

4725.1834 SUBMERGED CLOSED LOOP HEAT EXCHANGER SYSTEM PERMIT.

Subpart 1. **General requirements.** A person must not install or operate a SCLHE system until the commissioner issues a permit to the well contractor installing the SCLHE system, the system owner, and the property owner where a SCLHE is located, if different than the system owner.

A. An applicant must submit a new SCLHE system permit application to the commissioner, according to subpart 2, if a well contractor installing the SCLHE system is not the well contractor listed on the SCLHE system permit.

B. A system owner must provide the commissioner with Minnesota unique well numbers for proposed wells on a SCLHE system permit before construction of the wells.

C. A well contractor must construct all wells used for a SCLHE system within 18 months of the original SCLHE system permit approval.

D. A person must not use the wells in a SCLHE system to provide potable water while the SCLHE system is installed.

Subp. 2. Permit application.

A. The property owner, or the property owner's agent, where a SCLHE system is proposed to be installed must submit to the commissioner:

(1) a complete and legible SCLHE system permit application on a form, or in a format, provided by the commissioner; and

(2) the nonrefundable permit fee specified in Minnesota Statutes, section 103I.208.

B. A SCLHE system permit application must include:

(1) the name, address, and signature of:

(a) the well contractor installing the SCLHE system;

(b) the system owner; and

(c) the property owner, if not the system owner;

(2) the license number of the well contractor installing the SCLHE system;

(3) the location of the proposed SCLHE system, including:

(a) the township number, range number, section number, and one quartile; and

(b) the street address, if assigned;

(4) the construction record for each existing well proposed for use in the SCLHE system;

(5) a description of each proposed well for use in the SCLHE system, including the proposed:

(a) aquifer the well will be completed within;

- (b) total well depth;
- (c) bore hole diameter;
- (d) casing diameter;
- (e) casing depth;
- (f) grouting material; and
- (g) pitless unit make and model;

(6) proposed SCLHE system specifications, including:

- (a) heat transfer fluid additives, including:
 - i. product names and manufacturers; and
 - ii. maximum concentrations of products proposed for use;
- (b) SCLHE in-well piping and SCLHE lateral piping specifications, including:
 - i. diameters;
 - ii. material types and corresponding standards;
 - iii. wall thicknesses; and
 - iv. pressure ratings;
- (c) SCLHE unit specifications, including:
 - i. diameter;
 - ii. material types and corresponding standards; and
 - iii. pressure rating;
- (d) maximum SCLHE system design operating pressure;
- (e) submersible pump maximum design flow rate; and
- (f) types of seals or packers to be installed in a well;

(7) a plan describing how the proposed SCLHE system will be monitored for potential leaks and mitigation strategies for any leaks that may occur. The plan must include:

- (a) design documents with locations of monitoring and mitigation devices;
- (b) proposed monitoring parameters and frequency;
- (c) a description of conditions that trigger a system alert or shut-off;
- (d) a description of alert or shut-off response activities, including a list of the entities and roles of persons involved; and

(e) a description of mitigation activities to implement in the event of a leak, including a list of the entities and the roles of the persons involved;

(8) a plan diagram of the proposed SCLHE system, including:

- (a) all existing and proposed well locations where SCLHE will be installed; and
- (b) distances of proposed and existing wells to:
 - i. property lines;
 - ii. structures;
 - iii. utilities listed in part 4725.2150;
 - iv. water bodies listed in part 4725.4350, subpart 1;
 - v. all other wells on the property, if applicable; and
 - vi. contamination sources listed in part 4725.4450;

(9) a cross-sectional diagram of each well in a proposed SCLHE system. One diagram may be submitted if well construction, SCLHE in-well piping, SCLHE lateral piping, and SCLHE unit installation is the same. A diagram must include:

- (a) the existing or anticipated geology at the well location, including depth intervals and description of materials or formations;
- (b) existing or proposed well construction information, including:
 - i. total well depth;
 - ii. casing depth;
 - iii. bore hole diameter;
 - iv. casing diameter;
 - v. grouting materials and intervals;
 - vi. gravel packed interval and screened interval, if applicable; and
 - vii. pitless unit depth and diameter;
- (c) the existing or anticipated static water level;
- (d) proposed SCLHE installation information, including the depth:
 - i. and length of the SCLHE unit;
 - ii. of seals or packers installed in the well; and
 - iii. of the submersible pump;

(10) an inventory of known groundwater contamination sites and plumes within one-half mile of the proposed SCLHE system wells. The inventory must include:

(a) a list of mapped groundwater contamination sites and plumes generated from publicly available information on local, state, and federal websites. The list must include:

- i. the special well and boring construction area name, if applicable;
- ii. the site name;
- iii. a description of contamination;
- iv. the status of contamination; and
- v. the source of information;

(b) a scaled map, including:

- i. proposed SCLHE wells;
- ii. a line showing the one-half mile boundary from the proposed SCLHE wells; and
- iii. identified sites and plumes within the one-half mile boundary; and

(11) additional information the commissioner requires to evaluate potential harm to public health or degradation of the groundwater.

Subp. 3. Permit application denial. The commissioner must deny a SCLHE system permit application according to requirements in part 4725.1845 and Minnesota Statutes, section 144.99, subdivision 8.

Subp. 4. Permit conditions. The well contractor installing the SCLHE system, system owner, and property owner where the SCLHE system is located must comply with the permit conditions. The commissioner may require additional permit conditions to protect the public health and prevent degradation of the groundwater.

