

## Draft Minnesota Rules, chapter 4725 revision, v5

This is a DRAFT document. Rule draft revision language is subject to change following additional review. Language additions are underlined. Existing language proposed for removal is stricken with a ~~strike-out~~.

1    **4725.0100 DEFINITIONS.**

2           Subp. 41b. **Remedial well.** "Remedial well" means a ~~water supply~~ well used to lower a  
3 groundwater level to control or remove contamination in groundwater and excludes horizontal  
4 trenches, and sumps or pits less than ten feet deep.

5           Subp. 47b. **Submerged closed loop heat exchanger.** "Submerged closed loop heat  
6 exchanger" or "SCLHE" has the meaning given in Minnesota Statutes, section 103I.005,  
7 subdivision 17a.

8           Subp. 47c. **Submerged closed loop heat exchanger device.** "Submerged closed loop  
9 heat exchanger device" or "SCLHE device" means that portion of a SCLHE designed to transfer  
10 heat between the heat transfer fluid and groundwater.

11           Subp. 47d. **Submerged closed loop heat exchanger piping.** "Submerged closed loop  
12 heat exchanger piping" or "SCLHE piping" means piping and fittings of a SCLHE used to  
13 convey heat transfer fluid and includes:

14           A. piping and fittings located between the building and the well;

15           B. piping and fittings installed in the well; and

16           C. fittings connecting the piping in items A and B to the pitless unit.

17           Subp. 47e. **Submerged closed loop heat exchanger system.** "Submerged closed loop  
18 heat exchanger system" or "SCLHE system" means one or more SCLHE connected to a building  
19 or network of buildings joined with SCLHE piping.

20 Subp. 47f. Submerged closed loop heat exchanger system owner. “Submerged closed  
21 loop heat exchanger system owner” or “system owner” means a person that owns and is  
22 responsible for overseeing the operation of the SCLHE system.

23 Subp. 50a. **Water-supply well.** "Water-supply well" has the meaning given in Minnesota  
24 Statutes, section 103I.005, subdivision 20a., ~~and includes wells used:~~

25 ~~A. for potable water;~~

26 ~~B. for irrigation;~~

27 ~~C. for agricultural, commercial, or industrial water supply;~~

28 ~~D. for heating or cooling;~~

29 ~~E. as a remedial well; or~~

30 ~~F. for testing water yields for irrigation, commercial or industrial uses, residential supply,~~  
31 ~~or a public water system.~~

32 Subp. 51. **Well.** "Well" has the meaning given in Minnesota Statutes, section  
33 103I.005, subdivision 21, and includes water-supply wells, monitoring wells, remedial wells, and  
34 dewatering wells.

35 **4725.0150 INCORPORATIONS BY REFERENCE AND ABBREVIATIONS.**

36 H. NSF International, 789 Dixboro Road, P.O. Box 130140, Ann Arbor, Michigan  
37 48113.

38 (2) ANSI/NSF 60-2018, "Drinking Water Treatment Chemicals - Health Effects."

39 K. International Code Council, 200 Massachusetts Ave, NW, Suite 250, Washington,  
40 DC, 2000, “2024 International Mechanical Code (IMC)”, chapter 12.

41 **4725.0200 APPLICATION TO ALL WELLS AND BORINGS.**

42 Subpart 1. **Applicability.** This chapter applies to all wells and borings, except exploratory

43 borings regulated under chapter 4727 and those wells and borings specifically exempted by  
44 Minnesota Statutes, chapter 103I, bored geothermal exchange devices, groundwater thermal  
45 exchange devices, and SCLHE.

46 Subp. 4. **Access to information and property.** Upon presentation of credentials, the  
47 commissioner or an employee or agent authorized by the commissioner, may examine records or  
48 data related to matters governed by Minnesota Statutes, chapter 103I, and section 144.99, of any  
49 person subject to regulation under Minnesota Statutes, chapter 103I, and, for the purpose of taking  
50 an action authorized under statute or rule, or otherwise identified in Minnesota Statutes, section  
51 144.99, subdivision 1, relating to the enforcement of this chapter, may:

52 C. obtain and analyze water, air, and waste drill cuttings; ~~and~~

53 D. inspect drill holes and drilled, sealed, or repaired wells and borings; and-

54 E. inspect groundwater thermal exchange devices and SCLHE.

55 This authority must be exercised during regular working hours of Department of Health  
56 inspectors with respect to inspections of bored geothermal heat exchangers, ~~and~~ groundwater  
57 thermal exchange devices, and SCLHE, and at reasonable times in all other cases.

