

1.1 **Department of Health**

1.2 **Proposed Expedited Permanent Rules Relating to Exploratory Boring**

1.3 **4727.0050 GENERAL.**

1.4 Parts 4727.0050 to 4727.1250 are adopted pursuant to, and must be read in conjunction
1.5 with, Minnesota Statutes, chapter 103I, relating to wells, borings, and underground uses,
1.6 and Minnesota Statutes, section 93.514, relating to exploration and appraisal of gas and oil
1.7 resources.

1.8 **4727.0100 DEFINITIONS.**

1.9 Subpart 1. **Scope.** The terms used in parts 4727.0050 to 4727.1250 have the meanings
1.10 given them in this part and in Minnesota Statutes, ~~section~~ sections 93.514, paragraph (c),
1.11 and 103I.005.

1.12 *[For text of subparts 2 to 9a, see Minnesota Rules]*

1.13 Subp. 9b. **Encounter gas.** "Encounter gas" means a sustained presence of natural gas
1.14 in an exploratory boring for a period of at least 24 hours, identified through sensory indicators
1.15 or detected with a gas monitoring device.

1.16 *[For text of subparts 10 to 16e, see Minnesota Rules]*

1.17 Subp. 16f. **Natural gas.** "Natural gas" or "gas" means both hydrocarbon and
1.18 nonhydrocarbon gases.

1.19 *[For text of subparts 17 to 27, see Minnesota Rules]*

1.20 **4727.0150 INCORPORATION BY REFERENCE AND ABBREVIATIONS.**

1.21 This part lists documents, specifications, and standards that are incorporated by reference
1.22 in this chapter. The material is not subject to frequent change and is available for loan or
1.23 inspection through the Minitex interlibrary loan system. The abbreviations listed in
1.24 parentheses after the source names are used in this chapter.

2.1 [For text of item A, see Minnesota Rules]

2.2 B. American Petroleum Institute (API), distributed by Global Engineering
2.3 Documents, 15 Inverness Way East, Englewood, CO 80112-5776:

2.4 (1) API Specification 13A, "Oil Well Drilling Fluid Materials," 11th Edition,
2.5 July 1985 and Supplement One to the 11th Edition; ~~and~~

2.6 (2) API Specification 5L, "Line Pipe" (~~May 31, 1985~~); and

2.7 (3) API Specification 5CT, "Casing and Tubing."

2.8 C. American National Standards Institute (ANSI), 1819 L Street NW, Suite 600,
2.9 Washington, DC 20036₂:

2.10 (1) ~~ANSI Schedule 5 and Schedule 40, "Dimensions of Welded and Stainless~~
2.11 ~~Steel Pipe" as contained in the appendix to ASTM Standard A312-86a; and A312.~~

2.12 (2) ~~ANSI Standard Z34.1-1987, "Third-Party Certification Program."~~

2.13 D. ASTM International (ASTM), 100 Barr Harbor Drive, West Conshohocken,
2.14 PA 19428-2959:

2.15 (1) ASTM Standard ~~A53-90b~~ A53, "Standard Specification for Pipe, Steel,
2.16 Black and Hot-Dipped, Zinc-Coated, Welded and Seamless";

2.17 (2) ASTM Standard ~~A589-89a~~ A589, "Standard Specification for Seamless
2.18 and Welded Carbon Steel Water-Well Pipe," specifications for Type I, II, and III only;

2.19 (3) ASTM Standard ~~A312-86a~~ A312, "Standard Specification for Seamless
2.20 and Welded Austenitic Stainless Steel Pipe," including the appendix;

2.21 [For text of subitems (4) to (6), see Minnesota Rules]

2.22 (7) ASTM Standard ~~D2466-90a~~ D2466, "Standard Specification for
2.23 Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40";

3.1 [For text of subitem (8), see Minnesota Rules]

3.2 (9) ASTM Standard ~~F480-88~~ F480, "Standard Specification for Thermoplastic
3.3 Water Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR)."

