

567—63.4(455B) Effluent toxicity testing requirements in permits.

63.4(1) Effluent toxicity testing. All major municipal and industrial dischargers shall be required to carry out effluent toxicity testing. Minor dischargers may be required to conduct effluent toxicity tests based on a case-by-case evaluation of the impact of the discharge on the receiving stream or industrial contribution to the system. All dischargers required to conduct effluent toxicity tests shall conduct, at a minimum, one valid effluent toxicity test annually. The testing requirements will be placed in the operation permit for each discharger required to conduct this testing. Additional monitoring may be specified in the operation permit based on a case-by-case evaluation of the impact of the discharge on the receiving stream, toxic or deleterious effects of wastewaters, industrial contribution to the system, complexities of the treatment process, history of noncompliance or any other factor which requires strict operational control to meet the effluent limitations of the permit. Any effluent toxicity test completed by the department or other agency and conducted according to procedures stated or referenced in this rule may be used to determine compliance with an operational permit.

63.4(2) Testing procedures. Dischargers shall be required to conduct effluent toxicity tests in accordance with the following general requirements:

a. Effluent toxicity tests shall be performed using a 24-hour composite sample of the effluent collected at the location stated in the operation permit. All composite samples shall be delivered to the testing laboratory within a reasonable time (approximately 24 hours) after collection, and all tests must commence within 36 hours following sample collection. The results of all effluent toxicity tests, including any tests performed at a greater frequency than required in the operation permit, shall be submitted to the department within 30 days of completing the test.

b. All effluent toxicity tests shall be conducted using the test methods referenced in 40 CFR Part 136 and protocols described in the EPA document EPA-821-R-02-012, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th edition, October 2002. All effluent toxicity tests shall be conducted by a laboratory certified in Iowa.

c. All effluent toxicity tests shall be performed using the water flea (*Ceriodaphnia dubia*), and the fathead minnow (*Pimephales promelas*).

d. Effluent toxicity tests shall include, at a minimum, two different concentrations of effluent. One test shall consist of 100 percent effluent, and a second test shall be a diluted effluent sample as defined. A control test, consisting of 100 percent culture water for each respective organism shall also be used. The test shall last for 48 hours at which time the mortality will be determined for all tests.

e. All effluent toxicity tests shall be of the pass/fail type.

63.4(3) If there is a positive toxicity test result in the diluted effluent sample from a valid effluent toxicity test, the following requirements apply unless the exception in paragraph “c” of this subrule is applicable.

a. At a minimum, the discharger shall be required to conduct quarterly effluent toxicity tests until three successive tests are determined not to be positive, after which the normal annual testing shall be resumed.

b. If the discharger has two successive positive valid diluted effluent toxicity test results or three positive test results out of five valid diluted effluent toxicity tests, the discharger shall be required to conduct a toxicity reduction evaluation (TRE). The discharger may be required to carry out instream monitoring or other analysis in conjunction with the TRE. At any time during the course of conducting a TRE there are three consecutive follow-up toxicity test results for the diluted sample which are not positive, the facility will be considered in compliance and work on the TRE may cease. Annual testing for effluent toxicity shall then resume. Nothing in these rules shall preclude the department from taking enforcement action beyond that described in these rules.

c. When the pretest chemical analysis for un-ionized ammonia nitrogen (NH₃-N) or total residual chlorine (TRC) on the diluted effluent sample exceeds the concentrations given below, a positive test result is likely to have been caused by high concentrations of NH₃ or TRC, and the test result will not be used to determine if follow-up testing is needed.

(1) Un-ionized Ammonia Nitrogen—0.9 mg/l

(2) TRC—0.1 mg/l

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