Rules of
Department of Natural Resources
Division 20—Clean Water Commission
Chapter 7—Water Quality

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 20—Clean Water Commission
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10 CSR 20-7.010 Prevention of Pollution from Wells to Subsurface Waters of the State

(Rescinded July 10, 1980)

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10 CSR 20-7.015 Effluent Regulations

PURPOSE: This rule sets forth the limits for various pollutants which are discharged to the various waters of the state. The two previous rules 10 CSR 20-6.050 and 10 CSR 20-7.010 have been rescinded and this rule combines certain aspects of both rules and modifies the format of the effluent regulations. This rule also complies with the latest changes to the Federal Clean Water Act, P.L. 97-117 (1981).

(1) Designations of Waters of the State.

(A) For the purpose of this rule, the waters of the state are divided into the following categories:

1. The Missouri and Mississippi Rivers;

2. Lakes and reservoirs, including natural lakes and any impoundments created by the construction of a dam across any waterway or watershed. An impoundment designed for or used as a disposal site for tailings or sediment from a mine or mill shall be considered a wastewater treatment device and not a lake or reservoir. Releases to lakes and reservoirs include discharges into streams one-half (1/2) stream mile (.80 km) before the stream enters the lake as measured to its normal full pool;

3. A losing stream is a stream which distributes thirty percent (30%) or more of its flow through natural processes such as through permeable geologic materials into a bedrock aquifer within two (2) miles' flow distance downstream of an existing or proposed discharge. Flow measurements to determine percentage of water loss must be corrected to approximate the seven (7)-day Q_{10} stream flow. If a stream bed or drainage way has an intermittent flow or a flow insufficient to measure in accordance with this rule, it may be determined to be a losing stream on the basis of channel development, valley configuration, vegetation development, dye tracing studies, bedrock characteristics, geographical data and other geological factors. Only discharges which in the opinion of the department reach the losing section and which occur within two (2) miles upstream of the losing section of the stream shall be considered releases to a losing stream. A list of known losing streams is available from the Water Pollution Control Program. Other streams may be determined to be losing by the Division of Geology and Land Survey;

4. Metropolitan no-discharge streams. These streams and the limitations on discharging to them are listed in the commission's Water Quality Standards 10 CSR 20-7.031. This rule shall in no way change, amend or be construed to allow a violation of the existing or future water quality standards;

5. Special streams—wild and scenic rivers, Ozark National Scenic Riverways and Outstanding State Resource Waters;

6. Subsurface waters in aquifers; and

7. All other waters except as noted in paragraphs (1)(A)1.–6. of this rule.

(B) The effluent limitation for each category is listed separately in sections (2)–(8). In addition to the limitations identified under each specific designation, the general conditions contained in section (9) apply to all discharges.

(2) Effluent Limitations for the Missouri and Mississippi Rivers.

(A) The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or from publicly-owned treatment works (POTWs) shall undergo treatment sufficient to conform to the following limitations:

1. Biochemical Oxygen Demand$_5$ (BOD_5) and nonfilterable residues (NFRs) equal to or less than a monthly average of thirty milligrams per liter (30 mg/l) and a weekly average of forty-five milligrams per liter (45 mg/l);

2. pH shall be maintained in the range from six to nine (6–9) standard units;

3. Exceptions to paragraphs (2)(B)1. and 2. are as follows:

A. If the facility is a wastewater lagoon, the NFRs shall be equal to or less than a monthly average of eighty (80) mg/l and a weekly average of one hundred twenty (120) mg/l and the pH shall be maintained above 6.0, and the BOD_5 shall be equal to or less than a monthly average of forty-five (45) mg/l and a weekly average of sixty-five (65) mg/l;

B. If the facility is a trickling filter plant the BOD_5 and NFRs shall be equal to or less than a monthly average of forty-five (45) mg/l and a weekly average of sixty-five (65) mg/l;

C. Where the use of effluent limitations set forward in this section is known or expected to produce an effluent that will endanger or violate water quality, the department will set specific effluent limitations for individual dischargers to protect the water quality of the receiving streams. When a waste load allocation or a total maximum daily load study is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the study;

D. The department may require more stringent limitations than authorized in subsections (3)(A) and (B) under the following conditions:

(I) If the facility is an existing facility, the department may set the BOD_5 and NFR limits based upon an analysis of the past performance, rounded up to the next five (5) mg/l range; and

(II) If the facility is a new facility, the department may set the BOD_5 and NFR limits based upon the design capabilities of the plant considering geographical and climatic conditions;

(a) A design capability study has been conducted for new lagoon systems. The study reflects that the effluent limitations should be BOD_5 equal to or less than a monthly average of forty-five (45) mg/l, a weekly average of sixty-five (65) mg/l, NFRs equal to or less than a monthly average of seventy (70) mg/l and a weekly average of one hundred ten (110) mg/l.

(b) A design capability study has been conducted for new trickling filter systems and the study reflects that the effluent limitations should be BOD_5 and NFRs equal to or less than a monthly average of forty (40) mg/l and a weekly average of sixty (60) mg/l; and

E. If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed provided that:

(I) BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l. The NFR (total suspended solids) limit may be higher than forty-five (45) mg/l for combined sewer overflow treatment devices when organic solids are demonstrated to be an insignificant fraction of total inorganic storm

water generated solids, and the permittee can demonstrate that achieving a limit of forty-five (45) mg/l is not cost effective relative to water quality benefits. In these cases, an alternative total suspended solids limit would be developed.

(II) pH shall be maintained in the range from six to nine (6–9) standard units; and

(III) Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged;

4. Fecal coliform. Discharges to the Mississippi from the Missouri-Iowa line down to Lock and Dam 26 shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the owner or operator of the wastewater treatment facility can demonstrate that neither health nor water quality will be endangered by failure to disinfect.

5. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed or used in accordance with a sludge management practice approved by the department; and

6. When the wastewater treatment process causes nitrification which affects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

(C) The suspended solids which are present in stream water and which are removed during treatment may be returned to the same body of water from which they were taken, along with any additional suspended solids resulting from the treatment of water to be used as public potable water or industrial purposes using essentially the same process as a public water treatment process. This includes the solids that are removed from potable waters that are withdrawn from wells located in the alluvial valley of the Missouri and Mississippi Rivers.

(D) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that shall require, at a minimum, one (1) wastewater sample per year for each fifty thousand (50,000) gallons per day (gpd) of effluent, or fraction thereof, except that—

A. Point sources that discharge less than twenty-five thousand (25,000) gpd may only be required to submit an annual report;

B. Point sources that discharge more than one (1) million gallons per day (mgd) will be required at a minimum to collect twenty (20) wastewater samples per year unless the applicant can show that the wastewater has a consistent quality, such as once through cooling water or mine dewatering, then the department may set less frequent sampling requirements; and

C. Sludge sampling will be established in the permit.

2. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall collect samples on a regular evenly spaced schedule, while point sources with seasonal discharges shall collect samples evenly spaced during the season of discharge.

3. Sample types shall be as follows:

A. Samples collected from lagoons may be grab samples;

B. Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

C. Sludge samples will be grab samples unless otherwise specified in the operating permit.

4. The monitoring frequency and sample types stated in paragraph (2)(D)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(3) Effluent Limitations for the Lakes and Reservoirs.

(A) The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility to a lake or reservoir designated in 10 CSR 20-7.031 as L2 and L3 which is publicly owned.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs shall undergo treatment sufficient to conform to the following limitations:

1. BOD_5 and NFRs equal to or less than a monthly average of twenty (20) mg/l and a weekly average of thirty (30) mg/l;

2. pH shall be maintained in the range from six to nine (6–9) standard units;

3. Discharge to lakes and reservoirs identified as whole body contact areas shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1,000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the permittee can demonstrate that neither health nor water quality will be endangered by failure to disinfect;

4. Where the use of effluent limitations set forth in section (3) is known or expected to produce an effluent that will endanger or violate water quality, the department may either—conduct waste load allocation studies in order to arrive at a limitation which protects the water quality of the state or set specific effluent limitations for individual dischargers to protect the water quality of the receiving streams. When a waste load allocation study is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the waste load allocation study;

5. If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed subject to the following:

A. BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l;

B. pH shall be maintained in the range from six to nine (6–9) standard units; and

C. Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged;

6. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and

7. When the wastewater treatment process causes nitrification which effects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—

A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;

B. Point sources that discharge more than one point three (1.3) mgd will be required, at a minimum, to collect fifty-two (52) wastewater samples per year unless the applicant can show that the wastewater has a consistent quality, such as once through cooling water or mine dewatering, then the department may set less frequent sampling requirements; and

C. Sludge sampling will be established in the permit.

2. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular evenly spaced schedule, while point sources with seasonal discharges shall collect samples evenly spaced during the season of discharge.