3.4 [For text of items E and F, see Minnesota Rules]

3.5 G. NSF International (NSF), 789 Dixboro Road, Ann Arbor, Michigan 48113:

3.6 (1) ~~NSF~~ NSF/ANSI/CAN Standard ~~14-1990~~ 14, "Plastic Piping System
3.7 Components and Related Materials";

3.8 (2) ~~NSF~~ NSF/ANSI/CAN Standard ~~60-1988~~ 60, "Drinking Water Treatment
3.9 Chemicals - Health Effects"; and

3.10 (3) ~~NSF~~ NSF/ANSI/CAN Standard ~~61-1991~~ 61, "Drinking Water System
3.11 Components - Health Effects."

3.12 [For text of items H and I, see Minnesota Rules]

3.13 **4727.0200 APPLICABILITY; SCOPE.**

3.14 Parts 4727.0050 to 4727.1250 apply to all exploratory borings constructed in Minnesota,
3.15 except those specifically exempted by Minnesota Statutes, section 103I.113, and do not
3.16 confer any rights or ability to a person to use an exploratory boring to extract gas or oil for
3.17 production. Those aspects covered are the licensing of explorers, the examination of
3.18 responsible individuals, the construction of exploratory borings, and the proper sealing of
3.19 exploratory borings to protect the quality of groundwater aquifers. This chapter governs
3.20 exploratory borings and does not regulate the construction or sealing of a well, as defined
3.21 by Minnesota Statutes, section 103I.005, subdivision 21, or conversion of borings to wells.

3.22 **4727.0910 NOTIFICATION OF EXPLORATORY BORING.**

3.23 This part applies to the construction or modification of exploratory borings.

3.24 [For text of items A and B, see Minnesota Rules]

4.1 C. When notification is required, the explorer must submit to the commissioner
4.2 of health and the commissioner of natural resources a written notification containing the
4.3 following:

4.4 *[For text of subitems (1) to (3), see Minnesota Rules]*

4.5 (4) the name of the certified responsible individual; ~~and~~

4.6 (5) the name and address of the property owner; and

4.7 (6) a disclosure of intent to explore for natural gas.

4.8 *[For text of items D and E, see Minnesota Rules]*

4.9 **4727.0920 TEMPORARY AND PERMANENT SEALING REPORT.**

4.10 *[For text of subparts 1 and 2, see Minnesota Rules]*

4.11 Subp. 3. **Permanent sealing report.** In addition to the information in subpart 2, a
4.12 permanent sealing report must contain the following information:

4.13 A. the grout or sealing materials, quantities, and intervals where the grout was
4.14 placed; ~~and~~

4.15 B. a description of any obstructions removed or remaining in the exploratory
4.16 boring; and

4.17 C. the depths at which gas was encountered during drilling, if present for at least
4.18 24 hours.

4.19 *[For text of subpart 4, see Minnesota Rules]*

4.20 **4727.0925 USE OF EXPLORATORY BORINGS.**

4.21 Subpart 1. **Injection or disposal prohibited.** An exploratory boring must not be used
4.22 for injection or disposal of surface water, groundwater, or any other liquid, gas, or chemical,₂
4.23 except injection into a boring:

5.1 A. if open to atmospheric pressure; and

5.2 B. using water, air, and drilling fluids, according to part 4727.0935:

5.3 (1) to drill;

5.4 (2) to remove fluids or cuttings from the boring; and

5.5 (3) for downhole logging.

5.6 [For text of subpart 2, see Minnesota Rules]

5.7 **4727.0935 DRILLING FLUIDS.**

5.8 [For text of subpart 1, see Minnesota Rules]

5.9 Subp. 2. **Drilling additives.** Drilling additives must ~~meet the requirements of NSF~~
 5.10 be NSF/ANSI/CAN Standard 60-1988 as determined by a person accredited by ANSI under
 5.11 ANSI Standard Z34.1-1987 60. A drilling additive is a substance added to the air or water
 5.12 used in the fluid system of drilling an exploratory boring.

5.13 **4727.0945 NUCLEAR LOGGING.**

5.14 Exploratory borings logged with ~~naturally occurring or accelerator-produced~~ radioactive
 5.15 materials, as defined in part ~~4730.0100~~ 4731.0100, must comply with ~~part 4730.2750~~ chapter
 5.16 4731.

