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Rule: 17.30.718

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Rule Title: CRITERIA FOR NUTRIENT REDUCTION FROM SUBSURFACE WASTEWATER TREATMENT SYSTEM (SWTS)

Department: [ENVIRONMENTAL QUALITY DEPARTMENT OF](#)
 Chapter: [WATER QUALITY](#)
 Subchapter: [Nondegradation of Water Quality](#)



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17.30.718 CRITERIA FOR NUTRIENT REDUCTION FROM SUBSURFACE WASTEWATER TREATMENT SYSTEM (SWTS)

(1) This rule describes the information that must be submitted to obtain a department classification of a SWTS as level 1a, level 1b, or level 2, as those terms are defined in ARM [17.30.702](#). The nitrogen treatment efficiency that a SWTS is granted under this rule may be used as the effluent concentration in mixing zone calculations.

(2) A person seeking classification of a SWTS as level 1a, level 1b, or level 2 must submit the following background information to the department regarding the SWTS, in addition to any other information the department determines is necessary to verify the long-term treatment capabilities of the system:

- (a) a description of the technology utilized by the system and the system components;
- (b) engineering details regarding component sizes and materials specifications.

Components include, but are not limited to, tanks, pumps, piping, control panels, and treatment media;

- (c) operation and maintenance requirements;
- (d) a description of the long-term reliability of the system components;
- (e) a description of the installation process; and

(f) information verifying the reliability of the SWTS manufacturer and vendor. At a minimum, the vendor or manufacturer must either:

- (i) have maintained an office in Montana for the past five years with a significant portion of its business related to design, construction, or installation of SWTSs; or
- (ii) demonstrate an equivalent level of experience and reliability in Montana.

(3) A person seeking classification of a SWTS as level 1a, level 1b, or level 2 must submit monitoring information as provided in this section. The department may require additional information (particularly for technologies not included in department Circular DEQ-4) if necessary to verify the long-term reliable treatment capabilities of the system.

(a) The following background information must be submitted for each system monitored:

- (i) system address (including legal description) ;
- (ii) system start-up date;
- (iii) description of current and historical system use, particularly during the performance monitoring period; and

(iv) monitoring data collected prior to and after the required performance monitoring period.

(b) For a SWTS that uses the effluent total nitrogen concentration to determine treatment efficiency, the monitoring must be from at least six systems. For a SWTS that uses the percent total nitrogen removed from measured raw sewage to determine treatment efficiency, the monitoring must be from at least three systems.

(c) For each SWTS that is monitored, at least one representative sample of raw sewage must be collected and analyzed for nitrate (as N) , nitrite (as N) , ammonia (as N) , total kjeldahl nitrogen (TKN) (as N) , biological oxygen demand (BOD) , and total suspended solids (TSS) . This information will be used to determine the raw sewage strength, which must not exceed residential strength. Chemical characterization of raw sewage must be based on one of the following

(c) For each SWTS that is monitored, at least one representative sample of raw sewage must be collected and analyzed for nitrate (as N) , nitrite (as N) , ammonia (as N) , total kjeldahl nitrogen (TKN) (as N) , biological oxygen demand (BOD) , and total suspended solids (TSS) . This information will be used to determine the raw sewage strength, which must not exceed residential strength. Chemical characterization of raw sewage must be based on one of the following

representative samples:

(i) if the septic tank or other initial tank is used only for primary treatment of the sewage, the sample should be collected from that tank;

(ii) if the septic tank or other initial tank is used for treatment beyond primary treatment, the sample should be collected prior to start-up of the SWTS from that tank; or

(iii) another department-approved location.

(d) Each SWTS must be monitored for one year. At least one SWTS must be monitored for at least two years.

(e) Sampling frequency must be at least monthly (or equivalent frequency as approved by the department) during the winter months (November through April), and at least quarterly during the summer months (May through October). At least 50% of the monitoring data from each SWTS must be collected during the winter months.

(f) Each effluent sample must be analyzed for nitrate (as N), nitrite (as N), ammonia (as N), TKN (as N), BOD, TSS, and flow. If influent monitoring is conducted, each influent sample must be analyzed for TKN (as N) or total nitrogen. If the SWTS is experiencing significant infiltration and inflow, the department may require that influent samples be collected and analyzed during each effluent monitoring event to determine an accurate representation of the nitrogen-reducing capabilities of the system.

(g) Monitored SWTSs must be in Montana or located in a climate similar to Montana.

(h) The arithmetic mean of the available data will be used to determine compliance with this rule.

(i) All water analyses, except for temperature, must be conducted according to an EPA-approved method by an independent laboratory. Temperature measurements must be conducted on-site.

(j) The department may waive specific requirements in this rule if:

(i) the monitoring data are substantially equivalent to those requirements; or

(ii) the SWTS uses a proven nutrient reduction technology listed in DEQ-4 with

proprietary variations.

(4) The results from a SWTS that is tested under the EPA/National Science Foundation (NSF) environmental technology verification (ETV) program may be used to demonstrate compliance with the requirements in (3).

(5) In response to a request for classification of a SWTS as level 1a, level 1b, or level 2, the department may, after evaluating the SWTS under the criteria in this rule:

(a) approve the request;

(b) approve the request with modifications or conditions;

(c) deny the request; or

(d) deny the request pending submittal of additional information.

(6) If a SWTS that is classified as level 1a, level 1b, or level 2 is modified, the department may require that the SWTS be re-evaluated under the criteria in this rule.

(7) If subsequent data indicate that a SWTS classified under this rule is not reliable or cannot meet required nutrient reductions, the department may rescind the classification.

(8) All SWTSs classified as a level 1a, level 1b, or level 2 must have an operation and maintenance (O&M) contract in perpetuity for each system installed. The O&M contract will be required in the subdivision approval, or as a deed restriction if a subdivision plat approval is not required for the property. O&M must be conducted by the system manufacturer, an approved vendor, or other qualified personnel. The SWTS vendor or manufacturer must offer an O&M plan that meets the requirements of this section and the requirements in department Circular DEQ-4. At a minimum, the O&M contract must include:

(a) an on-site inspection of all the major components of the SWTS twice a year for the first two years after use of the system begins, and annually thereafter. Inspections of suspended growth systems must be twice as frequent. Inspection items must include verifying proper operation of the visual/audible alarm system required in (9) and determining whether any water treatment devices have been added, modified, or removed from the water system that discharges to the SWTS; and

(b) annual effluent sampling and analysis for nitrate (as N), nitrite (as N), ammonia (as N), TKN (as N), BOD, TSS, fecal coliform, specific conductance, and temperature. Effluent sampling must be conducted after all treatment is complete, but before discharge to the absorption area. All monitoring data collected from a type of SWTS may be requested by the department if the

department has reason to believe that a type of SWTS that has been approved as a nutrient-reducing system is not meeting the required treatment efficiencies.

(9) All SWTSs classified as level 1a, level 1b, or level 2 must have the following features:

(a) a visual and/or audible alarm warning that indicates if a hydraulic malfunction is occurring in any portion of the treatment system prior to the absorption system; and

(b) a physical barrier that prevents the discharge of wastewater to the absorption system if a hydraulic malfunction is occurring in any portion of the treatment system prior to the absorption system.

History: [75-5-301](#), [75-5-303](#), MCA; [IMP](#), [75-5-303](#), MCA; [NEW](#), 2004 MAR p. 1384, Eff. 6/18/04.

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