58 **4725.0350 FEES APPLICABLE TO THIS CHAPTER.**

59 Subp. 6. **Permit fees.** A nonrefundable permit fee as specified in Minnesota Statutes,  
60 chapter 103I, must be paid by a property owner or owner's agent:

61 E. for ~~construction~~ installation and injection of water by a groundwater thermal exchange  
62 device in addition to the notification fee specified in subpart 5;

63 H. for construction of a boring to install an elevator hydraulic cylinder; and

64 I. for installation of a SCLHE system, in addition to the notification fee specified in subpart  
65 5.

66 **LICENSING AND REGISTRATION**

67 **4725.0475 ACTIVITIES REQUIRING LICENSURE OR REGISTRATION.**

68 Subpart 1. **Activity requiring licensure or registration.** Except for those persons  
69 exempted under Minnesota Statutes, section 103I.205, subdivision 4, paragraph (e), a person  
70 must hold a license or registration issued by the commissioner to:

71 B. construct or seal a bored geothermal heat exchanger;

72 C. ~~install or remove~~ or a groundwater thermal exchange device or SCLHE;

73 D. ~~construct, repair, or seal~~ an elevator boring;

74 E. ~~install or remove~~ a well pump or pumping equipment;

75 F. ~~install, modify, or remove~~ a screen, pitless unit, or pitless adapter; or

76 G. ~~modify or materially affect~~ the yield, water quality, diameter, depth, or casing of a  
77 well or boring including:

78 Subp. 3. **Well contractor license.** A person must be licensed as a well contractor to:

79 B. install or remove a pump or pumping equipment; ~~and~~

80 C. any of the activities in subpart 1, item G~~F~~; and

81 D. install or remove a SCLHE or groundwater thermal exchange device.

82 Subp. 4. **Limited well/boring contractor licenses.** A person performing any of the  
83 activities in items A to F must have either a well contractor's license or have a separate limited  
84 well/boring contractor license for each of the limited licensure areas listed in items A to F:

85 A. limited licensure to construct, repair, modify as specified in subpart 1, item G~~F~~, or seal  
86 a dug well or drive-point well;

87 C. limited licensure to install a well pump or pumping equipment, or any of the activities  
88 in subpart 1, item G~~F~~, subitems (1) and (2);

89 E. limited licensure to construct, repair, seal, or modify as specified in subpart 1, item  
90 GF, a dewatering well; or

91 F. limited licensure to construct, repair, seal, or modify as specified in subpart 1, item  
92 GF, a bored geothermal heat exchanger.

93 **PERMITS AND NOTIFICATIONS**

94 **4725.1834 SUBMERGED CLOSED LOOP HEAT EXCHANGER PERMIT** [new rule  
95 **part]**

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

99 A. A new SCLHE system permit application must be submitted to the commissioner, in  
100 accordance with subpart 2, if a well contractor other than the one listed on the SCLHE system  
101 permit will install the SCLHE system.

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

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

106 **Subp. 2. Submerged Closed Loop Heat Exchanger System Permit Application.**

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

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

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

112 B. A SCLHE system permit application must include:

- 113 (1) the name, address, and signature of the:
- 114 (a) well contractor installing the SCLHE system;
- 115 (b) system owner; and
- 116 (c) property owner, if not the system owner;
- 117 (2) the license number of the well contractor installing the SCLHE system;
- 118 (3) the proposed location of the SCLHE system including:
- 119 (a) township number, range number, section number, and one quartile; and
- 120 (b) street address, if assigned;
- 121 (4) the construction record for each existing well proposed for use in the SCLHE
- 122 system;
- 123 (5) a description of all proposed wells for use in the SCLHE system including
- 124 proposed:
- 125 (a) aquifer the wells will be completed within;
- 126 (b) total well depths;
- 127 (c) bore hole diameters;
- 128 (d) casing diameters;
- 129 (e) casing depths;
- 130 (f) grouting materials; and
- 131 (g) pitless unit makes and models;
- 132 (6) proposed SCLHE system specifications including:
- 133 (a) heat transfer fluid additives including:

