

**ANNUAL REPORT OF THE
TECHNICAL ADVISORY COMMITTEE
FOR 2022**

Established by Act 133 of the 2001 Adjourned Session

REGARDING OVERSIGHT AND IMPLEMENTATION OF THE

**WASTEWATER SYSTEM AND POTABLE WATER SUPPLY
RULES**

January 15, 2023

Members of the Act 133 Technical Advisory Committee*:

Karen Adams, Technical Services Manager (delegated Town of Colchester)

Cristin Ashmankas, Hydrogeologist & Sedimentologist (DEC)

Mark Bannon, P.E., Professional Engineer

Ernest Christianson, Retired Regional Office Programs Manager

Tom DeBell, Environmental Health Engineer (VT Dept. of Health) (added part way through year to replace colleague)

Bruce Douglas, P.E., Wastewater & Potable Water Supply Programs Manager (DEC)

Jenneth Fleckenstein, Water Quality Specialist

Anna Gallagher, Environmental Health Engineer (VT Dept. of Health) (left part way through the year)

Bryan Harrington, Indirect Discharge & Underground Injection Control Programs Supervisor (DEC)

Craig Heindel, Certified Professional Geologist & Hydrogeologist

Craig Jewett, P.E., Professional Engineer

Mike Jordan, Licensed Well Driller

Sille Larsen, Engineering and Water Resources Section Supervisor (DEC)

Gunner McCain, Licensed Designer

Stephen Revell, Licensed Designer, Certified Professional Geologist, and Hydrogeologist

Scott Stewart, Hydrogeologist, (DEC)

Roger Thompson, Licensed Designer

Ken White, Licensed Well Driller

Justin Willis, Licensed Designer

Sheri Young, Licensed Designer and Certified Professional Soil Scientist

*With positions at the time of appointment to the Technical Advisory Committee and retirements from State Service

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TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
Purpose	2
TAC Members	2
TAC Executive Committee	2
Meetings	2
 Activities of the Technical Advisory Committee:	
General Comments	3
Wastewater System and Potable Water Supply Rules (WW Rules)	3
Funding for Repair and Replacement of Failed Systems	3
Innovative/Alternative System Approvals and Renewals	4
Wells Completed in Unconsolidated Materials	5
Instantaneous Peak Demand (IPD)	6
Installers and Service Providers	6
Low Income Loan Program	7
 Appendices:	
Appendix A - Technical Advisory Committee Members and Subcommittees	
Appendix B - Regional Office Permitting and Training Information	
Appendix C - Approved Minutes	
Appendix D: List of Proposed Changes to the 2019 Wastewater System and Potable Water Supply Rules Proposed by TAC in 2022 for Consideration	

Annual Report of the Technical Advisory Committee

Purpose:

The Technical Advisory Committee was created by Act 133 of the 2001 Adjourned Session of the Legislature and incorporated into the Vermont Statutes as Chapter 64, Section 1978(e)(2) which appears as:

The secretary shall seek advice from a technical advisory committee in carrying out the mandate of this subdivision. The governor shall appoint the members of the committee and ensure that there is at least one representative of the following entities on the committee: professional engineers, site technicians, well drillers, hydrogeologists, town officials with jurisdiction over potable water supplies and wastewater systems, water quality specialists, technical staff of the agency of natural resources, and technical staff of the department of health. Administrative support for the advisory committee shall be provided by the secretary of the agency of natural resources.

Section 1978(e)(3) required the preparation and submission to the legislature of an annual report on several topics: the implementation of this Chapter and the rules adopted under this Chapter; the number and type of alternative or innovative systems approved for general use, approved for use as a pilot project, and approved for experimental use; the functional status of alternative or innovative systems approved for use as a pilot project or approved for experimental use; the number of permit applications received during the preceding calendar year; and the number of permit applications denied in the preceding calendar year, together with a summary of the denial. This report is a summary of the work by the Technical Advisory Committee and the recommendations made by the Committee during 2022.

Technical Advisory Committee Members:

Members of the Technical Advisory Committee (TAC) are recommended by the Secretary of the Agency of Natural Resources and appointed by the Governor. The full list of Technical Advisory Committee Members, and their contact information, is attached as Appendix A.

Executive Committee and Subcommittees:

The TAC has an Executive Committee with three members and two alternates that are available to answer questions or provide testimony to the Agency or the Legislature.