3. Sample types shall be as follows:

A. Samples collected from lagoons may be grab samples;

B. Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

C. Sludge samples shall be grab samples unless otherwise specified in the operating permit.

4. The monitoring frequency and sample types stated in paragraph (3)(C)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(D) For lakes designated in 10 CSR 20-7.031 as L1, which are primarily used for public drinking water supplies, there will be no discharge into the watersheds above these lakes from domestic or industrial wastewater sources regulated by these rules. Discharges from potable water treatment plants, such as filter wash, may be permitted. Separate storm sewers will be permitted, but only for the transmission of storm water. Discharges permitted prior to the effective date of this requirement may continue to discharge so long as the discharge remains in compliance with its operating permit.

(E) For lakes designated in 10 CSR 20-7.031 as L3 which are not publicly owned, the discharge limitations shall be those contained in section (8).

(F) In addition to other requirements in this section, discharges to Lake Taneycomo and its tributaries between Table Rock Dam and Power Site Dam (and excluding the discharges from the dams) shall not exceed five-tenths (0.5) mg/l of phosphorus as a monthly average. Discharges meeting both the following conditions shall be exempt from this requirement:

1. Those permitted prior to adoption of this rule; and

2. Those with design flows of less than twenty-two thousand five hundred gallons per day (22,500 gpd). All existing facilities whose capacity is increased would be subject to phosphorus limitations. The department may allow the construction and operation of interim facilities without phosphorus control provided their discharges are connected to regional treatment facilities with phosphorus control not later than three (3) years after authorization. Discharges in the White River basin and outside of the area designated above for phosphorus limitations shall be monitored for phosphorus discharges, and the frequency of monitoring shall be the same as that for BOD_5 and NFR, but not less than annually. The department may reduce the frequency of monitoring if the monitoring data is sufficient for water quality planning purposes.

(G) In addition to other requirements in this section, discharges to Table Rock Lake watershed, defined as hydrologic units numbered 11010001 and 11010002, shall not exceed five-tenths milligrams per liter (0.5 mg/l) of phosphorus as a monthly average according to the following schedules except as noted in paragraph (3)(G)5.:

1. Any new discharge shall comply with this new requirement upon the start of operations;

2. Any existing discharge, or any sum of discharges operated by a single continuing authority, with a design flow of 1.0 mgd or greater shall comply no later than four (4) years after the effective date of this rule;

3. Any existing discharge, or any sum of discharges operated by a single continuing authority, with a design flow of 0.1 mgd or greater, but less than 1.0 mgd, shall comply no later than eight (8) years after the effective date of this rule, and shall not exceed one milligram per liter (1.0 mg/l) as a monthly average as soon as possible and no later than four (4) years after the effective date of this rule;

4. Any existing discharge with a design flow of twenty-two thousand five hundred gallons per day (22,500 gpd) or greater but less than 0.1 mgd shall comply no later than eight (8) years after the effective date of this rule;

5. Any existing discharge with a design flow of less than twenty-two thousand five hundred gallons per day (22,500 gpd) permitted prior to the effective date of this rule shall be exempt from this requirement unless the design flow is increased; and

6. Any existing discharge in which the design flow is increased shall comply according to the schedule applicable to the final design flow.

(4) Effluent Limitations for Losing Streams.

(A) Discharges to losing streams shall be permitted only after other alternatives including land application, discharge to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

(B) If the department agrees to allow a release to a losing stream, the permit will be written using the limitations contained in subsections (4)(B) and (C). Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs permitted under this section shall undergo treatment sufficient to conform to the following limitations:

1. BOD_5 equal to or less than a monthly average of ten (10) mg/l and a weekly average of fifteen (15) mg/l;

2. NFRs equal to or less than a monthly average of fifteen (15) mg/l and a weekly average of twenty (20) mg/l;

3. pH shall be maintained in the range from six to nine (6–9) standard units;

4. Discharges to losing streams shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1,000) fecal coliform colonies per one hundred milliliters (100 ml);

5. Where chlorine is used as a disinfectant, the effluent shall be dechlorinated except when the discharge is—

A. Into an unclassified stream at least one (1) mile from a water quality standard classified stream; and

B. Into a flowing stream where the seven (7)-day Q_{10} flow is equal to or greater than fifty (50) times the effluent flow;

6. If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed subject to the following:

A. BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l;

B. pH shall be maintained in the range from six to nine (6–9) standard units; and

C. Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged;

7. Sludges removed in the treatment process shall not be discharged. Sludges shall be

routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and

8. When the wastewater treatment process causes nitrification which effects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that shall require at a minimum one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—

A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;

B. Point sources that discharge more than one point three (1.3) mgd will be required at a minimum to collect fifty-two (52) wastewater samples per year unless the applicant can show that the wastewater has a consistent quality, such as once through cooling water or mine dewatering, then the department may set less frequent sampling requirements; and

C. Sludge samples will be established in the permit.

2. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular schedule, while point sources with seasonal discharges shall collect samples during the season of discharge.

3. Sample types shall be as follows:

A. Samples collected from lagoons may be grab samples;

B. Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.

4. The monitoring frequency and sample types stated in paragraph (4)(C)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(5) Effluent Limitations for Metropolitan No-Discharge Streams.

(A) Discharge to metropolitan no-discharge streams is prohibited, except as specifically permitted under the Water Quality Standards, 10 CSR 20-7.031 and noncontaminated storm water flows.

(B) All permits for discharges to these streams shall be written to ensure compliance with the water quality standards.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that shall require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—

A. Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;

B. Point sources that discharge more than one point three (1.3) mgd will be required at a minimum to collect fifty-two (52) wastewater samples per year; and

C. Sludge sampling will be established in the permit.

2. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular schedule, while point sources with seasonal discharges shall collect samples during the season of discharge.

3. Sample types shall be as follows:

A. Samples collected from lagoons may be grab samples;

B. Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.

4. The monitoring frequency and sample types stated in paragraph (5)(C)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(6) Effluent Limitations for Special Streams.

(A) Limits for Wild and Scenic Rivers and Ozark National Scenic Riverways and Drainages Thereto.

1. The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility to waters included in this section.

2. Discharges from wastewater treatment facilities which receive primarily domestic waste or from POTWs are limited as follows:

A. New releases from any source other than POTW facilities are prohibited;

B. Discharges from sources that existed before June 29, 1974, or if additional stream segments are placed in this section, discharges that were permitted at the time of the designation will be allowed;

C. Discharges from POTWs; and

D. Releases from the permitted facilities under subparagraphs (6)(A)2.A.–C. shall meet the following effluent limitation:

(I) BOD_5 equal to or less than a monthly average of ten (10) mg/l and a weekly average of fifteen (15) mg/l;

(II) NFRs equal to or less than a monthly average of fifteen (15) mg/l and a weekly average of twenty (20) mg/l;

(III) pH shall be maintained in the range from six to nine (6–9) standard units;

(IV) Discharges shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1,000) fecal coliform colonies per one hundred milliliters (100 ml);

(V) Where chlorine is used as a disinfectant, the effluent shall be dechlorinated except when the discharge is—

(a) Into an unclassified stream at least one (1) mile from a water quality standard classified stream; or

(b) Into a flowing stream where the seven (7)-day Q_{10} flow is equal to or greater than fifty (50) times the effluent flow;

(VI) If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed subject to the following:

(a) BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l;

(b) pH shall be maintained in the range from six to nine (6–9) standard units; and

(c) Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged; and

(VII) When the wastewater treatment process causes nitrification which affects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

3. Industrial, agricultural and other nondomestic contaminant sources, point sources or wastewater treatment facilities which are not included under subparagraph (6)(A)2.B. shall not be allowed to discharge. Agrichemical facilities shall be designed and constructed so that all bulk liquid pesticide nonmobile storage containers and all bulk liquid fertilizer nonmobile storage containers are located within a secondary containment facility. Dry bulk pesticides and dry bulk fertilizers shall be stored in a building so that they are protected from the weather. The floors of the buildings shall be constructed of an approved design and material(s). At an agrichemical facility, all transferring, loading, unloading, mixing and repackaging of bulk agrichemicals shall be conducted in an operational area. All precipitation collected in the operational containment area or secondary containment area as well as process generated wastewater shall be stored and disposed of in a no-discharge manner.

