WASHINGTON STATE DEPARTMENT OF HEALTH

Significant Legislative Rule Analysis

WAC 246-272A-0110
a Rule Concerning Table I, Category 2, to add NSF/ANSI 40 testing for Category 2 products

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Washington State Department of HEALTH

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SECTION 1

A brief description of the proposed rule including the current situation/rule, followed by the history of the issue and why the proposed rule is needed.

The Department of Health (department) is proposing amending WAC 246-272A-0110, Table 1, Category 2, to add NSF/ANSI 40 - Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021) testing for Category 2 products.

WAC 246-272A-0110 states manufacturers of proprietary treatment products used in on-site sewage systems must test their products with an EPA testing method. Manufacturers must register their products with the department based on test results before the product can be permitted or installed in Washington. This allows the department to ensure products used in on-site sewage systems provide the appropriate level of treatment needed to protect public health and the environment, such as drinking water sources and shellfish sites. Proprietary treatment products must be installed and operated as they were tested and registered to ensure they continue to perform as needed.

Category 2 products treat high-strength sewage from restaurants and other facilities generating high levels of oil and grease. Prior to the recent rule revision, the rule required testing for Category 2 products under the EPA/NSF Protocol for the Verification of Wastewater Treatment Technologies/EPA Environmental Technology Verification (April 2001). This protocol tested for organic sewage strength (Carbonaceous Biochemical Oxygen Demand, or $CBOD_5$), suspended solids (Total Suspended Solids, or TSS), and oil and grease (O&G). EPA archived this testing protocol in 2013. During the recent rule revision, the EPA Method 1664, Revision B (February 2010) testing was adopted for Category 2 systems to treat oil and grease. This recommendation, however, neglected to assure Category 2 products are also tested for $CBOD_5$ (organic sewage strength) and TSS (suspended solids). A manufacturer provided formal comment highlighting this oversight and recommended Category 2 products instead be tested with NSF/ANSI 40 -Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021). The department determined Category 2 products should be tested by both EPA Method 1664, Revision B (February 2010) and NSF/ANSI 40 -Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021).

The State Board of Health (board) has rulemaking authority for on-site sewage systems with design flows less than 3,500 gallons per day. Chapter 246-272A WAC, On-Site Sewage Systems, sets standards for the siting, design, installation, use, care, and management of these small on-site sewage systems. At the March 2024 board meeting, the board delegated rulemaking to the department under RCW 43.20.050(4).

SECTION 2

Significant Analysis Requirement

As defined in RCW 34.05.328, portions of the rule require significant analysis because it makes a change to a regulatory program by requiring manufacturers take another test to get their product approved. This analysis can be found in Section 5 below.

SECTION 3

Goals and objectives of the statute that the rule implements.

The goals and objectives of RCW 43.20.50 are to protect public health by establishing regulations for on-site sewage systems with design flows of less than three thousand five hundred gallons per day, covering their design, construction, installation, operation, and maintenance.

Category 2 products treat high-strength sewage from restaurants and other facilities generating high levels of oil and grease. The existing protocol in rule neglects to assure Category 2 products are also tested for $CBOD_5$ (organic sewage strength) and TSS (suspended solids). The proposed amendment will test and treat for all providing the appropriate level of treatment needed to protect public health and the environment, such as drinking water sources and shellfish sites.

SECTION 4

Explanation of why the rule is needed to achieve the goals and objectives of the statute, including alternatives to rulemaking and consequences of not adopting the proposed rule.

The proposed rule protects public health by minimizing both the potential for exposure to sewage and the adverse effects of discharges on ground and surface waters. The proposed rule meets the goals and specific objectives by revising the current on-site sewage system rule to maintain enforceable standards for the design, construction, installation, operation, maintenance, and monitoring to ensure properly functioning Category 2 on-site sewage systems.

Without a rule in place, there would be a higher risk of on-site sewage systems failing to properly treat wastewater, potentially leading to the release of untreated wastewater into the environment.

SECTION 5

Analysis of the probable costs and benefits (both qualitative and quantitative) of the proposed rule being implemented, including the determination that the probable benefits are greater than the probable costs.