- 134 i. product names and manufacturers;  
135 ii. safety data sheets; and  
136 iii. maximum concentrations of products proposed for use;

137 (b) SCLHE piping specifications including:

- 138 i. diameters;  
139 ii. material types and corresponding standards;  
140 iii. wall thicknesses; and  
141 iv. pressure ratings;

142 (c) SCLHE device specifications including:

- 143 i. diameter;  
144 ii. material types and corresponding standards; and  
145 iii. pressure rating;

146 (d) maximum SCLHE system design operating pressure;

147 (e) submersible pump maximum design flow rate; and

148 (f) types of seals or packers to be installed in a well;

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

151 (a) design documents with locations of monitoring and mitigation devices;

152 (b) proposed monitoring parameters and frequency;

153 (c) a description of conditions that will trigger a system alert or shut-off;

154 and

155 (d) a description of alert or shut-off response activities including a list of  
156 entities and roles of persons involved in monitoring and response;

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

158 (a) all existing and proposed well locations where SCLHE will be  
159 installed; and

160 (b) distances of the wells to:

161 i. property lines;

162 ii. structures;

163 iii. utilities listed in part 4725.2150;

164 iv. water bodies listed in part 4725.4350, subpart 1;

165 v. all other wells on the property, if applicable; and

166 vi. contamination sources listed in part 4725.4450;

167 (9) cross-sectional diagrams of all wells in a proposed SCLHE system, unless  
168 well construction is the same, then one diagram may be required. Diagrams must include:

169 (a) the existing or anticipated geology at the well location;

170 (b) existing or proposed well construction information including:

171 i. total well depth;

172 ii. casing depth;

173 iii. bore hole diameter;

174 iv. casing diameter;

175 v. grouting intervals;



176 vi. gravel packed intervals and screened intervals, if applicable;  
177 and  
178 vii. pitless unit depth and diameter;  
179 (c) the existing or anticipated static water level;  
180 (d) proposed SCLHE installation information including the depth:  
181 i. and length of the SCLHE device;  
182 ii. of seals or packers installed in the well; and  
183 iii. of the submersible pump;  
184 (10) an inventory of known groundwater contamination sites and plumes within  
185 one-mile of the proposed submerged closed loop heat exchanger wells. The inventory must  
186 include:  
187 (a) a list of mapped groundwater contamination sites and plumes  
188 generated from publicly available information on local, state, and federal websites. The list must  
189 include:  
190 i. site name;  
191 ii. description of contamination;  
192 iii. status of contamination; and  
193 iv. source of information;  
194 (b) a scaled map including:  
195 i. proposed SCLHE wells;  
196 ii. a line showing the one-mile boundary from the proposed  
197 SCLHE wells; and

198 iii. identified sites and plumes within the one-mile boundary; and

199 (11) any additional information the commissioner deems necessary to protect  
200 public health and safety of the groundwater.

201 Subp. 3. Permit application denial. The commissioner must deny a SCLHE system  
202 permit application according to part 4725.1845 and Minnesota Statutes section 144.99.

203 Subp. 4. Submerged Closed Loop Heat Exchanger System Permit conditions. The  
204 well contractor installing the SCLHE system, system owner, and property owner where the  
205 SCLHE system is located must comply with this chapter and permit conditions the commissioner  
206 deems necessary to protect public health and safety of the groundwater.

207 Subp. 5. Submerged Closed Loop Heat Exchanger System Permit modifications.

208 A. The system owner must request the commissioner's approval to change the following  
209 permitted SCLHE system specifications including:

210 (1) wells;

211 (2) well casing diameters;

212 (3) aquifer the well will be completed within;

213 (4) grouting material;

214 (5) well completion types, such as screened or open bore hole;

215 (6) SCLHE piping specifications including:

216 (a) material types and corresponding standards;

217 (b) wall thicknesses; or

218 (c) pressure ratings;

219 (7) SCLHE device specifications including:

- 220                    (a) diameter;
- 221                    (b) material types and corresponding standards; or
- 222                    (c) pressure rating;
- 223                    (8) maximum SCLHE system design operating pressure;
- 224                    (9) submersible pump maximum design flow rate;
- 225                    (10) heat transfer fluid additives;
- 226                    (11) heat transfer fluid additive maximum use concentrations; or
- 227                    (12) plan for monitoring and mitigating leaks in the SCLHE system.