4. Monitoring requirements.

A. The department will develop a wastewater and sludge sampling program based on design flow that will require, at a minimum, one (1) wastewater sample per year for each twenty-five thousand (25,000) gpd of effluent, or fraction thereof, except that—

(I) Point sources that discharge less than five thousand (5,000) gpd may only be required to submit an annual report;

(II) Point sources that discharge more than one point three (1.3) mgd will be required at a minimum to collect fifty-two (52) wastewater samples per year; and

(III) Sludge sampling will be established in the permit.

B. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular schedule, while point sources with seasonal discharges shall collect samples during the season of discharge.

C. Sample types shall be as follows:

(I) Samples collected from lagoons may be grab samples;

(II) Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

(III) Sludge samples shall be a grab sample unless otherwise specified in the operating permit.

D. The monitoring frequency and sample types stated in paragraph (6)(D)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(B) Limits for Outstanding State Resource Waters as per Water Quality Standards.

1. Discharges shall not cause the current water quality in the streams to be lowered.

2. Discharges will be permitted as long as the requirements of paragraph (6)(B)1. are met and the limitations in section (8) are not exceeded.

(7) Effluent Limitations for Subsurface Waters.

(A) No person shall release any water into aquifers, store or dispose of water in a way which causes or permits it to enter aquifers either directly or indirectly unless it meets the appropriate groundwater protection criteria set in 10 CSR 20-7.031, Table A at a point ten feet (10') under the release point except as provided in subsections (7)(E) and (F). The permit writer shall review the complete application and other data to determine which parameter to include in the permit.

(B) No wastewater shall be introduced into sinkholes, caves, fissures or other openings in the ground which do or are reasonably certain to drain into aquifers except as provided in section (4) of this rule.

(C) All abandoned wells and test holes shall be properly plugged or sealed to prevent pollution of subsurface waters, as per the requirements of the Division of Geology and Land Survey.

(D) Where any wastewater treatment facility or any water contaminant source or point source incorporates the use of land treatment systems which allows or can reasonably be expected to allow wastewater effluents to reach the aquifer. Compliance with subsection (7)(A) shall be determined by a site specific monitoring plan.

(E) The effluent limitations specified in subsection (7)(A) shall not apply to facilities designed and constructed to meet department design criteria provided these designs have been reviewed and approved by the Department of Natural Resources. The Department of Natural Resources has the right to require monitoring, reporting, public notice and other information as deemed appropriate. This exemption may be revoked by the department should any monitoring indicate an adverse effect on a beneficial water use or if the numeric criteria in the Water Quality Standards are being exceeded.

(F) Any person not included in subsection (7)(E) who releases, stores or disposes of water in a manner which results in releases of water to an aquifer having concentrations in excess of one (1) or more parameter limitations provided in subsection (7)(A) may be allowed to resample for purposes of verification of the excess. At their discretion, persons may demonstrate, at the direction of the Department of Natural Resources, that the impact on the water quality in the aquifer is negligible on the beneficial uses. The demonstration shall consider, at a minimum, the following factors:

1. Site geology;
2. Site geohydrology;
3. Existing and potential water uses;
4. Existing surface water and groundwater quality;
5. Characteristics of wastes or wastewater contained in facilities; and
6. Other items as may be required by the Department of Natural Resources to assess the proposal.

A. All demonstrations shall be reviewed by the department if the demonstrations show that the impact on groundwater quality will not result in an unreasonable risk to the public, alternate effluent limitation(s) will be proposed by the Department of Natural Resources and presented to the Clean Water Commission for approval. The Clean Water Commission has the right to require monitoring, reporting, public notice and other information as deemed appropriate in the approval of the alternate limitation for one (1) or more parameters from (7)(A). The Clean Water Commission may hold a public hearing to secure public comment prior to final action on an alternate limitation.

B. No alternate limitations will be granted which would impair beneficial uses of the aquifer or threaten human health or the environment.

C. Alternate limitations may be revoked by the department should any monitoring indicate an adverse effect on a beneficial water use or violations of the alternate limitation.

(8) Effluent Limitations for All Waters, Except Those in Paragraphs (1)(A)1.–6.

(A) The following limitations represent the maximum amount of pollutants which may be discharged from any point source, water contaminant source or wastewater treatment facility.

(B) Discharges from wastewater treatment facilities which receive primarily domestic waste or POTWs shall undergo treatment sufficient to conform to the following limitations:

1. BOD_5 and NFRs equal to or less than a monthly average of thirty (30) mg/l and a weekly average of forty-five (45) mg/l;

2. pH shall be maintained in the range from six to nine (6–9) standard units;

3. The limitations of paragraphs (8)(B)1. and 2. will be effective unless a

water quality impact study has been conducted by the department, or conducted by the permittee and approved by the department, showing that alternate limitation will not cause violations of the Water Quality Standards or impairment of the uses in the standards. When a water quality impact study has been completed to the satisfaction of the department, the following alternate limitation may be allowed:

A. If the facility is a wastewater lagoon, the NFRs shall be equal to or less than a monthly average of eighty (80) mg/l and a weekly average of one hundred twenty (120) mg/l and the pH shall be maintained above 6.0 and the BOD_5 shall be equal to or less than a monthly average of forty-five (45) mg/l and a weekly average of sixty-five (65) mg/l;

B. If the facility is a trickling filter plant, the BOD_5 and NFRs shall be equal to or less than a monthly average of forty-five (45) mg/l and a weekly average of sixty-five (65) mg/l;

C. Where the use of effluent limitations set forth in section (8) is known or expected to produce an effluent that will endanger water quality, the department will set specific effluent limitations for individual dischargers to protect the water quality of the receiving streams. When a waste load allocation study is conducted for a stream or stream segment, all permits for discharges in the study area shall be modified to reflect the limits established in the waste load allocation study;

D. The department may require more stringent limitations than authorized in subsections (3)(A) and (B) under the following conditions:

(I) If the facility is an existing facility, the department may set the BOD_5 and NFR limits based upon an analysis of the past performance, rounded up to the next five (5) mg/l range; and

(II) If the facility is a new facility, the department may set the BOD_5 and NFR limits based upon the design capabilities of the plant considering geographical and climatic conditions;

(a) A design capability study has been conducted for new lagoon systems. The study reflects that the effluent limitations should be BOD_5 equal to or less than a monthly average of forty-five (45) mg/l, a weekly average of sixty-five (65) mg/l, NFRs equal to or less than a monthly average of seventy (70) mg/l and a weekly average of one hundred ten (110) mg/l;

(b) A design capability study has been conducted for new trickling filter systems and the study reflects that the effluent limitations should be BOD_5 and NFR equal to or less than a monthly average of forty (40) mg/l and a weekly average of sixty (60) mg/l; and

E. If the facility is a POTW wastewater treatment facility providing at least primary treatment during a precipitation event and discharges on a noncontinuous basis, the discharge may be allowed provided that:

(I) BOD_5 and NFRs equal to or less than a weekly average of forty-five (45) mg/l. The NFR (total suspended solids) limit may be higher than forty-five (45) mg/l for combined sewer overflow treatment devices when organic solids are demonstrated to be an insignificant fraction of total inorganic storm water generated solids, and the permittee can demonstrate that achieving a limit of forty-five (45) mg/l is not cost effective relative to water quality benefits. In these cases, an alternative total suspended solids limit would be developed.

(II) pH shall be maintained in the range from six to nine (6–9) units; and

(III) Only the wastewater in excess of the capacity of the noncontinuous wastewater treatment plant hydraulic capacity may be discharged;

4. Fecal coliform.

A. Discharges to streams identified as whole body contact areas, discharges within two (2) miles upstream of these areas and discharges to streams with a seven (7)-day Q_{10} flow of zero (0) in metropolitan areas where the stream is readily accessible to the public shall not contain more than a monthly average of four hundred (400) fecal coliform colonies per one hundred milliliters (100 ml) and a daily maximum of one thousand (1000) fecal coliform colonies per one hundred milliliters (100 ml) from April 1 to October 31. The department may waive or relax this limitation if the owner or operator of the wastewater treatment facility can demonstrate that neither health nor water quality will be endangered by failure to disinfect.