5.17 **4727.0946 EXPLORATORY BORINGS ENCOUNTERING GAS.**

5.18 Subpart 1. Notification. An explorer must notify the commissioners of health and
 5.19 natural resources in writing within 24 hours if an exploratory boring encounters gas that
 5.20 has not dissipated.

5.21 Subp. 2. Permanent sealing.

5.22 A. Unless gas is no longer present, an explorer must permanently seal an
 5.23 exploratory boring:

- 6.1 (1) according to part 4727.1250; and
- 6.2 (2) from the bottom of the boring to within two feet of the established ground
- 6.3 surface.

6.4 B. An exploratory boring must be permanently sealed according to item A:

- 6.5 (1) within ten days of encountering gas; or
- 6.6 (2) within 90 days of encountering gas, if the boring is constructed:
 - 6.7 (a) to prevent the uncontrolled migration of gas out of the boring;
 - 6.8 (b) using casing and grouting to prevent interconnection of gas and
 - 6.9 water-bearing fractures or voids within the boring; and
 - 6.10 (c) according to parts 4727.0950 to 4727.0985.

6.11 Subp. 3. **Prohibition of enhancing gas flow.** Methods or techniques intended to

6.12 enhance gas flow are prohibited according to part 4727.0925, including hydraulic fracturing,

6.13 acid stimulation, propellant stimulation, surfactant treatment, and explosive fracturing.

6.14 **4727.0950 CASING REQUIREMENTS FOR TEMPORARILY SEALED**

6.15 **EXPLORATORY BORINGS.**

6.16 *[For text of subparts 1 to 14, see Minnesota Rules]*

6.17 **Subp. 15. Steel casing requirements.**

6.18 A. Steel casing used in the construction of a temporarily sealed exploratory boring

6.19 must be produced to the following specifications:

- 6.20 (1) ASTM Standard ~~A53-90b~~ A53;
- 6.21 (2) ASTM Standard ~~A589-89a~~ A589, Types I, II, and III;
- 6.22 (3) API Specification 5L;

7.1 (4) DCDMA Technical Manual, section B designations C80, R80, or RC100,
7.2 and section D flush joint casing standards; ~~or~~

7.3 (5) CSA Standard M253.1 - M1981 for flush joint casing; or

7.4 (6) API Specification 5CT.

7.5 *[For text of item B, see Minnesota Rules]*

7.6 Subp. 16. **Stainless steel casing requirements.** Stainless steel casing used in the
7.7 construction of a temporarily sealed exploratory boring must meet ASTM Standard ~~A312-86a~~
7.8 A312 and meet at least:

7.9 *[For text of items A and B, see Minnesota Rules]*

7.10 Subp. 17. **Plastic casing requirements.** Plastic casing and couplings used in the
7.11 construction of a temporarily sealed exploratory boring must:

7.12 A. meet ASTM Standard ~~F480-88~~ F480;

7.13 *[For text of items B and C, see Minnesota Rules]*

7.14 Subp. 18. **Additional approved plastic couplings.** In addition to plastic couplings
7.15 approved under subpart 17, couplings meeting the following requirements are also approved:

7.16 A. couplings with socket dimensions meeting the requirements of ASTM Standard
7.17 ~~F480-88~~ F480, Table 3; and

7.18 B. ANSI Schedule 40, four-inch and five-inch diameter slip x female thread and
7.19 five-inch diameter slip x male thread couplings meeting the requirements of ASTM Standard
7.20 ~~D2466-90a~~ D2466.

7.21 Subp. 19. **NSF standard for plastic material.** All plastic casings, couplings,
7.22 components, and related joining materials, including solvents, cements, or primers, used in
7.23 the construction of a temporarily sealed exploratory boring must conform with the

8.1 requirements of ~~NSF~~ NSF/ANSI/CAN Standard ~~61-1991~~ 61 or the health effects portion
8.2 of ~~NSF~~ NSF/ANSI/CAN Standard ~~14-1990~~ 14 and be tested as conforming by an agency
8.3 certified by ANSI. Conformance to the NSF standard must be coded, stamped, or marked
8.4 on the casings, couplings, and components, as well as on the containers of related joining
8.5 materials, including solvents, cements, or primers.

8.6 *[For text of subpart 20, see Minnesota Rules]*