WAC 246-272A-0110 Proprietary treatment products-Eligibility for registration

Description:

WAC 246-272A-0110 states manufacturers of proprietary treatment products used in on-site sewage systems must test their products with an EPA testing method. Table I, Category 2 products must test for EPA Method 1664, Revision B (February 2010) to treat oil and grease. However, this test does not treat for $CBOD_5$ (organic sewage strength) and TSS (suspended solids). The department is proposing to add a requirement for NSF/ANSI 40 - Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021) testing for Category 2 products to determine their efficacy to treat $CBOD_5$ (organic sewage strength) and TSS (suspended solids).

Cost(s):

The one time unit cost for NSF/ANSI 40 testing estimated cost is $130,000[1]. This cost is paid by the manufacturers of proprietary treatment products who voluntarily enter into contracts so they can ultimately sell their products. The cost of the NSF/ANSI 40 test does not include the manufacturers cost over the six month processing time during the test, which the Department cannot determine.

- The performance classification is based on the evaluation of system influent and effluent samples collected over a six-month period. Evaluation of influent and effluent samples over time allows the system's treatment efficacy to be characterized.
- Influent Samples: Total suspended solids (TSS) and biochemical oxygen demand (BOD_5), collected 5 times per week; alkalinity, collected once per week.
- Effluent Samples: TSS and carbonaceous biochemical oxygen demand ($CBOD_5$), collected 5 times per week.

Benefit(s):

The proposed rule change provides manufacturers of proprietary products a clear path to have their Category 2 devices tested and approved to be sold in Washington. The proposed rule ensures that Category 2 products are tested to confirm their effectiveness in treating $CBOD_5$ (organic sewage strength) and TSS (total suspended solids), along with oil and grease. There is currently a limited number of registered Category 2 products available in Washington, and consumers would benefit from more options to treat high-strength waste.

If the product fails to treat TSS, suspended solids will clog the pipes to the drainfield and within the drainfield, leading to failure. If products fail to adequately treat for $CBOD_5$, the soil beneath the drainfield will become anoxic (no oxygen) and undertreated sewage may enter groundwater or surface water, leading to poor water quality.[2] In either case, people and animals may be exposed to untreated sewage, private and public property may be contaminated and rendered unusable until it is remediated, and extensive and expensive repairs will be required to return the septic system to functioning.

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[1] Email correspondence from NSF, a firm recognized internationally for developing robust standards and tests, audits and certifying products for food, water, and dietary supplements.

[2] Carbonaceous Biochemical Oxygen Demand, or $CBOD_5$ is the test that is used to determine how much oxygen it takes for bacteria to break down pathogens and other constituents in effluent. With higher values of $CBOD_5$ caused by organic materials introduced to the onsite septic system (such as butter, meat, milk products, coffee, or blood), these bacteria use more oxygen. With a higher use of oxygen, this leaves less for other natural processes to occur in the environment. The greatest effects of this are seen by lower dissolved oxygen in marine waters leading to more negative outcomes for fish and marine animal life.

Ensuring Category 2 products treat TSS and organic sewage strength will prevent failures caused by suspended solids and organic material clogging pipes and the drainfield. Preventing these failures protects public health by preventing untreated sewage from entering the environment. It also saves the owners the costs of spill remediation and the repair and prevents loss of productive use of the property.

A failing septic system may spill sewage into the building it serves or the area around the septic tank or drainfield. This creates several risks to the owner, the community, and the environment.

Principal among these risks is the significant potential for people, pets, and other animals to come in direct contact with sewage. This may lead to sewage-borne disease transmission. The full costs associated with sewage-borne diseases are difficult to quantify due to variable disease outcomes, but costs for medical treatment and lost productivity are likely to be significant.

Sewage spills often contaminate private and public property. In the short term, this usually results in the loss of the productive use of the property. Residences may need to be remediated before they can be occupied. Businesses may need to close while remediation and cleaning is completed. Remediation is often expensive and may include vacuum-cleaning spilled sewage, removing materials from inside buildings, disposing of all uncleanable surfaces and items (carpet, drywall, furniture), intensive professional cleaning of building surfaces, removal or cleaning of contaminated materials outside of buildings. Removed building materials and other items may need to be replaced.