B. Where chlorine is used as a disinfectant, the effluent shall be dechlorinated except when the discharge is—

(I) Into an unclassified stream at least one (1) mile from a Water Quality Standards classified stream; or

(II) Into a flowing stream where the seven (7)-day Q_{10} flow is equal to or greater than fifty (50) times the design effluent flow;

5. Sludges removed in the treatment process shall not be discharged. Sludges shall be routinely removed from the wastewater treatment facility and disposed of or used in accordance with a sludge management practice approved by the department; and

6. When the wastewater treatment process causes nitrification which affects the BOD_5 reading, the permittee can petition the department to substitute carbonaceous BOD_5 in lieu of regular BOD_5 testing. If the department concurs that nitrification is occurring, the department will set a carbonaceous BOD_5 at five (5) mg/l less than the regular BOD_5 in the operating permit.

(C) Monitoring Requirements.

1. The department will develop a wastewater and sludge sampling program based on design flow that will require at a minimum one (1) wastewater sample per year for each fifty thousand (50,000) gpd of effluent, or fraction thereof, except that—

A. Point sources that discharge less than twenty-five thousand (25,000) gpd may only be required to submit an annual report;

B. Point sources that discharge more than one (1) mgd will be required at a minimum to collect twenty (20) wastewater samples per year unless the applicant can show that the wastewater has a consistent quality, such as once through cooling water or mine dewatering, then the department may set less frequent sampling requirements; and

C. Sludge sampling will be established in the permit.

2. Sampling frequency shall be spread evenly throughout the discharge year. This means that a point source with a continuous discharge shall take samples on a regular schedule, while point sources with seasonal discharges shall collect samples during their season of discharge.

3. Sample type shall be as follows:

A. Samples collected from lagoons may be grab samples;

B. Samples collected from mechanical plants shall be twenty-four (24)-hour composite samples, unless otherwise specified in the operating permit; and

C. Sludge samples shall be a grab sample unless otherwise specified in the operating permit.

4. The monitoring frequency and sample types stated in paragraph (8)(C)3. are minimum requirements. The permit writer shall establish monitoring frequencies and sampling types to fulfill the site specific informational needs of the department.

(9) General Conditions.

(A) Monitoring, Analysis and Reporting.

1. All construction and operating permit holders shall submit reports at intervals established by the permit or at any other reasonable intervals required by the department.

The monitoring and analytical schedule shall be as established by the Missouri Department of Natural Resources in the operating permit.

2. The analytical and sampling methods used must conform to the following reference methods unless alternates are approved by the department:

A. *Standard Methods for the Examination of Waters and Wastewaters* (14, 15, 16, 17, 18, 19 and 20th Edition), published by the Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314;

B. *Water Testing Standards, Vol. 11.01 and 11.02,* published by American Society for Testing and Materials, West Conshohocken, PA 19428;

C. *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020), published by the Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 54202; and

D. *NPDES Compliance Sampling Inspection Manual*, published by Environmental Protection Agency, Enforcement Division, Office of Water Enforcement, 401 Main Street, S.W., Washington DC 20460.

3. Sampling and analysis by the department to determine violations of this regulation will be conducted in accordance with the methods listed in paragraph (9)(A)2. or any other approved by the department. Violations may be also determined by review of the permittee's self-monitoring reports. Analysis conducted by the permittee or his/her laboratory shall be conducted in such a way that the precision and accuracy of the analyzed results can be determined.

4. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in the permit, the permittee shall provide the department with the following information, with the next discharge monitoring report as required under subsection (9)(A):

A. A description of the discharge and cause of noncompliance;

B. The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

C. Steps being taken to reduce, eliminate and prevent recurrence of the noncompliance.

5. In the case of any discharge subject to any applicable toxic pollutant effluent standard under section 307(a) of the Federal Clean Water Act, the information required by paragraph (9)(A)4. regarding a violation of this standard shall be provided within twenty-four (24) hours from the time the owner or operator of the water contaminant source, point source or wastewater treatment facility becomes aware of the violation or potential violation. If this information is provided orally, a written submission covering these points shall be provided within five (5) working days of the time the owner or operator of the water contaminant source, point source or wastewater treatment facility becomes aware of the violation.

(B) Dilution Water. Dilution of treated wastewater with cooling water or other less contaminated water to lower the effluent concentration to limits required by an effluent regulation of the Clean Water Law shall not be an acceptable means of treatment.

(C) Compliance.

1. New sources. Water contaminant sources, point sources and wastewater treatment facilities and their tributary sewer systems on which construction begins after the effective date of the applicable effluent guidelines shall meet all requirements of this regulation and the Missouri Clean Water Law.

2. Sources for which construction and operating permits were issued prior to the effective date of this regulation shall meet all the requirements of the existing permit. Where the existing permit contains more stringent limitations than those contained in this regulation, the permittee may apply to the department for a modification of the permit to contain the new limitations. The department will notify the applicant of its decision to modify or deny the application within sixty (60) days after receiving an application.

(D) Compliance with New Source Performance Standards.

1. Except as provided in paragraph (9)(D)2., any new water contaminant source, point source or wastewater treatment facility on which construction commenced after October 18, 1972, or any new source, which meets the applicable promulgated new source performance standards before the commencement of discharge, shall not be subject to any more stringent new source performance standards or to any more stringent technology-based standards under subsection 301(b)(2) of the Federal Clean Water Act for the shortest of the following periods:

A. Ten (10) years from the date that construction is completed;

B. Ten (10) years from the date the source begins to discharge process or other nonconstruction related wastewater; or

C. The period of depreciation or amortization of the facility for the purposes of section 167 or 169 (or both) of the *Internal Revenue Code* of 1954.

2. The protection from more stringent standards of performance afforded by paragraph (9)(D)1. does not apply to—

A. Additional or more stringent permit conditions which are not technology based, for example, conditions based on water quality standards or effluent standards or prohibitions under section 307(a); and

B. Additional permit conditions controlling pollutants listed as toxic under section 307(a) of the Federal Clean Water Act or as hazardous substances under section 311 of the Federal Clean Water Act and which are not controlled by new source performance standards. This exclusion includes permit conditions controlling pollutants other than those identified as hazardous where control of those other pollutants has been specifically identified as the method to control the hazardous pollutant.

(E) Bypassing.

1. Any bypass or shutdown of a wastewater treatment facility and tributary sewer system or any part of a facility and sewer system that results in a violation of permit limits or conditions is prohibited except—

A. Where unavoidable to prevent loss of life, personal injury or property damages;

B. Where unavoidable excessive storm drainage or runoff would damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit; and

C. Where maintenance is necessary to ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance;

2. The permittee shall notify the department by telephone within twenty-four (24) hours and follow with a written report within five (5) days of all bypasses or shutdowns that result in a violation of permit limits or conditions. POTWs that bypass during storm water infiltration events need only report on their discharge monitoring reports. This section does not excuse any person from any liability, unless this relief is otherwise provided by the statute.

(F) Sludge facilities shall meet the applicable control technology for sewage sludge treatment, use and disposal as published by the Environmental Protection Agency (EPA) in 40 CFR 503 and applicable state standards and limitations published in 10 CSR 20 and 10 CSR 80. Where there are no standards available or applicable, or when more stringent standards are appropriate to protect human health and the environment, the department shall set specific limitations in permits on a case-by-case basis using best professional judgment.

(G) Industrial, agricultural and other nondomestic water contaminant sources, point sources or wastewater treatment facilities which are not included under subsection (2)(B), (3)(B), (4)(B), or (8)(B)—

1. These facilities shall meet the applicable control technology currently effective as published by the EPA in 40 CFR 405–471. Where there are no standards available or applicable, the department shall set specific parameter limitations using best professional judgment. pH shall be maintained in the range from six to nine (6–9) standard units, except that discharges of uncontaminated cooling water and water treatment plant effluent may exceed nine (9) standard units, but may not exceed ten and one-half (10.5) standard units, if it can be demonstrated that the pH will not exceed nine (9) standard units beyond the regulatory mixing zone; and

2. Agrichemical facilities shall be designed and constructed so that all bulk liquid pesticide nonmobile storage containers and all bulk liquid fertilizer nonmobile storage containers are located within a secondary containment facility. Dry bulk pesticides and dry bulk fertilizers shall be stored in a building so that they are protected from the weather. The floors of the buildings shall be constructed of an approved design and material(s). At an agrichemical facility, the following procedures shall be conducted in an operational area: all transferring, loading, unloading, mixing and repackaging of bulk agrichemicals. All precipitation collected in the operational containment area or secondary containment area as well as process generated wastewater shall be stored and disposed of in a no-discharge manner or treated to meet the applicable control technology referenced in paragraph (9)(G)1.

