

SENATE
STATE OF MINNESOTA
EIGHTY-SEVENTH LEGISLATURE

S.F. No. 743

(SENATE AUTHORS: JUNGBAUER)

DATE	D-PG	OFFICIAL STATUS
03/10/2011	485	Introduction and first reading Referred to Environment and Natural Resources
05/02/2011	1571a	Comm report: To pass as amended and re-refer to Health and Human Services

A bill for an act
relating to environment; providing standards for use of recycled water; providing
for natural swimming ponds; authorizing rulemaking; appropriating money;
amending Minnesota Statutes 2010, section 144.1222, subdivisions 1, 5;
proposing coding for new law in Minnesota Statutes, chapter 115.
BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. **[115.84] DEFINITIONS.**

Subdivision 1. **Approved laboratory.** "Approved laboratory" means a laboratory
certified by the commissioner of health to perform the microbiological analyses in
nonpotable water required under sections 115.84 to 115.89.

Subd. 2. **Coagulated wastewater.** "Coagulated wastewater" means oxidized
wastewater in which colloidal and finely divided suspended matter have been destabilized
and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

Subd. 3. **Conventional treatment.** "Conventional treatment" means a treatment
chain that uses a sedimentation unit process between the coagulation and filtration
processes and produces an effluent that meets the definition for disinfected tertiary
recycled water.

Subd. 4. **Disinfected secondary-2.2 recycled water.** "Disinfected secondary-2.2
recycled water" means recycled water that has been oxidized and disinfected so that
the median concentration of total coliform bacteria in the disinfected effluent does not
exceed a most probable number (MPN) of 2.2 per 100 milliliters using the bacteriological
results of the last seven days for which analyses have been completed, and the number
of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than
one sample in any 30-day period.

Subd. 5. **Disinfected secondary-23 recycled water.** "Disinfected secondary-23 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters using the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

Subd. 6. **Disinfected tertiary recycled water.** "Disinfected tertiary recycled water" means a filtered and subsequently disinfected wastewater that meets the following criteria:

(1) the filtered wastewater has been disinfected by:

(i) a chlorine disinfection process following filtration that provides a CT value (the product of total chlorine residual and modal contact time measured at the same point) of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(ii) a disinfection process that, when combined with the filtration process, has been demonstrated to inactivate or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS-2 or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration; and

(2) the median concentration of total coliform bacteria measured in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters using the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Subd. 7. **Drift.** "Drift" means the water that escapes to the atmosphere as water droplets from a cooling system.

Subd. 8. **Drift eliminator.** "Drift eliminator" means a feature of a cooling system that reduces to a minimum the generation of drift from the system.

Subd. 9. **F-specific bacteriophage MS-2.** "F-specific bacteriophage MS-2" means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. coli (ATCC 15597).

Subd. 10. **Facility.** "Facility" means any type of building or structure or a defined area of specific use that receives water for domestic use from a public water supply as defined in section 144.382.

3.1 Subd. 11. **Filtered wastewater.** (a) "Filtered wastewater" means an oxidized
3.2 wastewater that:

3.3 (1) has been coagulated and passed through natural undisturbed soils or a bed of
3.4 filter media:

3.5 (i) at a rate that does not exceed five gallons per minute per square foot of surface
3.6 area in mono, dual, or mixed media gravity, upflow, or pressure filtration systems or does
3.7 not exceed two gallons per minute per square foot of surface area in traveling bridge
3.8 automatic backwash filters; and

3.9 (ii) so that the turbidity of the filtered wastewater does not exceed an average of
3.10 two NTU within a 24-hour period; five NTU more than five percent of the time within a
3.11 24-hour period; and 10 NTU at any time; or

3.12 (2) has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse
3.13 osmosis membrane so that the turbidity of the filtered wastewater does not exceed 0.2
3.14 NTU more than five percent of the time within a 24-hour period and does not exceed 0.5
3.15 NTU at any time.

3.16 (b) Design treatment processes shall be based on meeting the requirements of
3.17 paragraph (a) or filtration without coagulation may be used if pilot test results submitted to
3.18 the agency demonstrate that the requirements of paragraph (a), clause (1), can be met for
3.19 a minimum pilot test period of 90 days.

