

Approved Minutes of the Technical Advisory Committee Meeting

March 19, 2024

Attendees: Sharon Bissell
Denise Johnson-Terk
Jeanne Allen
Steve Revell*
Cristin Ashmankas*
Bruce Douglas*
Roger Thompson*
Jen Fleckenstein*

Participation by videoconference

Sheri Young*
Jeffrey Williams
Julia Beaudoin
Craig Heindel*
Jared Willey*
Megan Kane
Kevin Eaton
Angela McGuire
Claude Chevalier
Ernie Christianson*
Terry Shearer
Frederic Larsen
Tom DeBell*
Gunner McCain*
Craig Jewett*
Brad Fischer

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

April 16, 2024	2-4 PM
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 February 20, 2024 meeting were accepted as drafted with one spelling correction.

Updates:

Bruce said that a few administrative corrections to the 2023 version of the Water Supply and Wastewater Disposal System Rules (WW Rules) are needed. The Regional Office staff and others have made a detailed review, and the proposed changes are ready for adoption. Bruce said that because the needed changes are minor administrative changes, he does not think that a full public process review will be required.

The municipal connection study group will gear up in April. The study group is created by section 25 of S.100 that was passed by the Legislature in 2023.

Innovative/Alternative Technologies:

Cristin reported that the Premier Tech Ltd. application for the Ecoflo Linear Biofilter System is now complete and the approval for use will be issued soon.

Cristin said that two technologies have recently applied for approval. The proposals should be ready for discussion at the next TAC meeting.

Rule Update:

Bruce said that he would like to start the rule update process with a review and listening session beginning with the soil and site issues.

Isolation Distances - between wastewater components and various features and objects as given in Table 9-3 of the WW Rules:

Curtain Drains: Craig H. commented that the WW Rules require curtain drains to be located at least 75' downslope of leachfields, while leachfields only need 50' of separation from surface water. Gunner thought this might be because of the concentrated discharge from the pipe in the drain to the ground surface, while the subsurface flow through soil into a surface water would be more diffuse. Ernie agreed.

Drainage Swales and Ditches: Sheri asked about the differences between ditches with seeps and without when located downslope of a leachfield. Seeps are based on observation and might or might not be present during all portions of the year. Ernie said that the decision is based on whether the bottom of the ditch is above or below the water table. Craig H. suggested using the Seasonal High-Water Table (SHWT) in the ditch. Sheri said deciding between the two categories seems subjective and suggested treating all ditches the same. Gunner noted that digging in road ditches is risky because of the potential for buried pipes and utility cables.

Foundation Drains: There were no comments.

Stormwater Conveyances: The Department of Environmental Conservation (DEC) is working on a guidance document that would define a swale or ditch as a stormwater conveyance, only if there is a stormwater permit that covers the swale or ditch. In addition to concerns about the discharge from a stormwater conveyance to a surface water, there are also concerns about leakage into the groundwater below the conveyance either from the bottom of the ditch or swale or from the retention pond or injection well. Table 11-1 has separate categories for lined and unlined systems. Craig J. suggested a two-year time of travel approach that could be used on a case-by-case basis should be included.

Surface Water: Bruce noted that the distance is measured from the normal high-water level. Steve mentioned that there is a definition of normal high-water level in the WW Rules. Ernie said the definition is based on discussion with the DEC Watershed Management Program. There is also a footnote (2) in Table 9-3 that requires an allowance for future widening of a stream due to bank erosion. Sheri commented that the definition is not always easy to apply and should be improved. Gunner said that he has concerns about using the 50' isolation to surface water when the surface water in question is a small swimming pond and suggested that the isolation distance to a small non-flowing surface water should be increased.

Ground Slope:

The ground slope limitations are given in section §1-903(d) of the WW Rules. There are two categories based on when the lot was created. 10 V.S.A. 1978(15)(d) limits the maximum ground slope in the area where the wastewater system is constructed to 20% for lots created after June 13, 2002. This limitation does not apply to replacement systems. Systems on lots created prior to June 14, 2002 may be constructed on slopes up to 30%. When a system will be constructed on slopes exceeding 20%, the design must include additional instructions on construction methods and erosion control. The TAC said that the 20% restriction is not supported by engineering requirements. They also said that the difficulty of construction on steeper slopes has been minimized with the use of tracked excavators in lieu of rubber tired backhoes. With proper construction, erosion is

not a problem on slopes up to 30%. Replacement systems have been successfully constructed on slopes steeper than 30%.