AUTHORITY: section 644.026, RSMo Supp. 1999. Original rule filed June 6, 1974, effective June 16, 1974. Amended: Filed April 1, 1975, effective April 11, 1975. Rescinded: Filed Oct. 16, 1979, effective July 11, 1980. Readopted: Filed Feb. 4, 1980, effective July 11, 1980. Rescinded and readopted: Filed Nov. 10, 1982, effective May 12, 1983. Amended: Filed Sept. 11, 1984, effective March 12, 1985. Amended: Filed July 25, 1985, effective Dec. 26, 1985. Amended: Filed Feb. 1, 1988, effective June 13, 1988. Amended: Filed Sept. 13, 1988, effective Feb. 14, 1989. Amended: Filed July 15, 1991, effective Jan. 13, 1992. Amended: Filed Sept. 2, 1993, effective May 9, 1994. Amended: Filed March 1, 1999, effective Nov. 30, 1999. Amended: Filed Dec. 30, 1999, effective Sept. 30, 2000.*

**Original authority: 204.026, RSMo 1972, amended 1973, transferred to 644.026, RSMo 1986, amended 1987, 1993, 1995.*

10 CSR 20-7.020 Effluent Regulations
(Rescinded July 10, 1980)

AUTHORITY: section 204.026, RSMo 1978. Original rule filed June 6, 1974, effective June 16, 1974. Amended: Filed April 1, 1975, effective April 11, 1975. Rescinded: Filed Oct. 12, 1979, effective July 10, 1980.

10 CSR 20-7.030 Water Quality Standards
(Rescinded December 11, 1977)

AUTHORITY: sections 204.021 and 204.026, RSMo Supp. 1973. Rescinded: effective Dec. 11, 1977.

10 CSR 20-7.031 Water Quality Standards

PURPOSE: This rule identifies beneficial uses of waters of the state, criteria to protect those uses and defines the antidegradation policy. It is developed in response to the Missouri Clean Water Law and the federal Clean Water Act, Section 303(c)(1) and (2), which requires that state water quality standards be reviewed at least once every three years. These revisions are pursuant to the national goal of protection of fish, shellfish and wildlife and recreation in and on the water as outlined in Section 101(a)(2) of the Act.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Definitions.

(A) Acute toxicity—Conditions producing adverse effects or lethality on aquatic life following short-term exposure. The acute criteria in Tables A and B are maximum concentrations which protect against acutely toxic conditions. Acute toxicity is also indicated by exceedence of whole-effluent toxicity (WET) test conditions of paragraph (3)(I)2. For substances not listed in Table A or B, 0.3 of the median lethal concentration, or the no observed acute effect concentration for representative species, may be used to determine absence of acute toxicity.

(B) Aquifer—A subsurface water-bearing bed or stratum which stores or transmits water in recoverable quantities that is currently being used or could be used as a water source for private or public use. It does not include water in the vadose zone.

(C) Beneficial water uses. Beneficial uses (1)(C)1.–11. of classified waters are identified in Tables G and H. Beneficial uses (1)(C)12.–15. of classified waters must be determined on a site-by-site basis and are therefore not listed in Tables G and H.

1. Irrigation—Application of water to cropland or directly to plants that may be used for human or livestock consumption. Occasional supplemental irrigation, rather than continuous irrigation, is assumed.

2. Livestock and wildlife watering—Maintenance of conditions to support health in livestock and wildlife.

3. Cold-water fishery—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a naturally reproducing or stocked trout fishery and other naturally reproducing populations of recreationally important fish species.

4. Cool-water fishery—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a sensitive, high-quality sport fishery (including smallmouth bass and rock bass) and other naturally reproducing populations of recreationally important fish species.

5. Protection of aquatic life (General warm-water fishery)—Waters in which naturally occurring water quality and habitat conditions allow the maintenance of a wide variety of warm-water biota, including naturally reproducing populations of recreationally important fish species. This includes all Ozark Class C and P streams, all streams with seven (7)-day Q_{10} low flows of more than one-tenth cubic feet per second (0.1 cfs), all P1 streams and all classified lakes. However, individual Ozark Class C streams may be determined to be limited warm-water fisheries on the basis of limited habitat, losing-stream classification, land-use characteristics or faunal studies which demonstrate a lack of recreationally important fish species.

6. Protection of aquatic life (Limited warm-water fishery)—Waters in which natural water quality and/or habitat conditions prevent the maintenance of naturally reproducing populations of recreationally important fish species. This includes non-Ozark Class C streams and non-Ozark Class P streams with seven (7)-day Q_{10} low flows equal to or less than 0.1 cfs and Ozark Class C streams with the characteristics outlined in paragraph (1)(C)5.

7. Human health protection (Fish consumption and secondary contact recreation)—Criteria to protect this use are based on the assumption of an average amount of fish consumed on a long-term basis. Protection of this use includes compliance with Federal Drug Administration (FDA) limits for fish tissue, maximum water concentrations corresponding to the 10^{-6} cancer risk level and other human health fish consumption criteria. Secondary contact recreation assumes limited physical contact with the water without likelihood of water ingestion.

8. Whole-body-contact recreation—Activities in which there is direct human contact with the raw surface water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs, such as the eyes, ears and the nose, will be exposed to the water. Although the water may be ingested accidentally, it is not intended to be used as a potable supply unless acceptable treatment is applied. Water so designated is intended to be used for swimming, water skiing or skin diving.

9. Boating and canoeing—Activities in which limited contact with water is assumed.

10. Drinking water supply—Maintenance of a raw water supply which will yield potable water after treatment by public water treatment facilities.

11. Industrial process water and industrial cooling water—Water to support various industrial uses; since quality needs will vary by industry, no specific criteria are set in these standards.

12. Storm- and flood-water storage and attenuation—Waters which serve as overflow and storage areas during flood or storm events slowly release water to downstream areas, thus lowering flood peaks and associated damage to life and property.

13. Habitat for resident and migratory wildlife species, including rare and endangered species—Waters that provide essential breeding, nesting, feeding and predator escape habitats for wildlife including waterfowl, birds, mammals, fish, amphibians and reptiles.

14. Recreational, cultural, educational, scientific and natural aesthetic values and uses—Waters that serve as recreational sites for fishing, hunting and observing wildlife; waters of historic or archeological significance; waters which provide great diversity for nature observation, educational opportunities and scientific study.

15. Hydrologic cycle maintenance—Waters hydrologically connected to rivers and streams serve to maintain flow conditions during periods of drought. Waters that are connected hydrologically to the groundwater system recharge groundwater supplies and assume an important local or regional role in maintaining groundwater levels.

(D) Biocriteria—Numeric values or narrative expressions that describe the reference biological integrity of aquatic communities inhabiting waters that have been designated for aquatic-life protection.

(E) Chronic toxicity—Conditions producing adverse effects on aquatic life or wildlife following long-term exposure but having no readily observable effect over a short time period. Chronic numeric criteria in Tables A and B are maximum concentrations which protect against chronic toxicity; these values shall be considered four (4)-day averages. Chronic toxicity is also indicated by exceedence of WET test conditions of subsection (4)(P). For substances not listed in Table A or B, commonly used endpoints such as the no-observed effect concentration or inhibition concentration of representative species may be used to demonstrate absence of toxicity.

(F) Classified waters—All waters listed as L1, L2 and L3 in Table G and P, P1 and C in Table H. During normal flow periods, some rivers back water into tributaries which are not otherwise classified. These permanent backwater areas are considered to have the same classification as the water body into which the tributary flows.

1. Class L1—Lakes used primarily for public drinking water supply.

2. Class L2—Major reservoirs.

3. Class L3—Other lakes which are waters of the state. These include both public and private lakes. For effluent regulation purposes, publicly owned L3 lakes are those for which a substantial portion of the surrounding lands are publicly owned or managed.

4. Class P—Streams that maintain permanent flow even in drought periods.

5. Class P1—Standing-water reaches of Class P streams.

6. Class C—Streams that may cease flow in dry periods but maintain permanent pools which support aquatic life.

7. Class W—Wetlands that are waters of the state that meet the criteria in the *Corps of Engineers Wetlands Delineation Manual* (January 1987), and subsequent federal revisions. Class W waters do not include wetlands that are artificially created on dry land and maintained for the treatment of mine drainage, stormwater control, drainage associated with road construction, or industrial, municipal or agricultural waste. Class W determination on any specific site shall be consistent with federal law.