Sewage spills may degrade the local environment. Streams, rivers, lakes, and marine waters contaminated by sewage are unable to provide a habitat to support wildlife, such as salmon and orcas. Shellfish beds may also be contaminated, making the shellfish unsafe for human consumption and impacting traditional, recreational, and commercial shellfish harvesters.

Sewage spills can contaminate drinking water sources. This creates another potential for disease transmission. It is also likely to result in the need for expensive treatment to safely use the water.

The cost to repair a failed on-site sewage system is also significant. It can cost from $5,000 to $50,000, with an average of $31,000.[3]

[3] Average 2024 loan amount based on conversation with Craft3 Regional Loan Program, Financial Lender.

Preventing these potential impacts and costs is a much greater benefit than the one-time cost of $130,000 to test the product to allow it to be sold in Washington.

Summary of all Cost(s) and Benefit(s)

SA Table 2. Summary of Section 5 probable cost(s) and benefit(s)

WAC Section and Title	Probable Cost(s)	Probable Benefit(s)
WAC 246-272A-0110 Proprietary treatment products—Eligibility for registration.	$130,000 for each device tested	• Provides manufacturers a clear path to have their Category 2 devices tested and approved to be sold in Washington. • Assurance that Category 2 products in Washington are safe, effective, and adequately treat high-strength sewage. • Protects public health, people, animals, and the environment from sewage exposure.

Determination

Probable Benefits greater than Probable Costs

The department has determined that the probable benefit, the assurance that Category 2 products, which are designed to treat high-strength sewage, have been tested to ensure they adequately treat sewage with high levels of total suspended solids (TSS) and high levels of organic sewage strength ($CBOD_5$) is greater than the probable costs incurred by testing the product to the NSF/ANSI 40 -Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021).

SECTION 6

List of alternative versions of the rule that were considered including the reason why the proposed rule is the least burdensome alternative for those that are required to comply and that will achieve the goals and objectives of the proposed rule.

The goal of the proposed rule is to ensure sewage is appropriately treated to protect public health and the environment. The rule requires Category 2 systems to treat high-strength sewage. High-strength sewage contains the typical parameters found in sewage, measured as $CBOD_5$ (organic sewage strength) and TSS (suspended solids), as well as high levels of oil and grease.

The department considered no change to the current rule but determined this will not ensure Category 2 products would provide the appropriate level of treatment needed to protect public health and the environment. The current rule requires Category 2 products to be tested by EPA Method 1664, Revision B (February 2010) to ensure the products treat oil and grease. It does not, however, assure the products can treat $CBOD_5$ (organic sewage strength) and TSS (suspended solids).

During a recent rule revision, a product manufacturer recommended Category 2 products be tested with NSF/ANSI 40 - Residential Wastewater Treatment Systems instead of EPA Method 1664. The department considered this proposal but determined this will not ensure products used in on-site sewage provide the appropriate level of treatment needed to protect public health and the environment. NSF/ANSI 40 - Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021), ensure the product can treat $CBOD_5$ (organic sewage strength) and TSS (suspended solids), but not oil and grease.

The department has determined testing with both EPA Method 1664, Revision B (February 2010) and NSF/ANSI 40 -Residential Wastewater Treatment Systems (versions dated between January 2009 and May 31, 2021) is the least burdensome alternative method to ensure that Category 2 systems can treat oil and grease, $CBOD_5$ (organic sewage strength) and TSS (suspended solids).

SECTION 7

Determination that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The proposed rule does not require those to whom it applies to take an action that violates requirements of federal or state law.

SECTION 8

Determination that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The proposed rule does not impose more stringent performance requirements on private entities than on public entities.

SECTION 9

Determination if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by an explicit state statute or by substantial evidence that the difference is necessary.

The proposed rule does not differ from any applicable federal regulation or statute.

SECTION 10

Demonstration that the rule has been coordinated, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.

There are no other applicable laws.