Meetings:

Online meetings were held on February 15th, March 15th, April 19th, May 17th, June 21st, July 19th, September 20th, October 18th, and December 15th. A hybrid meeting with in-person attendance and online participation was held on November 15th. The minutes from these meetings are attached as Appendix B.

Activities of the Technical Advisory Committee (TAC):

1. General Comments:

2022 was a busy year for the Technical Advisory Committee after the previous year with no meetings. The TAC worked on several topics.

2. Wastewater System and Potable Water Supply Rules (WW Rules):

The WW Rules were last updated in 2019. An overarching goal in drafting the 2019 Rules was to comprehensively reorganize and revise the rule to increase clarity and promote understanding. Corrections and updates to the April 12, 2019 version of the WW Rules has been an ongoing task almost since the date of adoption. Ernie Christianson, formerly Regional Office Manager of the Drinking Water and Groundwater Protection Division, prepared a list of changes dated November 18, 2020. The proposed changes were reviewed by the TAC and approved. In 2022 the TAC and the Department of Environmental Conservation (DEC) reconfirmed the need for the minor housekeeping changes and discussed possible areas of change for future rule updates (Appendix D). The DEC is working to get legal review of the proposed changes completed with a view to beginning the formal rule making process in early 2023.

This amendment to the 2019 Rules is to correct one important error, clarify some sections, and incorporate legislative directives after the effective date of the 2019 Rules.

- The important error in the 2019 Rules was changing the allowed depth of soil over bedrock for certain wastewater systems from 18 inches allowed in the 2007 Rules to 24 inches.
- Eliminate the percolation test. This has no change on the requirements for designing soil-based wastewater systems.
- Exempting holding tanks installed prior to July 1, 2020 pursuant to an Indirect Discharge Permit or authorized by the Agency of Agriculture.
- Allows soil analysis recorded prior to Jan. 1, 2007.
- Add an allowance for holding tanks to serve buildings (fairs and field days was the thought) used 28 days or less that generate more than 600 gallons of wastewater per day.
- Eliminates discrepancies and clarifies the technical standards for sewer/water piping crossings.
- Eliminates typographical errors.

3. Funding for Repair and Replacement of Failed Systems:

This year has seen a major increase in State of Vermont resources to help with failed or substandard water and wastewater systems. The Vermont Legislature approved a

\$1,000,000 fund in 2021. In addition, there is a \$15,000,000 fund created through American Recovery Act Plan (ARPA). The Department of Environmental Conservation has added new technical and administrative positions to assist with the need for the next few years. The DEC anticipates there will be approximately 500 or more additional applications to be processed by the Regional Offices during the next several years. A combination of many old systems, the increase in cost of construction and, since 2007, the fact that all major repairs or replacement of system are subject to a permit under the WW Rules has resulted in an ongoing increase in the need for permits. This funding will result in better public health, better environmental protection, and increased property values. In some cases, the increased property value will allow homeowners to obtain loans to make other needed improvements.

4. Innovative/Alternative Systems:

It has been 20 years since the Innovative/Alternative System section was first included in the 2002 version of the WW Rules. The use of these systems has greatly expanded over the years. There were no additional technologies approved in 2022. There were two initial applications submitted for approval that have not yet submitted all required and requested documentation. There are 14 advanced treatment systems approved for general use that allow for reduced site and soil requirements thereby making more lots approvable for development. There are 6 dispersal products approved. These substitute for the traditional pipe and stone system. There are 9 pilot approvals and 2 experimental approvals that allow these systems to be tested in Vermont for possible future approval for general use. The Department of Environmental Conservation (DEC) has made great efforts at ensuring these systems are properly installed and that they receive the maintenance required in the permit issued for their use. The DEC has also worked to ensure there are a minimum of 2-3 approved service providers for each of the systems. An interesting trend is approval of systems that do not require pumps or aerators which reduce the need for service inspections and the cost of operation.