(G) Ecoregion—A major region within the state which contains waters with similar geological, hydrological, chemical and biological characteristics.

(H) Epilimnion—Zone of atmospheric mixing in a thermostratified lake.

(I) Fecal coliform bacteria—A group of bacteria originating in intestines of warm-blooded animals which indicates the possible presence of pathogenic organisms in water.

(J) Hypolimnion—Zone beneath the zone of atmospheric mixing in a thermostratified lake.

(K) Lethal concentration$_{50}$ (LC_{50})—Concentration of a toxicant which would be expected to kill fifty percent (50%) of the individuals of the test species organisms in a test of specified length of time.

(L) Losing stream—A stream which distributes thirty percent (30%) or more of its flow during low flow conditions through natural processes, such as through permeable geologic materials into a bedrock aquifer within two (2) miles' flow distance downstream of an existing or proposed discharge. Flow measurements to determine percentage of water loss must be corrected to approximate the seven (7)-day Q_{10} stream flow. If a stream bed or drainage way has an intermittent flow or a flow insufficient to measure in accordance with this rule, it may be determined to be a losing stream on the basis of channel development, valley configuration, vegetation development, dye tracing studies, bedrock characteristics, geographical data and other geological factors. Losing streams are listed in Table J; additional streams may be determined to be losing by the Division of Geology and Land Survey.

(M) Low-flow conditions—

1. Seven (7)-day one (1)-in-ten (10)-year low flow (7-day Q_{10})—The average minimum flow for seven (7) consecutive days that has a probable recurrence interval of once-in-ten (10) years; and

2. Sixty (60)-day, one (1)-in-two (2)-year low flow (60-day, Q_{12})—The average minimum flow for sixty (60) consecutive days that has a probable recurrence interval of once-in-two (2) years.

(N) Mixing zone—An area of dilution of effluent in the receiving water beyond which chronic toxicity criteria must be met.

(O) Outstanding national resource waters—Waters which have outstanding national recreational and ecological significance. These waters shall receive special protection against any degradation in quality. Congressionally designated rivers, including those in the Ozark national scenic riverways and the wild and scenic rivers system, are so designated (see Table D).

(P) Outstanding state resource waters—High quality waters with a significant aes-

thetic, recreational or scientific value which are specifically designated as such by the Clean Water Commission (see Table E).

(Q) Ozark streams—Streams lying within the Ozark faunal region as described in the *Aquatic Community Classification System for Missouri*, Missouri Department of Conservation, 1989.

(R) Reference stream reaches—Stream reaches determined by the department to be the best available representatives of ecoregion waters in a natural condition, with respect to habitat, water quality, biological integrity and diversity, watershed land use and riparian conditions.

(S) Regulated-flow streams—A stream that derives a majority of its flow from an impounded area with a flow-regulating device.

(T) Water hardness—The total concentration of calcium and magnesium ions expressed as calcium carbonate. For purposes of this rule, hardness will be determined by the twenty-fifth percentile value, so that no more than twenty-five percent (25%) of samples fall below the value of a representative number of samples from the water body in question or from a similar water body at the appropriate stream flow conditions.

(U) Water quality criteria—Chemical, physical and biological properties of water that are necessary to protect beneficial water uses.

(V) Zone of initial dilution—A small area of initial mixing below an effluent outfall beyond which acute toxicity criteria must be met.

(W) Zone of passage—A continuous water route necessary to allow passage of organisms with no acutely toxic effects produced on their populations.

(X) Wetlands—Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. This definition is consistent with both the United States Army Corps of Engineers 33 CFR 328.3(b) and the United States Environmental Protection Agency 40 CFR 232.2(r).

(Y) Whole effluent toxicity tests—A toxicity test conducted under specified laboratory conditions on specific indicator organisms. To estimate chronic and acute toxicity of the effluent in its receiving stream, the effluent may be diluted to simulate the computed percent effluent at the edge of the mixing zone or zone of initial dilution.

(Z) Other definitions as set forth in the Missouri Clean Water Law and 10 CSR 20-2.010 shall apply to terms used in this rule.

(2) Antidegradation. The antidegradation policy shall provide three (3) levels of protection.

(A) Public health, existing in-stream water uses and a level of water quality necessary to protect existing uses shall be maintained and protected.

(B) For all waters of the state, if existing water quality is better than applicable water quality criteria established in these rules, that existing quality shall be fully maintained and protected. Water quality may be lowered only if the state finds, after full satisfaction of the intergovernmental coordination and public participation requirements, that the lowered water quality is necessary to allow important economic and social development in the geographical area in which the waters are located. In allowing the lowering of water quality, the state shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control before allowing any lowering of water quality. This provision allows a proposed new or modified point or nonpoint source of pollution to result in limited lowering of water quality provided that—

1. The source does not violate any of the general criteria set fourth in section (3) of this rule, or any of the criteria for protection of beneficial uses set forth in section (4) of this rule;

2. The source meets all applicable technological effluent limitations and minimum standards of design for point sources or minimum pollution control practices for nonpoint sources; and

3. The lowering of water quality, in the judgment of the department, is necessary for the accommodation of important economic and social development in the geographical vicinity of the discharge. In making a preliminary determination based on socioeconomic development considerations, the department may consider the potential for regional increases in utility rates, taxation levels or recoverable costs associated with the production of goods or services that may result from the imposition of a strict no-degradation policy. Consideration may also be given to the possible indirect effects of a policy on per capita income and the level of employment in the geographical vicinity of the proposed pollution source. Any preliminary decision by the department to allow a limited lowering of water quality will be stated as such in a public notice issued pursuant to 10 CSR 20-6.010. Pursuant to that provision, a public hearing will be held in the geographical vicinity of the proposed pollution source, if the department determines there is significant public interest in and need for a hearing.

(C) There shall be no lowered water quality in outstanding national resource waters or outstanding state resource waters, as designated in Tables D and E.

(3) General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;

(E) There shall be no significant human health hazard from incidental contact with the water;

(F) There shall be no acute toxicity to livestock or wildlife watering;

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200–260.247;

(I) Waters in mixing zones and unclassified waters which support aquatic life on an intermittent basis shall be subject to the following requirements:

1. The acute toxicity criteria of Tables A and B and the requirements of subsection (4)(B); and

2. The following whole effluent toxicity conditions must be satisfied:

A. Single dilution method. The percent effluent at the edge of the zone of initial dilution will be computed and toxicity tests performed at this percent effluent. These

tests must show statistically insignificant mortality on the most sensitive of at least two (2) representative, diverse species; and

B. Multiple dilution method. An LC_{50} will be derived from a series of test dilutions. The computed percent effluent at the edge of the zone of initial dilution must be less than three-tenths (0.3) of the LC_{50} for the most sensitive of at least two (2) representative, diverse species.

(4) Specific Criteria. The specific criteria shall apply to classified waters. Protection of drinking water supply is limited to surface waters designated for raw drinking water supply and aquifers. Protection of whole-body-contact recreation is limited to classified waters designated for that use. Only waters designated for livestock and wildlife watering are considered to be long-term supplies and are subject to the chronic toxicity requirements of the specific criteria.

(A) The maximum chronic toxicity criteria in Tables A and B shall apply to waters designated for the indicated uses given in Tables G and H. All Table A and B criteria are chronic toxicity criteria, except those specifically identified as acute criteria. Water contaminants shall not cause or contribute to concentrations in excess of these values. Table A values listed as health advisory levels shall be used in establishing discharge permit limits and management strategies until additional data becomes available to support alternative criteria, or other standards are established. However, exceptions may be granted in the following cases:

1. Permanent flow streams when the stream flow is less than seven (7)-day Q_{10};

2. Regulated flow streams if the flow is less than the minimum release flow agreed upon by the regulating agencies;

3. When natural upstream concentrations of dissolved oxygen are below the criteria, wasteload allocations and permits for point source discharges will be developed so that existing natural dissolved oxygen concentrations, as determined on a regional or watershed basis, are maintained;

4. For the natural and unavoidable chemical and physical changes that occur in the hypolimnion of lakes. Streams below impoundments shall meet applicable specific criteria;

5. For mixing zones.

A. The mixing zone shall be exempted from the chronic criteria requirements of this section for those components of waste that are rendered nontoxic by dilution, dissipation or rapid chemical transformation. Acute numeric criteria of Tables A and B and whole effluent acute toxicity requirements of subsection (3)(I) must be met at all times within the mixing zone, except within the zone of initial dilution. The following criteria do not apply to thermal mixing zones. Criteria for thermal mixing zones are listed in paragraph (4)(D)6.