Water Supplies:

There were no comments on the isolation distances between wastewater disposal systems and bedrock wells, unconfined wells, or public wells. There is also a specified distance between a wastewater disposal system and a non-potable water supply well. Roger asked whether this allowed for installation of a “spite well” intended to prevent development on neighboring property. Jeff said that he has not seen any recent problems with “spite wells.” Even though the construction of the non-potable well does not need a permit, a drilled well must be registered and the isolation distance provides some protection to the aquifer.

Bruce said one concern is how to ensure proper abandonment of a well. The WW Rules specify the steps involved in closing a well, but many landowners are reluctant to close a well either because of cost or because of possible future use for non-potable water.

There were no comments about isolation distances to water lines or buried water storage tanks.

Other Isolation Distances:

Sheri said that the roadway versus driveway is sometimes confusing.

Gunner asked why if a building can be 20’ to a property line the wastewater system must be 25’.

Bruce raised a question of measurements of isolation distances to the basal area in mounds. §1-921(f, h, and i) specify how to calculate the minimum basal area. The effective basal area is usually larger than the minimum basal area and The WW Rules state that measurements are from the effective basal area. Some clarification can be added.

Soil Evaluation:

Bruce asked if the current definition of the Seasonal High-Water Table (SHWT) is appropriate. Craig H. said this ties into whether the SHWT should be determined by a single spot in a test pit and whether a the most limiting test pit in an area should be the basis of a design. Craig J. said that Regional Engineers generally used the highest mottle in pit which has been standard practice for many years unless there is clear evidence to the contrary. Suggestions included looking at an average of several points in a pit and

over a number of pits in a particular area or discarding the highest reading in a pit. Also mentioned was using the United States Department of Agriculture (USDA) approach to determine if a mottle (color splotch different than the primary soil color) is a redoximorphic feature (created by the alternating presence and absence of saturated conditions in the soil that indicates a SHWT) or not. This would require additional training but would make the site evaluation more science based. The use of groundwater monitoring to determine the SHWT was discussed. Cristin said that a hydrogeologist should be involved before starting the monitoring to ensure that the results will be valid.

Bruce asked if the minimum number of test pits required in the WW Rules is appropriate. Some TAC members said they almost always do more. Sheri said that digging test pits in clay soils can create preferential flow paths and if the clay soils appear to be uniform across the area, the location and number of pits should take this into consideration. The TAC said that the number of pits needed is dependent on the site-specific conditions and the minimum number of pits specified in the WW Rules only work in ideal conditions.

Bruce asked if anyone is using soil augers as the primary method of soil evaluation. The group said that while auger readings are sometimes used, they are always in addition to test pits.

Bruce asked if the requirement to document the test pit examinations using the Natural Resources Conservation Service (NRCS) methods is useful. The use of this method was first required in the April 12, 2019 version of the WW Rules. Craig H. asked if the Regional Engineers had an opinion. Cristin said that the use of the NRCS method has been useful for designers who understand how the information can be used. Terry said that a large portion of the new systems approved are simple mound designs and most designers can use the NRCS method well enough to produce a good design. Some designers are not yet experts when a detailed application of the NRCS method is needed to calculate whether the system will function correctly. Steve said that he is always happy to see test pit logs that include an evaluation of the soil structure because it is directly related to how wastewater will flow through the soil.

Bruce displayed some very preliminary tables showing the relationship between soil textures, depth to SHWT, and depth to bedrock and to the type of system that could be constructed. The TAC is very interested in this topic, and it will be discussed in detail in the future. Jeff noted that one special concern relates to sites with a shallow depth of coarse textured soil to fractured bedrock. Well drillers have learned that if a wastewater system is installed too close to the bedrock the effluent may enter the fractured bedrock and move quickly to a drilled well potable water supply.

Bruce asked for comments on table 9-2 that specifies the loading rate in gallons per square foot of leachfield per day based on soil texture. Sheri suggested that silt loams, and some other textures, should be split into two or more categories.

New Business:

Ken asked that the TAC consider how best to deal with an ongoing problem for well drillers. The concern is that many permits are issued with a requirement that the water supply be a well drilled into bedrock because the well-leachfield separation distance is based on the use of a well drilled into bedrock. In some cases, when the well is drilled, an adequate amount of water is found in the unconsolidated material above bedrock. The WW Rules allow for use of a well in unconsolidated material, with the same isolation distances as a bedrock well, when the water bearing layer meets the definition of being a confined surficial aquifer per §1-201(19) of the WW Rules. At the present time, a permit amendment or a certification by a Licensed Designer that the change in plans meets all of the WW Rules is required. Because the underground situation is usually unknown until the well drilling is underway, the current practice can create expensive delays. Possible solutions include adding information to the plans to allow use of a bedrock well or a well that taps a confined surficial aquifer. A procedure might be developed that well drillers would follow to determine if the confined surficial aquifer conditions are met, and the determination could be documented in the well drillers report.