I/A Approvals were renewed in 2022 for the following Innovative/Alternative Technologies

Approval Type	Company	Technology	Expiration Date
General I/A Treatment	Orenco Systems, Inc.	AdvanTEX and AX-Max	May 1, 2024
General I/A Treatment	Bio-Microbics, Inc.	MicroFAST and RetroFAST	May 1, 2024
General I/A Treatment	Bio-Microbics, Inc.	Lixor	May 1, 2024

General I/A Treatment	Norweco, Inc.	Singulair Series and Hydro-Kinetic	May 1, 2024
General I/A Treatment	Anua	Puraflo	May 1, 2024
General I/A Treatment	Anua	PuraSys SBR	May 1, 2024
General I/A Treatment	Anua	BioCoir	May 1, 2024
General I/A Treatment	Anua	AeroCell	May 1, 2024
General I/A Treatment	Advanced Onsite Solutions, LLC	The Clean Solution	May 1, 2024
General I/A Dispersal	Eljen Corporation	GSF	May 1, 2024
General I/A Dispersal	Infiltrator Water Technologies, LLC	ARC Series Chambers	May 1, 2024
General I/A Dispersal	Infiltrator Water Technologies, LLC	Quick4 Series Chambers	May 1, 2024
General I/A Dispersal	Oakson	Perc-Rite	May 1, 2024
General I/A Dispersal	GeoMatrix, LLC	GeoMat Flat Leaching System	May 1, 2024
Pilot I/A High-Strength Treatment	BioGill	BioGill	May 1, 2024
Pilot I/A High-Strength Treatment	Bio-Microbics, Inc.	HighStrength Fast	May 1, 2024
Pilot I/A High-Strength Treatment	Aqua Test, Inc	The Nibbler	May 1, 2024
Pilot I/A Treatment	Rich Earth Institute	Rich Earth Plumbed Fixtures	May 1, 2024

5. Wells Completed in Unconsolidated Materials:

This topic started with some Licensed Well Drillers who noted that Figure C-17 in the WW Rules, that depicts a typical driven well, includes a well screen. The Licensed Well

Drillers said that a well screen is rarely needed and rarely installed. This creates the potential for conflict with the Department of Environmental Conservation (DEC) that may note the actual construction does not include features shown in the WW Rules. While Figure C-17 is advisory, the TAC agreed to update the figure to minimize the chance of conflict.

The above discussion led to an associated one of how to amend a permit that was issued based on proposed construction of a drilled bedrock well, when, during drilling, it is determined that there is sufficient suitable water available in unconsolidated material above the bedrock. The original application review applies an isolation distance from wastewater disposal systems for bedrock wells and a larger isolation distance for wells in unconsolidated materials. During the original application review, a request may be made to reduce the required isolation distance between wastewater disposal system and a well in unconsolidated material when there are specific geologic factors present. These include a widespread thick layer of slowly permeable soil such as silt or clay. When the layer is thick enough that it takes two years or more for water to flow downward through the slowly permeable soil and the layer is wide enough to prevent the wastewater from bypassing the layer, the isolation distance can be reduced. Another situation is when the well penetrates a somewhat restrictive soil layer and the water level in the well rises to above the restrictive layer. This is called an artesian well and demonstrates that the well is supplied with water from a more distant location that would not be affected by the wastewater disposal system. Deciding whether a reduction in isolation distance should be granted can require additional soil excavations and/or a hydrogeologic review. The TAC agreed that, if a request is made to amend an existing permit or accept construction changes as part of the completion inspection requirements, the discussion needs to include the Licensed Designer for the application and the DEC staff.

6. Instantaneous Peak Demand (IPD):

This topic was raised by Licensed Designers who are dealing with a large increase in requests to add one-bedroom or two-bedroom apartments to an existing single-family residence. The WW Rules include a provision, §1-1109(d), that eliminates the need for a potable water holding tank provided that the source pump meets the IPD with the addition of a one-bedroom apartment. In practice, this often requires that the existing pump be replaced with one that can supply at least 10 GPM. The Licensed Designers explained that in some cases a relatively new pump must be replaced or an existing pump that can supply 7 or 8 GPM must be replaced which can be expensive. The TAC agreed to form a subcommittee that will review the current standards for calculating IPD. The WW Rules refer to the Vermont Plumbing Code that in turn refers to the International Plumbing Code. This code may be out of date and the subcommittee will review other codes to learn if the federally mandated changes to reduce water flow for plumbing fixtures should result in a reduced IPD for a particular building.

7. Installers and Service Providers:

The Vermont Legislature passed a requirement in 2021 that whenever a contractor is doing a project with a cost of \$10,000 or more, they must have liability insurance. The minimum insurance is for \$1,000,000 per occurrence and \$2,000,000 in total. This requirement was imposed because landowners have been left with uncompleted or substandard work that in some cases was paid for in full or in part. This has resulted in Installers of most wastewater systems being required to register with the Secretary of State's Office of Professional Regulation.