B. The maximum size of mixing zones and zone of initial dilution will be determined as follows:

(I) Class C streams and streams with seven (7)-day Q_{10} low flows of 0.1 cfs or less.

(a) Mixing zone—length of one-quarter (1/4) mile. If multiple discharges affect a reach or if zone of passage requirements mandate less extensive mixing zones, shorter mixing zones may be required.

(b) Zone of initial dilution—not allowed;

(II) Streams with seven (7)-day Q_{10} low flow of one-tenth to twenty (0.1–20) cfs—

(a) Mixing zone—one-quarter (1/4) of the stream width, cross-sectional area or volume of flow; length one-quarter (1/4) mile. If the discharger can document that rapid and complete mixing of the effluent occurs in the receiving stream, the mixing zone may be up to one-half (1/2) of the stream width, cross-sectional area or volume of flow; and

(b) Zone of initial dilution—one-tenth (0.1) of the mixing zone width, cross-sectional area or volume of flow;

(III) Streams with seven (7)-day Q_{10} low flow of greater than twenty (20) cfs—

(a) Mixing zone—one-quarter (1/4) of stream width, cross-sectional area or volume of flow; length of one-quarter (1/4) mile; and

(b) Zone of initial dilution—one-tenth (0.1) of the mixing zone width, cross-sectional area or volume of flow and no more than ten (10) times the effluent design flow volume unless the use of diffusers or specific mixing zone studies can justify more dilution; and

(IV) Lakes.

(a) Mixing zone—not to exceed one-quarter (1/4) of the lake width at the discharge point or one hundred feet (100') from the discharge point, whichever is less.

(b) Zone of initial dilution—not allowed.

C. A mixing zone shall not overlap another mixing zone in a manner that the maintenance of aquatic life in the body of water in the overlapping area would be further adversely affected.

D. Other factors that may prohibit or further limit the size and location of mixing zones are the size of the river, the volume of discharge, the stream bank configuration, the mixing velocities, other hydrologic or physiographic characteristics and the designated uses of the water, including type of aquatic life supported, potential effects on mouths of tributary streams and proximity to water supply intakes.

E. Zones of passage must be provided wherever mixing zones are allowed.

F. Mixing zone and zone of initial dilution size limits will normally be based on streams at the seven (7)-day Q_{10} low flow. However, this percent of stream size limits also applies at higher stream flows and discharge limitations may be based on higher stream flows if discharge volume or quality may be adjusted to correlate with stream flow; and

6. For wetlands. Water quality needs will vary depending on the individual characteristics of wetlands. Application of numeric criteria will depend on the specific aquatic life, wildlife and vegetational requirements.

(B) Toxic Substances.

1. Water contaminants shall not cause the criteria in Tables A and B to be exceeded. Concentrations of these substances in bottom sediments or waters shall not harm benthic organisms and shall not accumulate through the food chain in harmful concentrations, nor shall state and federal maximum fish tissue levels for fish consumption be exceeded. More stringent criteria may be imposed if there is evidence of additive or synergistic effects. Site-specific criterial modifications may be allowed. With the department's approval, entities may conduct studies to determine if site-specific factors would justify modifications in the criteria that apply to specific receiving waters. In approving a study and reviewing its results, the department will take into account EPA and other appropriate guidelines as they exist at the time the study is submitted for approval.

2. For compliance with this rule, metals shall be analyzed by the following methods:

A. Aquatic life protection and human-health protection—fish consumption.

(I) Mercury—total recoverable metals.

(II) All other metals—dissolved metals;

B. Drinking water supply—dissolved metals; and

C. All other beneficial uses—total recoverable metals.

3. Other potentially toxic substances for which sufficient toxicity data are not available may not be released to waters of the state until safe levels are demonstrated through adequate bioassay studies.

4. Drinking water criteria, for substances which are rendered nontoxic by transformation processes in the surface water body, shall apply at water supply withdrawal points.

5. Site-specific alternative criteria for human health—fish consumption may be allowed. Designation of this site-specific criteria must follow the established variance request process.

(C) Fecal Coliform Bacteria. Protections of whole-body-contact recreation is limited to classified waters designated for that use. For periods when the stream or lake is not affected by stormwater runoff, the fecal coliform count shall not exceed two hundred colonies per one hundred milliliters (200/100 ml) during the recreational season in waters designated for whole-body-contact recreation or at any time in losing streams. The recreational season is from April 1 to October 31.

(D) Temperature.

1. For general and limited warm-water fisheries beyond the mixing zone, water contaminant sources and physical alteration of the water course shall not raise or lower the temperature of a stream more than five degrees Fahrenheit (5°F). Water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90°F). However, site-specific ambient temperature data and requirements of sensitive resident aquatic species will be considered, when data are available, to establish alternative maxima or deviations from ambient temperatures.

2. For cool-water fisheries beyond the mixing zone, water contaminant sources and physical alteration of the water course shall not raise or lower the temperature of a stream more than five degrees Fahrenheit (5°F). Water contaminant sources shall not cause or contribute to stream temperature in excess of eighty-four degrees Fahrenheit (84°F).

3. For cold-water fisheries beyond the mixing zone, water contaminant sources and physical alteration of the water course shall not raise or lower the temperature of the water body more than two degrees Fahrenheit (2°F). Water contaminant sources shall not cause or contribute to temperatures above sixty-eight degrees Fahrenheit (68°F).

4. Water contaminant sources shall not cause any measurable rise in the temperature of lakes. An increase is allowable for Lake Springfield, Thomas Hill Reservoir and Montrose Lake; however, discharges from these lakes must comply with temperature limits for streams.

5. For the Mississippi River Zones 1A and 2, the water temperature outside the mixing zone shall not exceed the maximum limits indicated in the following list during more than one percent (1%) of the time in any calendar year. In Zone 1B, limits may not be exceeded more than five percent (5%) of the time in a calendar year. At no time shall the river water temperature outside of the thermal mixing zone exceed the listed limits by more than three degrees Fahrenheit (3°F).

	A,B	C
	(°F)	(°F)
January	45	50
February	45	50
March	57	60
April	68	70
May	78	80
June	86	87
July	88	89
August	88	89
September	86	87
October	75	78
November	65	70
December	52	57

A = Zone 1A—Des Moines River to Lock and Dam No. 25.

B = Zone 1B—Lock and Dam No. 25 to Lock and Dam No. 26.

C = Zone 2—Lock and Dam No. 26 to the Missouri-Arkansas state line.

6. Thermal mixing zones shall be limited to twenty-five percent (25%) of the cross-sectional area or volume of a river, unless biological surveys performed in response to section 316(a) of the federal Clean Water Act (or equivalent) indicate no significant adverse impact on aquatic life. Thermal plume lengths and widths within rivers, and all plume dimensions within lakes, shall be determined on a case-by-case basis and shall be based on physical and biological surveys when appropriate.

(E) pH. Water contaminants shall not cause pH to be outside of the range of 6.5–9.0.

(F) Taste- and Odor-Producing Substances. Taste- and odor-producing substances shall be limited to concentrations in the streams or lakes that will not interfere with beneficial uses of the water. For those streams and lakes designated for drinking water supply use, the taste- and odor-producing substances shall be limited to concentrations that will not interfere with the production of potable water by reasonable water treatment processes.

(G) Turbidity and Color. Water contaminants shall not cause or contribute to turbidity or color that will cause substantial visible contrast with the natural appearance of the stream or lake or interfere with beneficial uses.

(H) Solids. Water contaminants shall not cause or contribute to solids in excess of a level that will interfere with beneficial uses. The stream or lake bottom shall be free of materials which will adversely alter the composition of the benthos, interfere with the spawning of fish or development of their eggs or adversely change the physical or chemical nature of the bottom.

(I) Radioactive Materials. All streams and lakes shall conform with state and federal limits for radionuclides established for drinking water supply.

(J) Dissolved Oxygen. Water contaminants shall not cause the dissolved oxygen to be lower than the levels described in Table A or as indicated in paragraph (4)(A)3.

