

Approved Minutes of the Technical Advisory Committee Meeting

April 16, 2024

Participation by videoconference

Attendees:	Sharon Bissell	Bruce Douglas*
	Brad Fischer	Gunner McCain*
	Craig Heindel*	Craig Jewett*
	Roger Thompson*	Jared Willey*
	Kevin Eaton	Steve Revell*
	Eric Deratzian	Terry Shearer
	Frederic Larsen	Tom DeBell*
	Megan Kane	Sille Larsen*
	Angela McGuire	Kelsey McWilliams
	Cristin Ashmankas*	Denise Johnson-Terk
	Ken White*	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

May 21, 2024	2-4 PM
June 18, 2024	2-4 PM
July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the March 19, 2024 meeting were accepted as drafted.

Updates:

The administrative process for correcting minor errors in the 2023 version of the Wastewater System and Potable Water Supply Rules (WW Rules) is moving forward. A few mistakes that existed in the 2019 version of the WW Rules that were not proposed for correction in the 2023 version cannot be corrected using the administrative approach. These will be covered in the next revision to the WW Rules.

I/A Technologies:

Cristin said that the Ecoflo Linear Biofilter has been approved as a distribution system without requiring the use of pressure distribution or addition of sand under the system. It has also been approved as a treatment system with the use of pressure distribution and a layer of sand under the system.

The use of crushed glass as an alternative to mound sand will be approved in the next week or two.

The Enereua™ Systems Group has submitted an application for systems that allow reuse of treated wastewater. This should be ready for discussion at the next TAC meeting.

The processing of renewal applications for I/A Technologies is moving quickly and will be completed soon.

Gunner asked about the process for replacing the peat in the Ecoflo Linear Bioflow System. He said that the system needs to have the peat replaced every 7 years or so and that there is no easy method. Cristin said that the company is now claiming the peat will last for 10-20 years before needing replacement. The company describes the process as removing the soil cover, removing the top of the chamber, removing the bales of used peat, and then reassembling with new bales of peat.

Proposed WW Rule Revisions:

Bruce continued the review process with a discussion of Wastewater System Design factors for soil-based systems.

Wastewater Design Flows:

The TAC agreed with the current design flows. Kevin noted that projects doing food preparation trigger the need for a grease trap even when the specific operation would produce little or no grease. Terry said that this particularly occurs for beer and wine tasting operations where the licensing process requires a minimum food service. The food service usually provided does not generate much grease.

Wastewater System Components:

Septic Tanks: Bruce noted that most septic tank alternatives based on material other than concrete no longer need individual confirmation letters per the WW Rules. The group said that septic tank sizes seem appropriate. Cristin said there is push back for some non-residential projects with very low flows. A reduction in size can be granted if the designer proposes a smaller tank that will hold at least two days of design flow. Steve and Craig H. said they have seen no evidence of failures related to undersized septic tanks. Bruce said that one state has added a requirement that when using a plastic riser and cover an inner cover also be installed with a weight of at least 59 lbs. Bruce asked if Vermont should consider this. Craig J. suggested that the permit require operation in accord with the manufacturer's specification that the covers be screwed to the riser. Jared said that his company opens thousands of tanks per year and the covers all have capacity to be fastened shut and that most are. He noted that adding a second cover, such as a concrete cover supplied with a concrete tank, would interfere with the pump controls, alarms, and wiring that is usually installed in the riser. Bruce asked if designers are doing buoyancy calculations and was informed that they are.

Grease Traps: The current WW Rules reference the 1997 version of the Uniform Plumbing Code, and it may be time to update to the current version. The current WW Rules state that the discharge from the grease trap shall be to the septic tank prior to discharging to a leachfield. While the WW Rules are not explicit, a grease trap should be used when the discharge is to a municipal connection line and the revised rules should clarify when a grease trap is needed.

Pump Stations: Craig J. noted that the WW Rules require the pump station to be operable and accessible during a 25-year flood. He asked who determines what the 25-year flood elevation is at any particular location. He also said that the review of community collection systems with pump stations use the same requirements and might have information that can be used. Bruce asked if the WW Rules should be more explicit about the levels for pump controls and alarms for use by installers. Roger said that the information should be on the approved plans which the installers normally work from. Jared noted that the WW Rules do not require a low-level alarm. The issue of requiring periodic pumping was discussed. There are concerns about enforcement, but the issue could be covered in an informational handout. Steve said that he asks that the pump station be checked and pumped if needed at the same time as the septic tank.

Dosing Siphons: The group supports the existing requirements. Steve noted that it is very important to install a vent to allow the siphon to function properly. Cristin said that this is a design area where deference is given to the designer.