Subp. 5. Permit modifications. The system owner must obtain the commissioner's written approval before making changes to permitted SCLHE system specifications, including:

A. wells, including:

- (1) the well casing diameters;
- (2) the aquifer the wells will be completed within;
- (3) the grouting materials;
- (4) well completion types, such as screened or open bore hole; or
- (5) wells used in the SCLHE system;

B. SCLHE in-well piping and SCLHE lateral piping specifications, including:

- (1) material types and corresponding standards;
- (2) wall thicknesses; or
- (3) pressure ratings;

C. SCLHE unit specifications, including:

- (1) diameter;
- (2) material types and corresponding standards; or
- (3) pressure rating;

D. the maximum SCLHE system design operating pressure;

E. a submersible pump maximum design flow rate;

F. heat transfer fluid additives;

G. heat transfer fluid additive maximum use concentrations; or

H. a plan for monitoring and mitigating leaks in the SCLHE system.

Subp. 6. Installation record. The system owner must submit a SCLHE system installation record to the commissioner within 60 days of the date of the first successful SCLHE system pressure test. The installation record must be legible and completed on a form provided by the commissioner.

A. The installation record for the SCLHE system must include:

- (1) the SCLHE system permit number;
- (2) the name, address, and signature of the:
 - (a) system owner; and
 - (b) well contractor installing the SCLHE system;
- (3) the heat transfer fluid additives used, including:
 - (a) product names and manufacturers; and
 - (b) maximum concentrations of products used;
- (4) the SCLHE in-well piping and SCLHE lateral piping specifications, including:
 - (a) diameters;
 - (b) material types used and corresponding standards;
 - (c) wall thicknesses; and
 - (d) pressure ratings;
- (5) the SCLHE unit specifications, including:

- (a) diameter;
- (b) material types used and corresponding standards; and
- (c) pressure rating;
- (6) the maximum SCLHE system design operating pressure;
- (7) the submersible pump, including:
 - (a) make and model; and
 - (b) maximum design flow rate;
- (8) the types of seals or packers in the well;
- (9) the pressure test record from the first successful pressure test;
- (10) the pitless unit make and model; and
- (11) the cross-sectional diagrams of each well in the SCLHE system.

One diagram may be submitted if the well construction, SCLHE piping, and SCLHE unit installation are the same.

B. A cross-sectional diagram must include:

- (1) the Minnesota unique well number;
- (2) the geology observed during well construction, including depth intervals and the description of materials or formations;
- (3) well construction information, including:
 - (a) the total well depth;
 - (b) the casing depth;
 - (c) the borehole diameter;
 - (d) the casing diameter;
 - (e) the grouting material;
 - (f) the grouting intervals;
 - (g) the gravel packed interval and screened interval, if applicable; and
 - (h) the pitless unit installation depth and diameter;
- (4) the static water level measured in the well; and
- (5) the installation information in the well, including depth:
 - (a) and length of the SCLHE in-well piping;

- (b) and length of the SCLHE unit;
- (c) of the seals or packers; and
- (d) of the submersible pump.

Subp. 7. SCLHE system maintenance.

A. A well contractor must perform any maintenance of the SCLHE unit and SCLHE in-well piping.

B. A well contractor must ensure chemicals placed in the well to clean or rehabilitate the well or SCLHE unit meet the requirements of and are used in accordance with part 4725.3725.

C. Treatment or rehabilitation chemicals must:

- (1) not be circulated within the SCLHE unit and SCLHE in-well piping when installed in the well; and

- (2) be removed from the SCLHE unit and SCLHE in-well piping before reinstallation in the well.

D. ANSI/NSF-60 certified treatment or rehabilitation chemicals are exempt from the requirements in item C and must be used in accordance with the certification for each chemical;

E. A well contractor must ensure the heat transfer fluid and treatment or rehabilitation chemicals are:

- (1) not released into the well during the removal of the SCLHE unit and SCLHE in-well piping; and

- (2) disposed of according to applicable laws and rules of this state, including local ordinances or regulations.

F. A SCLHE system must be pressure tested according to part 4725.7075, subpart 4, items A to I, when the SCLHE unit and SCLHE in-well piping is removed from the well and reinstalled or replaced.

G. The system owner must conduct leak monitoring and mitigation according to the plan approved in the SCLHE system permit.

H. The system owner must notify the commissioner electronically within 24 hours of pressure loss or leakage from the SCLHE system piping that causes an alert or shut-off.

I. The system owner must notify the Minnesota duty officer according to Minnesota Statutes, section 115.061, of a SCLHE system leak.

J. The system owner is responsible for the repair and mitigation of a leak.

Subp. 8. SCLHE system disclosure and ownership. A property owner must notify the commissioner electronically or in writing within 30 days of the sale or transfer of the property.

- A. The property owner must submit to the commissioner the:
 - (1) new system owner's name and contact information; or
 - (2) new property owner's name and contact information.

B. A property owner must provide a copy of the SCLHE system permit to a buyer or lessee of the property prior to the transfer of sale or the term of the lease.

C. A property owner is responsible for the SCLHE system compliance with this part in the absence of a system owner.

Subp. 9. Termination and removal.

A. A system owner must notify the commissioner in writing within 30 days if the SCLHE system is inoperable for more than one year.

B. A well contractor must remove the SCLHE unit from the well and SCLHE in-well piping within 30 days after notifying the commissioner in writing that the SCLHE system has been inoperable for more than one year.

C. A well contractor is responsible for the handling and disposal of the heat transfer fluid according to subpart 7, item E.

D. The requirements of this chapter must be met prior to a well being put into use for another purpose. Conversion to another type of well must be in accordance with part 4725.1810, subpart 7.

Statutory Authority: *MS s 103I.101; 103I.208*

History: *49 SR 1261*

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