(K) Total Dissolved Gases. Operation of impoundments shall not cause the total dissolved gas concentrations to exceed one hundred ten percent (110%) of the saturation value for gases at the existing atmospheric and hydrostatic pressures.

(L) Sulfate and Chloride Limit for Protection of Aquatic Life.

1. Streams with seven (7)-day Q_{10} low flow of less than one (1) cubic foot per second. The concentration of chloride plus sulfate shall not exceed one thousand milligrams per liter (1000 mg/l) at the seven (7)-day Q_{10} low flow. Table A includes additional chloride criteria.

2. Class P1, L1, L2 and L3 waters and streams with seven (7)-day Q_{10} low flow of more than one (1) cubic foot per second. The total chloride plus sulfate concentration shall not exceed the estimated natural background concentration by more than twenty percent (20%) at the sixty (60)-day Q_{10} low flow.

3. If higher concentrations can be demonstrated through bioassays or studies not to be detrimental to indigenous aquatic life, then an appropriate higher concentration shall be allowed.

(M) Carcinogenic Substances. Carcinogenic substances shall not exceed concentrations in water which correspond to the 10^{-6} cancer risk rate. This risk rate equates to one (1) additional cancer case in a population of one (1) million with lifetime exposure. Derivation of this concentration assumes average water and fish consumption amounts. Assumptions are two (2) liters of water and 6.5 grams of fish consumed per day. Federally established final maximum contaminant levels for drinking water supply shall supersede drinking water supply criteria developed in this manner.

(N) All methods of sample collection, preservation and analysis used in applying criteria in these standards shall be in accord

with those prescribed in the latest edition of *Standard Methods for the Examination of Water and Wastewater* or other procedures approved by the Environmental Protection Agency and the Missouri Department of Natural Resources.

(O) Criteria to protect designated uses are based on current technical literature, especially the Environmental Protection Agency's publication, *Quality Criteria for Water*, 1986. Criteria may be modified or expanded as additional information is developed or as needed to define narrative criteria for particular situations or locations.

(P) WET Chronic Tests. Chronic WET tests performed at the percent effluent at the edge of the mixing zone shall not be toxic to the most sensitive of at least two (2) representative, diverse species. Pollutant attenuation processes such as volatilization and biodegradation which may occur within the allowable mixing zone will be considered in interpreting results.

(Q) Biocriteria. The biological integrity of waters, as measured by lists or numeric diversity indices of benthic invertebrates, fish, algae or other appropriate biological indicators, shall not be significantly different from reference waters. Waters shall be compared with reference waters of similar size within an ecoregion. Reference water locations are listed in Table I.

(5) Groundwater.

(A) Water contaminants shall not cause or contribute to exceedence of Table A, Column VII limits in aquifers and caves. Table A values listed as health advisory levels shall be used in establishing management strategies and ground water cleanup criteria, until additional data becomes available to support alternative criteria or other standards are established. Substances not listed in Table A shall be limited so that drinking water, livestock watering and irrigation uses are protected.

(B) When criteria in Column I or II of Table A are more stringent than Column VII criteria, appropriate Column I or II criteria shall apply to waters in caves and to aquifers which contribute an important part of base flow of surface waters designated for aquatic life protection. Other substances not listed in Table A shall be limited in these aquifers and caves so that the aquatic life use is protected.

(C) Column VII and other criteria shall apply in any part of the aquifer, including the point at which the pollutant enters the aquifer. A specific monitoring depth requirement for releases to aquifers is included in 10 CSR 20-7.015(7)(A).

(D) For aquifers in which contaminant concentrations exceed Column VII criteria or other protection criteria, and existing and potential uses are not impaired, alternative site-specific criteria may be allowed. To allow alternative criteria, the management authority must demonstrate that alternative criteria will not impair existing and potential uses. The demonstration must consider the factors and be subject to the review requirements of 10 CSR 20-7.015(7)(F).

(6) Metropolitan No-Discharge Streams. No water contaminant except uncontaminated cooling water, permitted stormwater discharges in compliance with permit conditions and excess wet-weather bypass discharges not interfering with beneficial uses, shall be discharged to the watersheds of streams listed in Table F. Existing interim discharges may be allowed until interceptors are available within two thousand feet (2,000') or a distance deemed feasible by the department, or unless construction of outfalls to alternative receiving waters not listed in Table F is deemed feasible by the department. Existing discharges include wastewater volumes up to the design capacity of existing permitted treatment facilities, including phased increases in design capacity approved by the department prior to the effective date of this rule. Additional facilities may be constructed to discharge to these waters only if they are intended to be interim facilities in accordance with a regional wastewater treatment plan approved by the department.

(7) Outstanding National Resource Waters. Under section (2), antidegradation section of this rule, new releases to outstanding national resource waters from any source other than publicly-owned waste treatment facilities and mine dewatering water are prohibited and releases from allowed facilities are subject to special effluent limitations as required in 10 CSR 20-7.015(6)(A)3. Table D contains a list of outstanding national resource waters.

(8) Outstanding State Resource Waters.

(A) The commission wishes to recognize certain high-quality waters that may require exceptionally stringent water-quality management requirements to assure conformance with the antidegradation policy. The degree of management requirements will be decided on an individual basis. To qualify for inclusion, all of the following criteria must be met. The waters listed in Table E must—

1. Have a high level of aesthetic or scientific value;

2. Have an undeveloped watershed; and

3. Be located on or pass through lands which are state or federally owned, or which are leased or held in perpetual easement for conservation purposes by a state, federal or private conservation agency or organization.

(9) Lake Taneycomo. The commission wishes to recognize the uniqueness of Lake Taneycomo with respect to its high water clarity, its importance as a trout fishery and as the central natural resource in the rapidly developing Branson area and threats to the lake's water quality imposed by development. An especially stringent antidegradation policy will be observed in the development of effluent rules, discharge permits and nonpoint-source management plans and permits to assure that the high visual quality and aquatic resources are maintained. The use of the best treatment technology for point- and nonpoint-source discharges in the lake's watershed between Table Rock Lake and Power Site Dam will be the guiding principle in establishing limitations.

(10) Compliance with new or revised National Pollutant Discharge Elimination System (NPDES) or Missouri operating permit limitations based on criteria in this rule shall be achieved with all deliberate speed and no later than three (3) years from the date of issuance of the permit.

(11) Losing Streams.

(A) Losing stream determinations will usually be made upon the first application for discharge to a specific water or location within a watershed for a wastewater treatment facility, subdivision development or animal waste management facility.

(B) Permits or other approvals for those applications will be processed in accordance with the determinations. Additional permits or approvals will be processed in accordance with the latest determination.

(C) For application purposes, any proposed facility within five (5) miles of a known losing stream segment should presume that facility's receiving stream segment is also losing until and unless a specific geologic evaluation is made of that stream and concludes the stream segment is gaining.

(D) Existing facilities operating under a state operating permit and new facilities being constructed under a construction permit in proximity to stream segments subsequently determined to be losing will be allowed to continue in operation at permitted or approved effluent limits for a period of time lasting the design life of the facility (usually twenty (20) years from the original construction completion), provided the facility is in compliance with its effluent limits and remains in compliance with those limits, and

if neither of the following conditions is present:

1. If the discharge from such a facility can be eliminated by connection to a locally available facility, the facility shall be connected within three (3) years of the losing stream determination. A local facility shall be considered available if that facility or an interceptor is within two thousand feet (2000') or a distance deemed feasible by the department; and

2. If the discharge from such a facility is shown to cause pollution of groundwater, the facility shall be upgraded to appropriate effluent standards within three (3) years. The department shall include appropriate groundwater monitoring requirements in permits for any such facilities so that pollution, should it occur, would be detected.

(E) Any additional permits or approvals for increased treatment plant design capacity will be processed in accordance with the newest losing stream determination. No additional permits or approvals for any facilities shall be construed as lengthening the time for compliance with losing stream effluent limitations as established in subsection (11)(D).

(12) Severance. If a section, subsection, paragraph, sentence, clause, phrase or any part of this rule be declared unconstitutional or invalid for any reason, the remainder of this rule shall not be affected and shall remain in full force and effect.

(13) Effective Date. This rule becomes effective immediately upon adoption and compliance with the requirements of subsection 644.036.3, of the Missouri Clean Water Law and Chapter 536, RSMo.

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**Original authority: 644.021, RSMo 1972, amended 1973 and 644.026, RSMo 1972, amended 1973, 1987.*