ph.D., P.G.
IGSHPA Accredited Trainer

Source Water Roundtable
September 27, 2010
Where is the Spring Creek Watershed?
Zone II Well Head Protection Areas
A four-borehole geothermal heat exchanger
A six-borehole geothermal heat exchanger
An open-loop geothermal system
A residential closed-loop geothermal system
Proper bentonite grouting through a tremie pipe
24 boreholes filled with limestone “sand”
70 geothermal bore holes 350-feet deep
Flowable Fill being used as a grout material
Flowable Fill: 85% sand, 9% water, 4% Portland cement, 2% fine slag, and a fluidizing agent
The League of Women Voters Public Forum: June 6, 2009

The Forum created:
- Concerned citizens
- Concerned officials
- Ordinance support
The Model Ordinance Addresses:

- Residential water wells
- Geothermal water supply and recharge wells
- Geothermal boreholes
- Isolation distance requirements for wells and boreholes
- Acceptable casing materials and minimum casing lengths
- Acceptable grouting materials, depths, and procedures
- Acceptable bridging and fill materials
- Decommissioning procedures and materials
- Permit and reporting requirements
- Only aspects that protect ground-water quality
How is the Ordinance being implemented?

Within the 6 Centre Region Municipalities:

- Through the Code Enforcement Office
- As a chapter in the Property Maintenance Code

Within the 7 Other Municipalities:

- As individual municipal ordinances
- A municipality may customize the ordinance

Training workshops were provided:

- For the inspectors
- For companies in the geothermal and water well industries
The Centre Region is State College Borough and the five surrounding townships
Code Administration has 17 employees
The January 21, 2010 meeting of the Nittany Valley Joint Planning Commission
The March 23, 2010 meeting of the Potter Township Supervisors and the Potter Township Planning Commission
The April 19, 2010 meeting of the Ferguson Township Supervisors
Centre Region Code Administration
Call for information: 814-231-3056

Do you know about the new requirements for well and geothermal borehole installation & construction?

Well Construction Training

The Centre Region Code Administration Agency, in cooperation with the Spring Creek Watershed Commission, invites you to attend a special training session on the new well and geothermal borehole construction specifications and inspection program. Choose from one of two possible session dates.

**WHO SHOULD ATTEND:** Well Drillers, HVAC Installers, Code Inspectors, Municipal Officials

**WHERE:** Centre Region COG Building
2643 Gateway Drive

**WHEN:**
- Friday, June 18
  - 8:00 am—10:00 am
- OR
- Wednesday, June 23
  - 2:00 pm—4:00 pm

- Learn about new casing & grouting specifications
- Receive a copy of the regulations
- Instruction provided by Dr. Todd Giddings, an IGSHA PA Accredited Trainer, about industry standards for well construction

For More Information or to Register: Centre Region Code Agency
814-231-3056
A residential geothermal heat pump system retrofit
Walter Schneider, Centre Region Code Agency Director, and Chris Exarchos, President of GeoEnergy, Inc. with permit 0001
Local newspaper photographs on June 24, 2010
The water well and geothermal borehole drilling ordinance made the front page!
Ferguson Township Elementary School loopfield drilling
Mt. Nittany Middle School loopfield drilling
The Pennsylvania Ground Water Association is adapting the Spring Creek Watershed Model Ordinance to apply to all of the rock types in Pennsylvania.
Thank you!