Geothermal Development in Boise - 120 Years of Success!

Ken Neely
Idaho Department of Water Resources
May 20, 2010

Heat Sources in the Earth

- Remnant from iron core formation
- Gravitational compression
- Radioactivity decay
Plate Tectonics
1 Paleo and Meso
2 Idaho Batholith
3 Columbia River Basalt
4 Volcanics of the Great Rift and Hot Spot
5 Basin Infill
Geothermal Resources in Idaho
(Temps > 85 deg F.)

Boise Geothermal Aquifer—Conceptual Model

Fracture zones in granite
Boise's Geothermal Timeline

Boise Warm Springs Water District born

1890

Boise Warm Springs Water District
Two production wells
Boise’s Geothermal Timeline

Energy Crisis I
Test wells,
State pilot project

Boise Warm Springs Water District born

1890

1975

A Boise Landmark for 75 years!
Boise's Geothermal Timeline

State, City, and VA drill wells

1890

1975

1980's

Boise Geothermal Aquifer—Conceptual Model

Fracture zones in granite
State of Idaho Capitol Mall System
One production well; one injection well.
City of Boise
Four production wells
Veterans Administration
One production well;
one injection well.
Geothermal Resources in the Boise Area

- Temp > 85 degrees F.
- Boise Geo Lines
- Proposed Line Expansions
- Roads
- Rivers, Streams, etc.
- Water Bodies
- Stewart Gulch Water District
- Boise Front Ground Water Management Area
- Major Geothermal Users

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BLM Well
Boise's Geothermal Timeline

- Boise Warm Springs Water District born
- Energy Crisis I, Test wells
- State pilot project
- State, City and VA drill wells

Ground Water Management Area and Moratorium
Administrative Designations for Idaho's Geothermal Resources

- Ground Water Management Areas
- Ground Water District
- Moratorium Areas

Counties

Boise

Payette

Gem

Canyon

Ada

Elmore

Owyhee

Camas

Blaine

Gooding

Lincoln

Min

Jerome

Twin Falls

Cas
Boise’s Geothermal Timeline

- 1890: Boise Warm Springs Water District born
- 1975: Energy Crisis I, Test wells, State pilot project
- 1980: Management Areas & Moratorium
- 1987-8: City and VA drill wells
- 1999: City completes injection well

There’s got to be an easier way...
Boise Geothermal Aquifer—Conceptual Model

Fracture zones in granite
Boise's Geothermal Timeline

- Boise Warm Springs Water District born
- 1890
- 1975
- 1980
- 1987-8
- 1999
- 2002

City gets 15% production increase
The Boise Front Geothermal System illustrates the importance of geologic modeling and re-injection in order to properly manage Idaho's geothermal resources.
Get Monitoring Data at Any Cost!

Photo courtesy of Deb Purifoy, USGS, Boise