228                    B. The commissioner must approve modifications in writing for Item A prior to  
229 implementing changes.

230                    C. The property owner must notify the commissioner in writing of changes to a property  
231 owner or system owner.

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

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

237                    (1) SCLHE system permit number;

238                    (2) name, address, and signature of:

239                    (a) the system owner; and

240                    (b) well contractor installing the SCLHE system;

241                    (3) SCLHE piping specifications including:

- 242                    (a) diameters;
- 243                    (b) material types used and corresponding standards;
- 244                    (c) wall thicknesses; and
- 245                    (d) pressure ratings;
- 246                    (4) types of seals or packers in the well;
- 247                    (5) maximum SCLHE system design operating pressure;
- 248                    (6) SCLHE device specifications including:
- 249                    (a) diameter;
- 250                    (b) materials types used and corresponding standards; and
- 251                    (c) pressure rating;
- 252                    (7) heat transfer fluid additives used including:
- 253                    (a) product names and manufacturers;
- 254                    (b) safety data sheets; and
- 255                    (c) maximum concentrations of products used;
- 256                    (8) submersible pump including:
- 257                    (a) make and model; and
- 258                    (b) maximum design flow rate;
- 259                    (9) pitless unit make and model; and
- 260                    (10) cross-sectional diagrams of all wells in the SCLHE system, unless well
- 261 construction is the same, then one diagram may be required. Diagrams must include:

- 262                    (a) Minnesota unique well numbers;
- 263                    (b) geology observed during well construction;
- 264                    (c) well construction information including:
- 265                            i. total well depth;
- 266                            ii. casing depth;
- 267                            iii. borehole diameter;
- 268                            iv. casing diameter;
- 269                            v. grouting material;
- 270                            vi. grouting intervals;
- 271                            vii. gravel packed intervals and screened intervals, if applicable;
- 272    and
- 273                            viii. pitless unit installation depth and diameter;
- 274                    (d) static water level measured in the well;
- 275                    (e) installation information in the well including depth:
- 276                            i. and length of SCLHE piping;
- 277                            ii. and length of SCLHE device;
- 278                            iii. of seals or packers; and
- 279                            iv. of submersible pump.

280                    **Subp. 7. Submerged closed loop heat exchanger system maintenance.**

281                    A. Maintenance of a SCLHE device and SCLHE piping in a well must be conducted by a

282    well contractor.

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

285 C. Treatment or rehabilitation chemicals must:

286 (1) not be circulated within the SCLHE device and submerged closed heat  
287 exchanger piping when installed in the well; and

288 (2) be removed from the SCLHE device and submerged closed heat exchanger  
289 piping prior to re-installation in the well.

290 D. A well contractor must ensure the heat transfer fluid is:

291 (1) not released into the well during the removal of the SCLHE device and  
292 SCLHE piping from the well; and

293 (2) disposed of according to applicable Minnesota State Statutes and Rules, and  
294 local ordinances or regulations.

295 E. A well contractor must pressure test the SCLHE system following re-installation of the  
296 SCLHE device and SCLHE piping in the well according to part 4725.7075, subpart 4.

297 F. The system owner must conduct leak monitoring and mitigation in accordance with the  
298 plan approved in the SCLHE system permit.

299 G. The system owner must notify the:

300 (1) commissioner of pressure loss or leakage from the SCLHE system piping that  
301 causes an alert or shut-off within 24 hours after the owner becomes aware of the loss or leak; and

302 (2) Minnesota duty officer according to Minnesota Statutes, section 115.061, of a  
303 SCLHE system leak.

304 H. The system owner is responsible to ensure a leak is repaired and mitigated.

305 **Subp. 8. Submerged closed loop heat exchanger system disclosure and ownership. A**  
306 **property owner must notify the commissioner within 30 days of the sale or transfer of the**

307 property.

308 A. The property owner must submit to the commissioner the:

309 (1) new system owner's name and contact information; or

310 (2) new property owner's name and contact information.

311 B. A property owner must provide a copy of the SCLHE system permit to a buyer or

312 lessee of the property prior to the transfer of sale or the term of the lease.

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

314 absence of a system owner.