3.20 The agency may modify the sampling frequency under paragraph (a) based on the
3.21 wastewater treatment facility classification under Minnesota Rules, part 9400.0500, and
3.22 the facility permitted design flow.

3.23 Subd. 12. **Food crops.** "Food crops" means any crops intended for human
3.24 consumption.

3.25 Subd. 13. **Hose bibb.** "Hose bibb" means a faucet or similar device to which a
3.26 common garden hose can be readily attached.

3.27 Subd. 14. **Landscape impoundment.** "Landscape impoundment" means an
3.28 impoundment in which recycled water is stored or used for aesthetic enjoyment or
3.29 landscape irrigation or that otherwise serves a similar function and is not intended to
3.30 include public contact.

3.31 Subd. 15. **Modal contact time.** "Modal contact time" means the amount of time
3.32 elapsed between the time that a tracer, such as salt or dye, is injected into the influent at
3.33 the entrance to a chamber and the time that the highest concentration of the tracer is
3.34 observed in the effluent from the chamber.

4.1 Subd. 16. **Nonrestricted recreational impoundment.** "Nonrestricted recreational
4.2 impoundment" means an impoundment of recycled water for which no limitations are
4.3 imposed on body-contact water recreational activities.

4.4 Subd. 17. **NTU.** "NTU" means nephelometric turbidity unit, which is a measurement
4.5 of turbidity as determined by the ratio of the intensity of light scattered by the sample to
4.6 the intensity of incident light as measured by method 2130 B in Standard Methods for
4.7 the Examination of Water and Wastewater, Eaton, A. D., Clesceri, L. S., Rice, E. W., and
4.8 Greenberg, A. E., eds. (Washington, DC: American Public Health Association, 2005).

4.9 Subd. 18. **Oxidized wastewater.** "Oxidized wastewater" means wastewater in which
4.10 the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

4.11 Subd. 19. **Peak dry weather design flow.** "Peak dry weather design flow" means
4.12 the arithmetic mean of the maximum peak flow rates sustained over a specific period of
4.13 time during the maximum 24-hour dry weather period. "Dry weather period" means
4.14 periods of little or no rainfall.

4.15 Subd. 20. **Recycling plant.** "Recycling plant" means an arrangement of devices,
4.16 structures, equipment, processes, and controls that produce recycled water.

4.17 Subd. 21. **Restricted access golf course.** "Restricted access golf course" means
4.18 a golf course where public access is controlled so that areas irrigated with recycled
4.19 water cannot be used as if they were part of a park, playground, or school yard and
4.20 where irrigation is conducted only in areas and during periods when the golf course is
4.21 not being used by golfers.

4.22 Subd. 22. **Restricted recreational impoundment.** "Restricted recreational
4.23 impoundment" means an impoundment of recycled water for which recreation is limited
4.24 to fishing, boating, and other non-body-contact water recreational activities.

4.25 Subd. 23. **Spray irrigation.** "Spray irrigation" means the application of recycled
4.26 water to crops to maintain vegetation or support growth of vegetation by applying it
4.27 from sprinklers.

4.28 Subd. 24. **Undisinfected secondary recycled water.** "Undisinfected secondary
4.29 recycled water" means oxidized wastewater.

4.30 Subd. 25. **Use area.** "Use area" means an area of recycled water use with defined
4.31 boundaries. A use area may contain one or more facilities.

4.32 Sec. 2. **[115.85] USES OF RECYCLED WATER.**

4.33 Subdivision 1. **Scope.** (a) This section applies only to recycled water from sources
4.34 that contain domestic waste, in whole or in part.

(b) This section does not apply to the use of recycled water on-site at a water recycling plant or wastewater treatment plant if access by the public to the area of on-site recycled water use is restricted.

