

Subject Wells and borings; groundwater thermal exchange devices

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Overview

This bill modifies requirements for the operation of groundwater thermal exchange devices in a chapter regulating wells and borings. A groundwater thermal exchange device is a heating or cooling device that extracts and reinjects groundwater to operate. According to the Department of Health, a groundwater thermal exchange system withdraws groundwater using a well, extracts heat from the water (to heat a building) or adds heat to the water (to cool a building) by use of a heat pump, uses the heat pump to heat or cool a building, and returns the water to the aquifer from which it was drawn. The wells must be drilled to the same aquifer and must meet requirements in rules for location, design, construction, operation, repair, and sealing. A groundwater thermal exchange system must be installed by a department-licensed well contractor.

Summary

| Section | Description |
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| 1 | Environmental well. |
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Amends § 1031.005, subd. 8a. Amends the definition of environmental well in the wells and borings chapter, to allow an environmental well to hold a groundwater thermal exchange device.

This section is effective the day following final enactment.

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| 2 | Water supply well. |
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Amends § 1031.005, subd. 20a. Amends the definition of water supply well in the wells and borings chapter, to include holding groundwater thermal exchange devices in an existing authorized use of heating or cooling.

This section is effective the day following final enactment.

| Section | Description |
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3 Permits for groundwater thermal exchange devices.

Amends § 1031.621. Modifies requirements for the operation of groundwater thermal exchange devices.

Subd. 1. Permit. Allows a groundwater thermal exchange device to operate using one or more water supply wells or environmental wells, and allows it to be constructed with a downhole heat exchanger (a downhole heat exchanger is a heat exchanger installed inside of a well, is made of a loop of pipes or tubes inside the well through which water is pumped or allowed to circulate, and adds heat to or takes heat from the ground). Also strikes language limiting the number of permits that may be issued for small and large groundwater thermal exchange systems.

Subd. 2. Water-use requirements. No changes to this subdivision.

Subd. 3. Construction requirements. Current law requires a groundwater thermal exchange device to operate as a closed system in which water drawn for thermal exchange does not have contact with water from other sources or with polluting substances. Provides that extraction and injection of water within a single well system constitutes a closed system. Also allows a well that is part of a groundwater thermal exchange system to serve another function in part if the heat exchanger and heat loop piping are continuously monitored and will automatically shut down if there is a leak. Allows a well holding a groundwater thermal exchange device to be fitted with a well screen using any combination of the listed elements as long as the well does not interconnect multiple aquifers.

Subd. 3a. Heat transfer fluids. Lists heat transfer fluids that a groundwater thermal exchange device may use.

Subd. 3b. Consumptive use. Allows a groundwater thermal exchange device to be installed in an environmental well if it does not depend on consumptive use to operate. (Consumptive use means the use of water that diminishes the amount of water at the water source.)

Subd. 4. Rules. No changes to this subdivision.

This section is effective the day following final enactment.



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