315 **Subp. 9. Termination and removal.**

316 A. A system owner must notify the commissioner in writing within 30 days if the SCLHE

317 system is inoperable for more than one year.

318 B. A well contractor must remove the SCLHE device and SCLHE piping from the well

319 within 30 days after the SCLHE system has been inoperable for one year.

320 C. A well contractor must ensure the heat transfer fluid is handled and disposed of in

321 accordance with subpart 6, item D.

322 D. A well must meet the requirements of this chapter to be put into use for another

323 purpose. Conversion of type of well must be in accordance with part 4725.1810, subpart 7.

324 **4725.1842 APPROVAL OF ~~CONSTRUCTION PERMITS~~ APPLICATION.**

325 **4725.1845 DENIAL OF ~~CONSTRUCTION PERMIT~~ APPLICATION.**

326 Subpart 1. **Grounds for denial of application.** The commissioner may deny a permit

327 application or revoke a permit for construction of a monitoring well, ~~groundwater thermal exchange~~

328 ~~device~~, bored geothermal heat exchanger, or elevator boring, or installation of a groundwater thermal

329 exchange device or SCLHE if:

330 A. the person constructing the well or boring or installing the SCLHE or groundwater thermal  
331 exchange device is not licensed or ~~registered~~ according to this chapter;

332 **WELL AND BORING GENERAL CONSTRUCTION AND USE REQUIREMENTS**

333 **4725.2010 APPLICABILITY.**

334 The general construction and use requirements specified in parts 4725.2010 to 4725.3875  
335 apply to all wells and borings except exploratory borings regulated under chapter 4727. The  
336 additional requirements or exemptions in parts:

337 A. 4725.4050 to 4725.6050 apply to water-supply wells; ~~The additional requirements or~~  
338 ~~exemptions in part~~

339 B. 4725.6150 apply to dewatering wells; ~~The additional requirements or exemptions in~~  
340 ~~parts~~

341 C. 4725.6450 to 4725.6850 apply to monitoring wells and cased environmental bore  
342 holes; ~~The additional requirements or exemptions in part~~

343 D. 4725.7050 apply to bored geothermal heat exchangers; ~~The additional requirements~~  
344 ~~or exemptions in part~~

345 E. 4725.7250 apply to elevator borings; ~~The additional requirements or exemptions in~~  
346 ~~part~~

347 F. 4725.7450 apply to environmental bore holes; and

348 G. 4725.7075 apply to SCLHE.

349 **4725.3725 CHEMICAL TREATMENT AND REHABILITATION.**

350 Subpart 1. **Treatment chemicals.** Chemicals placed in a well or boring to increase the  
351 yield, remove or treat contaminants or objectionable tastes or odors, or rehabilitate the well or  
352 boring must meet the requirements of ANSI/NSF Standard 60-2016 as determined by a person  
353 accredited by ANSI. Sodium or calcium hypochlorite may be used if registered by the United



354 States Environmental Protection Agency according to the Federal Insecticide, Fungicide, and  
355 Rodenticide Act (FIFRA), section 3(c)(7)(A), as an antimicrobial pesticide for use in potable  
356 water. Treatment chemicals must be neutralized or removed from the well, boring, and any  
357 connected piping systems prior to use of the well or boring. This part does not apply to chlorine  
358 or other treatment chemicals added to a water distribution system, or to a drilling additive used  
359 according to part 4725.2950.

## 360 **WATER-SUPPLY WELLS**

### 361 **4725.4250 LIMESTONE OR DOLOMITE WATER-SUPPLY WELLS.**

362 Subpart 1. **Applicability.** This part applies to water-supply wells and remedial wells,  
363 ~~including private drinking water supply, public drinking water supply, irrigation, commercial,~~  
364 ~~groundwater thermal exchange, and remedial wells completed in or below limestone or dolomite.~~  
365 ~~This part does not apply to borings, monitoring wells, or dewatering wells.~~

### 366 **4725.5475 HYDROFRACTURING WATER-SUPPLY WELLS.**

367 Subpart 1. **Scope.** This part applies to hydrofracturing a water-supply well, as defined in  
368 part 4725.0100, subpart 30f. A remedial ~~water supply~~ well, or other well or boring regulated  
369 by this chapter, must not be hydrofractured. Hydrofracturing must be done by a well contractor  
370 licensed according to Minnesota Statutes, section 103I.525.