The DEC is also working on a grant that will be used to provide training to installers and service providers of wastewater systems. A request for proposal (RFP) has been released asking for plans to create the training program. The DEC is hoping that in the near future the combination of available continuing education opportunities, combined with the already in place registration will result in the movement towards licensing requirement for both these groups of wastewater professionals. A representative for the installers and for the service providers will be invited to participate in TAC meetings.

8. Low Income Loan Program

During calendar year 2022, the On-Site Loan Program made three loan awards for a total of \$71,143 in new loan commitments. All loans were for replacement of failed wastewater systems. The program has partnered with the Opportunities Credit Union to underwrite and service the loans made under this program.

In 2022, the Healthy Homes Program awarded funding to 190 low to moderate income households to repair or replace 227 failed or inadequate drinking water and/or wastewater systems. In total, 119 drinking water systems and 108 wastewater systems have received funding totaling \$5.6 million. Recipients are spread across the state, residing in every county in Vermont.

The Healthy Homes Program re-opened the pre-qualification application on December 12th for new applicants and will be accepting applications through January 31st. Since the pre-qualification application opened, the Healthy Homes Onsite Program has received 423 applications for financial assistance with failed or inadequate water supplies and wastewater systems. There were over 600 applicants who applied for funding in the first application cycle (March-April 2022) and appear to meet the eligibility requirements but did not receive funding in 2022; those applicants will have their application automatically added to the pool of applications being considered for 2023 funding. Applicants will be prioritized based on several factors including household income, severity of system failure, environmental impact, and presence of children or seniors in the home. With a total number of eligible applicants over 1000 households, a clear need continues to be demonstrated for this vital program.

APPENDIX A

Technical Advisory Committee Members as of December 1, 2022

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Executive Committee

Bruce Douglas, Steve Revell, Gunner McCain

Alternates: Sheri Young, Craig Heindel

Clerk: Roger Thompson

Appendix B

Compliance with Performance Standards for Regional Office Permits

Issued During Calendar Years from 2007-2022

	# of Permits Issued	# of Permits Meeting PEP Standards	% of Permits Meeting PEP Standards	Average DEC Days
2007	3746	3691	98.5%	16.8
2008	3435	3418	99.5%	12.3
2009	2691	2672	99.3%	11.8
2010	2621	2600	99.2%	11.9
2011	2289	2279	99.6%	13.2
2012	2472	2444	98.9%	12.7
2013	2449	2400	98.0%	14.0
2014	2503	2417	98.4%	12.6
2015	2367	2299	97.1%	11.8
2016	2647	2491	94.1%	16.2
2017	2253	2128	94.4%	16.7
2018	2527	2318	91.7%	15
2019*	2292	2110	84.0%	22.2
2020	2461	2344	95%	16.2
2021**	3085	2931	94%	22.6
2022	2961	2835	95%	29

Note: The performance standard for DEC days is 30 days for one-lot subdivisions and projects with a design flow of 500 GPD or less. The performance standard for other projects is 45 days.
 * The Program had 2 technical people retire in two offices at the end of 2018 which affected the ability to meet PEP standards and increased the Average DEC Days, particularly for the first 6 months of 2019.

**The Program had 2 technical people retire and 1 technical person leave the Program in 2021. The vacancies, in conjunction with the increase in applications, affected the ability to meet PEP standards and increased the Average DEC Days.

Failed Wastewater System Permit Information

Year	Applications Submitted to Repair Failed Wastewater Systems
2007	330
2008	507
2009	503
2010	495
2011	471
2012	432
2013	435
2014	473
2015	446
2016	528
2017	490
2018	497
2019	512
2020	687
2021	643
2022	552

Permit Information for 2022

Permits Issued to Repair Failed Wastewater Systems	Applications Denied	Number of Installation Certifications for replacement of failed wastewater systems due in 2022	Received installation certifications for replacement of failed wastewater systems due in 2022
550	1	631	539

* Reasons for denials:

Denials are issued for applications that are incomplete or fail to demonstrate compliance with the Wastewater System and Potable Water Supply Rules when submitted.