Subd. 2. **Irrigation.** (a) Recycled water used for surface irrigation of the areas specified in this paragraph must be disinfected tertiary recycled water, except that for filtration according to section 115.84, subdivision 11, clause (1), coagulation need not be used as part of the treatment process if the filter effluent turbidity does not exceed two NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed five NTU for more than 15 minutes and never exceeds ten NTU, and there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed five NTU for more than 15 minutes:

(1) parks and playgrounds;

(2) school yards;

(3) residential landscaping;

(4) unrestricted access golf courses; and

(5) any other irrigation use not specified in this section and not prohibited by other law.

(b) Filtration without coagulation for recycled water used according to paragraph (a) may be used if pilot test results submitted to the agency demonstrate that the turbidity requirements in paragraph (a) can be met for a minimum pilot test period of 90 days. The agency may modify the sampling frequency under paragraph (a) based on the wastewater treatment facility classification under Minnesota Rules, part 9400.0500, and the facility permitted design flow.

(c) Recycled water used for surface irrigation of the following must be at least disinfected secondary-23 recycled water:

(1) cemeteries;

(2) freeway landscaping;

(3) restricted access golf courses;

(4) ornamental nursery stock and sod farms where access by the general public is not restricted;

(5) pasture for animals producing milk for human consumption; and

(6) any nonedible vegetation when access is controlled so that the irrigated area cannot be used as if it were part of a park, playground, or school yard.

(d) Recycled wastewater used for surface irrigation of the following must be at least undisinfected secondary recycled water:

(1) orchards where the recycled water does not come into contact with the edible portion of the crop;

(2) vineyards where the recycled water does not come into contact with the edible portion of the crop;

(3) non-food-bearing trees. Christmas tree farms are included in this category if no irrigation with recycled water occurs for a period of 14 days before harvesting or allowing access by the general public;

(4) fodder and fiber crops and pasture for animals not producing milk for human consumption;

(5) seed crops not eaten by humans;

(6) food crops that must undergo commercial pathogen-destroying processing before being consumed by humans; and

(7) ornamental nursery stock and sod farms if no irrigation with recycled water occurs for a period of 14 days before harvesting, retail sale, or allowing access by the general public.

(e) No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops eaten raw by humans.

Subd. 3. **Impoundments.** (a) Except as provided in paragraph (b), recycled water used as a source of water supply for nonrestricted recreational impoundments must be disinfected tertiary recycled water that has been subjected to conventional treatment.

(b) Disinfected tertiary recycled water that has not received conventional treatment may be used for nonrestricted recreational impoundments if the recycled water is monitored for the presence of pathogenic organisms as follows:

(1) during the first 12 months of operation and use, the recycled water must be sampled and analyzed monthly for Giardia, enteric viruses, and Cryptosporidium. Following the first 12 months of use, the recycled water must be sampled and analyzed quarterly for Giardia, enteric viruses, and Cryptosporidium. The ongoing monitoring may be discontinued after the first two years of operation with the approval of the commissioner of health; and

(2) the samples must be taken at a point after disinfection and before the point where the recycled water enters the use impoundment. The samples must be analyzed by an approved laboratory and the results submitted quarterly to the commissioner of health.

(c) The total coliform bacteria concentrations in recycled water used for nonrestricted recreational impoundments, measured at a point between the disinfection process and the point of entry to the use impoundment, must comply with the criteria specified in section 115.84, subdivision 6, clause (2), for disinfected tertiary recycled water.

(d) Recycled water used as a source of supply for restricted recreational impoundments and for any publicly accessible impoundments at fish hatcheries must be at least disinfected secondary-2.2 recycled water.

(e) Recycled water used as a source of supply for landscape impoundments that do not use decorative fountains must be at least disinfected secondary-23 recycled water.

Subd. 4. **Cooling.** (a) Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying, or any mechanism that creates a mist must be disinfected tertiary recycled water.

(b) Use of recycled water for industrial or commercial cooling or air conditioning that does not involve the use of a cooling tower, evaporative condenser, spraying, or any mechanism that creates a mist must be at least disinfected secondary-23 recycled water.

(c) Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, uses a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system must comply with the following:

(1) a drift eliminator must be used whenever the cooling system is in operation; and

(2) a chlorine or other biocide must be used to treat the cooling system recirculating water to minimize the growth of Legionella and other microorganisms.