#### 371 Subp. 2. **Injection materials, water, and proppants.**

372 B. Additives must meet the requirements of ANSI/NSF Standard 60-~~2016~~ as  
373 determined by a person accredited by ANSI.

### 374 **4725.5550 WATER-SUPPLY WELL DISINFECTION.**

375 Subp. 4. **Disinfection materials.** Chlorine materials must meet the requirements of  
376 ANSI/NSF Standard 60-~~2016~~ as determined by a person accredited by ANSI or be registered by  
377 the United States Environmental Protection Agency according to the Federal Insecticide,  
378 Fungicide, and Rodenticide Act (FIFRA), section 3(c)(7)(A), as an antimicrobial pesticide for use  
379 in potable water. Chlorine compounds with additives such as perfumes or algacides must not be

380 used for disinfection. An alternate disinfection material may be used if the material is a biocide  
381 meeting the material and use standards of this part and provides biocidal activity equivalent to  
382 the chlorine concentrations and contact times required in this part.

383 Subp. 7. SCLHE exemption. This part does not apply to a SCLHE system.

384 **4725.6050 REMEDIAL WATER SUPPLY WELLS.**

385 **4725.7050 BORED GEOTHERMAL HEAT EXCHANGERS.**

386 Subpart 1. **Construction.** A bored geothermal heat exchanger must be constructed  
387 according to the construction standards in this part and the general construction standards in parts  
388 4725.2010 to 4725.3875.

389 A. Bored geothermal heat exchanger piping must be high-density polyethylene  
390 or cross-linked polyethylene that meets the following requirements:

391 (1) for high-density polyethylene:

392 (a) the walls of the pipe with a diameter of 2 inches and smaller, or is  
393 located more than 15 feet below ground surface, must be SDR 11 or thicker;

394 (b) pipe with a diameter greater than 2 inches, and located less than 15 feet  
395 below ground surface, must be SDR 17 or thicker;

396 (c) ~~(b)~~ pipe must meet ASTM Standard D3035-15 or ASTM Standard  
397 F714-13;

398 (d) ~~(e)~~ socket fusion and butt fusion connections must be made in  
399 accordance with ASTM Standard F2620-19, and electrofusion connections must be made in  
400 accordance with ASTM Standard F1055-16; and

401 (e) ~~(d)~~ socket fittings must be manufactured in accordance with  
402 ASTM Standard D2683-14;

403 **4725.7075 SUBMERGED CLOSED LOOP HEAT EXCHANGER SYSTEM**

404 **INSTALLATION** [new rule part]

405 Subpart 1. **Installation.** A SCLHE system must be installed according to standards in  
406 this part.

407 A. A well used for a SCLHE system must meet the requirements of this chapter and  
408 Minnesota Statutes, chapter 103I.

409 B. A well contractor must install the SCLHE system within 18 months of the original  
410 SCLHE system permit approval to complete the SCLHE system installation.

411 C. A well contractor must install a SCLHE device and SCLHE piping in a well.

412 D. A well contractor must provide notice to the commissioner electronically or in  
413 writing at least 24 business hours prior to the initial installation of a SCLHE device and  
414 SCLHE piping in the well.

415 E. SCLHE system piping connections to a water-supply well or a potable water-supply  
416 system must be protected with a backflow prevention device as specified in UPC sections  
417 603.0 to 603.5.23.4, as incorporated by part 4714.0050.

418 F. A heat transfer fluid sampling port must be installed on a SCLHE system.

419 G. Buried SCLHE piping from the well to the building must be marked by:

420 (1) tracer wire; or

421 (2) marking tape detectable from the ground surface.

422 **Subp. 2. Submerged closed loop heat exchanger device.**

423 A. A SCLHE device must have a minimum pressure rating that exceeds 1.5 times the  
424 maximum SCLHE system design operating pressure or 100 psi, whichever is greater, plus the  
425 hydrostatic pressure on the device when installed in the well.

426 B. Materials and finishes used in a SCLHE device must not exceed eight percent lead  
427 except that solders and flux must not contain more than 0.2 percent lead.

428 C. Materials must not contain constituents that would cause groundwater concentrations  
429 to exceed a regulatory or advisory action value under parts 4717.7810-4717.7900.