Innovative/Alternative (I/A) Wastewater System Summary 2007 to 2022

Year	Overall Number of I/A Systems Permitted
2007	137
2008	796
2009	538
2010	457
2011	424
2012	513
2013	521
2014	612
2015	594
2016	526
2017	545
2018	561
2019	536
2020	735
2021	841
2022	1032
Total	9368

Innovative/Alternative (I/A) System Inspection Reports Received

An Approved System Requires an Inspection Each Year

Year	I/A Reports Received
2012	52
2013	693
2014	891
2015	914
2016	960
2017	1040
2018	1037
2019	1013
2020	1351
2021	1404
2022	1190*

*multiple IA Service Providers have had health issues in the later part of 2022. The Program is allowing them to continue to upload their tardy reports for the first two weeks of January. The expectation is once complete the compliance reporting will exceed 2021's number.

Innovative/Alternative Technologies Permits in 2022 by Manufacturer

I/A Manufacturer	Number of General Use I/A Products Permitted	Number of General Use I/A Dispersal Technologies	Number of Pilot Use I/A Treatment Technologies Permitted	Number of Experimental Use I/A Treatment Technologies Permitted
Advanced OnSite Solutions	4			
Algaewheel			0	
American Manufacturing/Oakson	0			
Anua	0			
Aqua Test			2	
Aquapoint 3			3	
BioGill			0	
Bio-Microbics	3		0	
Busse			0	
Cromaglass	0			
Delta Environmental Products	0			
Ecological Tanks	0			
Eljen Corp		18		
F.R. Mahony & Associates, Inc.	0			
FujiClean	0			
GeoMatrix, LLC		10		
Hydro-Action Manufacturing, Inc.	12			
Infiltrator Systems		145		
Island Water Technologies	0			
Jet	61			
Norweco	33			
Oakson		4		
Orenco	60			
Premier Tech Environmental	40			
Presby Environmental		620		
Rich Earth Institute			12	
SeptiTech	5			
Total	218	797	17	0

Licensed Designer Program Education Opportunities

Year	DEC Sponsored Training		DEC Endorsed Soil Classes	DEC Endorsed Non-Soil Classes
	Classes	Attendees		
2010	5	120		
2011	4	110		
2012	7	215*		
2013	12	273*		
2014	12	173*		
2015	13	222		
2016	5	200*	20	36
2017	4	159*	16	20
2018	5	110	12	17
2019	12	186	12	17
2020**	2	33	6	34
2021	8	200*	11	39
2022	11	250*	11	33

* estimated

** due to Covid-19 many classes were cancelled. In response, additional online classes which could be taken at any time were added to the DEC Endorsed Class offerings and are only counted once on this chart.

Appendix C
Approved Minutes

Approved Minutes of the Technical Advisory Committee Meeting
February 15, 2022

Participation by videoconference

Attendees:

Karen Adams	Cristin Ashmankas
Mark Bannon, P.E.	Ernest Christianson
Bruce Douglas, P.E.	Jenneth Fleckenstein
Anna Gallagher	Bryan Harrington
Craig Heindel, CPG (Departs early)	Craig Jewett, P.E.
Mike Jordan	Sille Larsen
Gunner McCain	Stephen Revell, CPG
Scott Stewart	Roger Thompson
Justin Willis	Sheri Young
Michael Mezzacapo	Dick Bachelder
Carl Fuller	Denise Johnson-Terk
Allison Lowry	Terry Shearer
Lisa Stevens	

Scheduled Meetings: TBD

Previous Minutes: No approval of previous meeting minutes.

Minutes:

Bruce opened meeting at 2:02pm Eastern Time. Opening remarks. Discussed role as Program Manager at DEC. Due to short staffing within DWGPD, there has been some tardiness regarding renewing and setting up the TAC committee again. TAC is an important resource to the DWGPD. Bruce asked the recording to begin, and highlighted Michael Mezzacapo will take meeting minutes. Bruce asked for a brief introduction from new members of the TAC and any guests joining the meeting. Bruce asked for comments on draft agenda and explain rationale.

Executive Committee Nominations:

Previous executive committee (Ernie, Roger, Steve Revell +2 alternates Greg and Claude). Bruce asks for nominations of the three-member executive committee and two alternates. This group often provides leadership and testimony to the legislature. Roger withdraws name for consideration. Ernie requests Bruce replace him on the Executive Committee. Steve volunteers name for consideration. Roger thinks an engineer or designer. Gunner McCain is offered as a member. Sheri Young volunteers to be an alternate. Craig offers up consideration, however, would welcome others if they are interested.

Executive Committee:

Bruce Douglas
Steve Revell
Gunner McCain

Alternates:

Sheri Young
Craig Heindel

2021 TAC Report:

Bruce explained the previous report composition/review process. New information, including site technicians and data, along with recommendations to be discussed. 2021 TAC report was submitted in January 2022. Bruce asked if anyone received notice from the Governor's office of appointment. Bruce says certificates will be emailed and distributed to TAC members as a place holder while the official certificates are distributed.