Subd. 5. **Other purposes.** (a) Recycled water used for the purposes specified in this paragraph must be disinfected tertiary recycled water, except that for filtration being provided according to section 115.84, subdivision 11, paragraph (a), clause (1), coagulation need not be used as part of the treatment process if the filter effluent turbidity does not exceed two NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed five NTU for more than 15 minutes and never exceeds ten NTU, and there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed five NTU for more than 15 minutes:

(1) flushing toilets and urinals;

(2) priming drain traps;

(3) industrial process water that may come into contact with workers;

(4) structural fire fighting;

(5) decorative fountains;

(6) commercial laundries;

(7) consolidation of backfill around potable water pipelines;

(8) artificial snowmaking for commercial outdoor use; and

(9) commercial car washes, including hand washes if the recycled water is not heated, where the general public is excluded from the washing process.

(b) Recycled water used for the following uses must be at least disinfected secondary-23 recycled water:

(1) industrial boiler feed;

(2) nonstructural fire fighting;

(3) backfill consolidation around nonpotable piping;

(4) soil compaction;

(5) mixing concrete;

(6) dust control on roads and streets;

(7) cleaning roads, sidewalks, and outdoor work areas; and

(8) industrial process water that will not come into contact with workers.

(c) Recycled water used for flushing sanitary sewers must be at least undisinfected secondary recycled water.

Sec. 3. **[115.86] RECYCLED WATER REQUIREMENTS.**

Subdivision 1. Isolation distances. (a) No irrigation with undisinfected tertiary recycled water shall take place within 50 feet of any water supply well unless:

(1) a geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface;

(2) the well contains an annular seal that extends from the surface into the aquitard;

(3) the well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities;

(4) the ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well; and

(5) the owner of the well approves of the elimination of the isolation distance requirement.

(b) Except as provided under paragraph (a), no irrigation with, or impoundment of, undisinfected tertiary, undisinfected secondary-2.2, or undisinfected secondary-23 recycled water shall take place within 150 feet of any water supply well.

(c) No irrigation with, or impoundment of, undisinfected secondary recycled water shall take place within 300 feet of any water supply well.

(d) The isolation distances specified under paragraphs (a) to (c) are doubled when the water supply well is a sensitive water supply well under rules adopted by the commissioner of health.

9.1 Subd. 2. **Use area requirements.** (a) Any use of recycled water shall comply
9.2 with the following:

9.3 (1) any irrigation runoff shall be confined to the recycled water use area, unless the
9.4 runoff does not pose a public health threat and is authorized by the commissioner of health;

9.5 (2) spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas,
9.6 or food handling facilities; and

9.7 (3) drinking water fountains shall be protected against contact with recycled water
9.8 spray, mist, or runoff.

9.9 (b) No spray irrigation of any recycled water, other than disinfected tertiary recycled
9.10 water, shall take place within 150 feet of a residence or a place where public exposure
9.11 could be similar to that of a park, playground, or school yard.

9.12 (c) All use areas that are accessible to the public shall be posted with signs that
9.13 are visible to the public, in a size no less than four inches high by eight inches wide,
9.14 that include the following wording: "RECYCLED WATER - DO NOT DRINK." The
9.15 agency may accept alternative signage and wording, or an educational program, provided
9.16 the applicant demonstrates to the agency that the alternative approach will ensure an
9.17 equivalent degree of public notification.

9.18 (d) No physical connection shall be made or allowed to exist between any recycled
9.19 water system and any separate system conveying potable water.

9.20 (e) The portions of the recycled water piping system that are in areas subject to
9.21 access by the general public shall not include hose bibbs. Only quick couplers that differ
9.22 from those used on the potable water system shall be used on the portions of the recycled
9.23 water piping system in areas subject to public access.

9.24 Subd. 3. **Chemical monitoring.** A recycling plant must monitor recycled water
9.25 for known potential chemical contaminants in excess of limits established by the
9.26 commissioner of health.