430 **Subp. 3. Submerged closed loop heat exchanger piping.**

431 A. SCLHE piping and fittings between a well and building must comply with the:

432 (1) standards listed in IMC table 1210.4 for piping;

433 (2) standards listed in IMC table 1210.5 for fittings; and

434 (3) requirements of IMC section 1210.6.

435 B. SCLHE piping and fittings between a well and building must have a minimum  
436 pressure rating of 100 psi or 1.5 times the maximum SCLHE system design operating pressure,  
437 whichever is greater.

438 C. SCLHE piping and fittings in the well must comply with the:

439 (1) standards listed in IMC table 1202.4 for piping;

440 (2) standards listed in IMC table 1202.5 for fittings; and

441 (3) requirements of IMC section 1204.

442 D. SCLHE piping and fittings in the well must have a minimum pressure rating that  
443 exceeds 1.5 times the maximum SCLHE system design operating pressure or 100 psi,  
444 whichever is greater, plus the hydrostatic pressure on the deepest pipe installed in a well.

445 **Subp. 4. Pressure test.**

446 A. A system owner must ensure a SCLHE system is successfully pressure tested after it  
447 is installed and prior to circulation of heat transfer fluid additives, or any other fluid in the  
448 SCLHE system. Potable water without additives may be circulated to purge the SCLHE system  
449 prior to the pressure test.

450 B. All portions of the SCLHE system used to convey heat transfer fluid must be

451 pressure tested including the:

452 (1) SCLHE piping;

453 (2) SCLHE device; and

454 (3) pitless unit.

455 C. The SCLHE system must be pressure tested:

456 (1) in one continuous loop from the building or buildings to all the wells; or

457 (2) in individual continuous loops from the building or buildings to each well.

458 D. A system owner must provide notice to the commissioner electronically or in writing  
459 at least 24 business hours prior to the pressure test.

460 E. A system owner is exempt from Item D in the event of an imminent threat to public  
461 health or safety. The system owner must notify the commissioner within 12 hours of  
462 completing the pressure test.

463 F. A pressure test must:

464 (1) be conducted by a well contractor, bonded mechanical contractor, or  
465 licensed plumber;

466 (2) be witnessed by an MDH inspector, state or local building official, licensed  
467 plumber, or bonded mechanical contractor, if the pressure test is not conducted by a licensed  
468 plumber or bonded mechanical contractor;

469 (3) use potable water;

470 (4) be conducted at 1.5 times the maximum SCLHE system design operating  
471 pressure or 100 psi, whichever is greater, as measured at or above the ground surface near the  
472 well; and

473 (5) be conducted for 30 minutes.

474 G. For purposes of this part, a successful pressure test maintains a constant pressure  
475 without adding fluid during the duration of the pressure test.

476 H. The system owner is responsible for maintaining complete pressure test records  
477 according to this part. Upon request, copies of records must be:

478 (1) made available to the commissioner;

479 (2) legible and recognizable; and

480 (3) provided in an electronic format.

481 I. A pressure test record must include:

482 (1) SCLHE system permit number;

483 (2) date and time of conducted pressure test;

484 (3) duration of conducted pressure test;

485 (4) test method;

486 (5) hydrostatic pressure on the SCLHE device;

487 (6) information of the person conducting and witnessing the pressure test, if  
488 applicable, includes:

489 (a) name and signature;

490 (b) company name; and

491 (c) license or registration number.

492 J. A SCLHE system must be pressure tested according to items A-E when a SCLHE  
493 device or SCLHE piping is removed from the well and reinstalled or replaced.

494 **Subp. 5. Heat transfer fluid.**

495 A. Heat transfer fluid must be sourced from a potable water supply.

496 B. Heat transfer fluid may be amended with additives that are:

497 (1) certified ANSI/NSF-60 Standard; and

498 (2) meet the requirements of ANSI/NSF-60 as determined by a person  
499 accredited by ANSI to be certified.

500 C. A system owner must ensure a permanent indelible sign:

501 (1) is attached to all fill locations in the building; and

502 (2) includes language specifying:

503 (a) heat transfer fluid must be only potable water;

504 (b) any heat transfer fluid additives must be approved, according to item

505 B, subitem 2; and

506 (c) notify MDH at 651-201-4600 at least 24 hours before adding or  
507 replacing fluids.