Non-proprietary treatment systems: Bruce asked if any of the intermittent and recirculating sand filters approved in §1-924 of the WW Rules are being constructed. Jared said that a small number, primarily by one designer, are still being permitted and constructed. He said that there are quite a few legacy recirculating sand filters that are being remediated, some using 3/8" clean crushed stone that is not providing as good treatment as the original installations.

Constructed Wetlands: Cristin recommends removing this option from the WW Rules. There are about 50 systems in use. They are expensive to maintain, and the treatment performance is not reliable. Jared confirmed this assessment based on systems he has inspected.

Simplified Method of Completing a Hydrogeologic Analysis: Steve said the method seems to be working as intended. Kevin asked about situations where a mound system hydrogeologic analysis would not require a full 12" of mound sand under the system to meet the 24" of separation to the Seasonal High-Water Table (SHWT). Steve noted that the TAC had discussed this issue in the past and decided to maintain the minimum of 12" of sand. Bruce explained that using 12" of sand allowed for the rough surface caused by the plowing and helps ensure that there would be at least some sand over the top of native soil. There is a grant that the Drinking Water and Groundwater Protection Division has received from the Lake Champlain Basin Program to characterize hydraulic conductivities in the fine-grained soils common in Addison County to determine if the categories that currently do not allow for any construction might be split into two or more subcategories, one or more of which might be useable at low application rates.

Effluent Distribution: Bruce asked if field installations include access risers to distribution boxes as required. Roger and Steve said yes. The dosing requirements seem to be OK. Cristin noted that the inspection report needs to include a photo showing proper distribution of effluent during operation of the system. Gunner noted that most systems with a low daily design flow that are designed to meet the minimum of 4 doses per day, do not achieve the four dose per day because the actual flow is usually significantly less than the design flow. Because the distribution piping needs a certain amount of volume to fill and reach distribution pressure, it is not practical to design for more than four doses per day. Jared said that he is seeing good performance for both old and new dosing systems.

Time Dosing: Gunner said he only uses it for bottomless sand filters. Bruce said he would like to add a diagram to the WW Rules that would provide design guidance.

Flow Equalization: Bruce asked if designers are using this approach. They are but only rarely.

Storage and Dose: Bruce asked if this design approach should be retained. It was agreed that this would only apply to a very specific type of project, but it does not appear to be worth removing at this time.

Trenches Versus Beds: Bruce noted the concerns about oxygen transfer in the soil under the system that becomes less effective as the width increases. A study looking at pressure distribution versus gravity flow found more failures in bed systems using gravity distribution.

Window Systems: Bruce noted that the current WW Rules allow a shallow placed window system where the crushed stone is partly in the limiting soil layer and partly in the complying soils below to be installed with the crushed stone in contact with the limiting soils layer. He asked if there should be a sand border between the limiting layer and the crushed stone. See Figures C-7 and C-8 for details. Steve supported the use of a sand border.

At-Grade Systems: These are seldom used. Steve said just build a mound system which has the additional benefit of not requiring a replacement system area or design.

Mound Basal Area: The language needs to be clarified so that there is no confusion about where to measure from when checking isolation distances.

Bottomless Sand Filters: Bruce asked if there is enough evidence of successful operation that the annual inspection requirement can be removed. Craig H. asked if these can be used when the receiving layer is a finer grained soil. Cristin stated that they can be approved when a variance is allowed when using the mound system loading rates. Jared said that now that the Compliance Section is doing a great job of notifying owners that inspections are required it should be clarified that Service Providers can do the work. Cristin said that Service Providers can do the annual inspections including checking for seepage at the toe of the system. Jared reported that some of the longer systems, particularly the older ones, do not have adequate support for the above grade walls of the system. Common steel rods can rust through, and the number may be insufficient. Kevin asked about the sidewall penetrations when adding rods. Jared said that some form of liner repair is needed and that there are sealing tapes that seem to be working. In addition, most of the rods are installed above the water level.

Subsurface Drip: There was discussion about how to test the distribution system. It is difficult to evaluate the flow from each emitter. Jared said that with the use of commercially available drip line there is a standardized flow from each emitter. Using a flow meter, it can be determined if the total flow through the tested portion of the system meets the calculated flow of the emitters. If the flow is too high or too low, there is a problem that must be corrected.

Replacement Areas: There were no comments.

Holding Tanks: There were no comments.

Composting Toilets: The siting requirements for moldering toilets need to be clarified.

Urine Diversion System: These can be approved. There is one organization that collects urine from storage tanks and uses it as fertilizer.

Other Issues:

Cristin suggests a discussion on wastewater reuse systems.

Sille said that she is discussing temporary discharges with folks in New Hampshire. She has shared that information with Nate Kie as it relates to Underground Injection Control permitting.

Tom asked about water treatment systems. Bruce said this would be included when we review the water supply portion of the WW Rules.