9.27 Sec. 4. **[115.87] RECYCLED WATER USE PERMITS.**

9.28 Subdivision 1. **Permit required.** The agency may issue, continue in effect, or
9.29 deny permits for producing and using recycled water under such conditions as it may
9.30 prescribe to prevent water pollution and protect the public health. If the proposed use of
9.31 recycled water also requires a permit issued by the Department of Agriculture or Health,
9.32 the application for any secondary permit must be processed simultaneously with the
9.33 original permit application to the agency.

9.34 Subd. 2. **Fees.** The agency may collect permit fees in amounts not greater than
9.35 those necessary to cover the reasonable costs of developing, reviewing, and acting upon

10.1 applications for recycled water permits and implementing and enforcing the conditions of
10.2 the permits pursuant to agency rules. Permit fees shall not include the costs of litigation.
10.3 The fee schedule must reflect reasonable and routine direct and indirect costs associated
10.4 with permitting, implementation, and enforcement. The agency may impose an additional
10.5 enforcement fee to be collected for a period of up to two years to cover the reasonable
10.6 costs of implementing and enforcing the conditions of a permit under the rules of the
10.7 agency. Money collected under this subdivision shall be deposited in the environmental
10.8 fund and is appropriated to the agency for the purposes specified in this subdivision. The
10.9 fees under this subdivision are exempt from section 16A.1285.

10.10 Sec. 5. **[115.88] RULEMAKING.**

10.11 The agency may adopt rules to implement sections 115.84 to 115.87.

10.12 Sec. 6. **[115.89] NATURAL SWIMMING PONDS.**

10.13 Section 115.85, subdivision 3, paragraph (b), applies to natural swimming ponds, as
10.14 defined under section 144.1222, subdivision 5, using recycled water.

10.15 Sec. 7. Minnesota Statutes 2010, section 144.1222, subdivision 1, is amended to read:

10.16 Subdivision 1. **Public pools.** The commissioner of health shall be responsible
10.17 for the adoption of rules and enforcement of applicable laws and rules relating to the
10.18 operation, maintenance, design, installation, and construction of public pools and public
10.19 natural swimming ponds and facilities related to them. The commissioner shall adopt
10.20 rules governing the collection of fees under section 144.122 to cover the cost of pool
10.21 construction plan review, monitoring, and inspections.

10.22 Sec. 8. Minnesota Statutes 2010, section 144.1222, subdivision 5, is amended to read:

10.23 Subd. 5. **Natural swimming pond exemption ponds.** ~~(a) A public swimming pond~~
10.24 ~~in existence before January 1, 2008, is not a public pool for purposes of this section and~~
10.25 ~~section 157.16, and is exempt from the requirements for public swimming pools under~~
10.26 ~~Minnesota Rules, chapter 4717.~~

10.27 ~~(b) Notwithstanding paragraph (a),~~ (a) A public natural swimming pond must meet
10.28 the requirements for public pools described in subdivisions 1c and 1d. Section 157.16
10.29 applies to public natural swimming ponds. Except as provided in this section and rules
10.30 adopted by the commissioner under paragraph (c), a public natural swimming pond must
10.31 comply with rules pertaining to public pools when applicable.

11.1 ~~(e)~~ (b) For purposes of this ~~subdivision~~ section, a "public natural swimming pond"
11.2 means ~~an artificial body of water contained within a lined, sand-bottom basin, intended for~~
11.3 ~~public swimming, relaxation, or recreational use that includes a water circulation system~~
11.4 ~~for maintaining water quality and does not include any portion of a naturally occurring~~
11.5 ~~lake or stream~~ a system consisting of a constructed body of water where the water is
11.6 contained by an isolating membrane in which no chemicals or devices that disinfect or
11.7 sterilize water are used and all clarifying and cleaning of the water is achieved solely with
11.8 the motion of the water, naturally or by mechanically assisted means, through biological
11.9 filters and plants rooted hydroponically in the system. Natural swimming ponds are also
11.10 known as natural swimming pools.

11.11 ~~(d) This subdivision expires June 30, 2011.~~

11.12 (c) The commissioner shall adopt rules specific to public natural swimming ponds
11.13 that address design, water clarity, cleanability, and other issues unique to public natural
11.14 swimming ponds when rules for public pools are inapplicable or inappropriate.