Roger spoke about the oath that usually accompanied appointments.

TAC group, including Bruce, Steve and Cristin were asked to present/testify recommendations to the Senate Committee on Institutions (presented slides attached).

Steve gave initial impressions of testimony. Steve presented the membership represented and briefly went through items that were being worked on. On an ongoing basis we look at our set of rules and determine their functionality and if changes should be made.

Roger asked if the committee wanted anything regarding direction of the TAC. Bruce said none were given.

Bruce asked Cristin to share data/graphs, including permits issued/PEP standards and failed system permit applications, number of reports received for IA systems and total permitted systems for IA systems since 2007.

Cristin explained elements of the data regarding IA systems/reports. Craig J. asked how many reports should be received.

Bruce expects more opportunity to testify during the remaining legislative session. Other data slides can be circulated to the TAC if requested.

Craig H. asked if TAC has any regulatory role or are we advisory. If there is a role, can we give some examples?

Bruce said the original 2002 statutory language is to advise the Secretary.

Roger says the TAC official role is advisory but occasionally goes to legislators about certain topics they may want to consider for legislation.

Ernie gave an example that some legislators do not agree with that interpretation.

Bruce mentions there is interest at the commissioners and Secretary's office of ANR of TAC.

To summarize, we have no regulatory authority.

Roger said that TAC sends the report to the legislature.

Bruce mentioned a few things being discussed or which are being considered by legislature, such as accessory dwelling units related to wastewater permits. Bruce asked for other legislation being considered. No further comment by group.

Mark asked if the TAC was supposed to consider affordability regarding IA systems.

Roger thinks it was not part of the original mission, but Bruce early on produced a report on how Vermont was approving IA systems and if costs could be curbed. This was around the early 2000s.

Bruce agrees and thinks affordability is important regarding capital and operating costs. DWGPD does not have a criterion for costs. The original push for IA technology was because the legislature wanted to champion this.

Roger asks for hard copies for 2021 and 2020 TAC report. Bruce asks members to request printed copies if they need a hard copy of the report.

Cristin stated that she does collect both initial purchase/installation costs and maintenance costs as part of applications for new and renewed IA systems. Starting in 2020, this information has been presented to the TAC for new technology applications.

Rule Revision Status:

Bruce mentioned that less training went on relative to the new rules being rolled out due to the pandemic. DWGPD has faced challenges with working through the pandemic. Perhaps more training is needed on the newer rules. Data slide displayed rule revision alternatives.

Bruce discussed 6 rule revision alternatives. Listed in length of time to implement. 1st is fastest. TAC would play a significant role in all these revisions.

1. Housekeeping change
2. Full 2020 draft revision
3. Overhaul of style of 2020 draft rule
4. Separation of admin and technical standards into two documents
5. Complete technical overhaul of the rule
6. Other

Bruce offered comments from other members.

Ernie asked about perc test requirements in the current rules and revisions.

Bruce said the 2020 revision removes references to perc test.

TAC group voted to remove perc test.

Roger's preference is to figure out a package that TAC could get through DEC in a few months. Timeline is an issue.

Bruce thinks the selected approach should be a streamlined strategy. Does TAC want to repackage rules for consistency between onsite, underground injection control (UIC) and indirect programs.

Roger asks if you would need Federal signoff for UIC rules.

Bruce said Feds have an informal advisory committee. Wastewater program is to bring advisory committee relative of UIC program.

Bryan H. shared chart comparison of the rules across programs. Many similarities between indirect and WW rules.

Roger asked if there are specific elements where indirect and onsite are notably different. Slope, Indirect requires PE for design work.

Scott mentions that opening the whole rule up to change may drive deep into the legislative process.

Bruce mentions a technical improvement and administrative methods to revise rules. Goal is to simply the revision process and make it more accessible and usable. Merging the rules of the three systems can be beneficial, especially for future revisions.

Bryan's table will be reviewed and finalized in the next few weeks.

Cristin and Roger think UIC and Indirect should be separate chapter. Goal of IDR rule revision is to match rules with technical requirements.

Bruce notes that "other" suggestions for rule revisions are welcome. General discussion on the alternatives.

Roger says make sure the administration is willing to commit the time and resources to finish.

Ernie suggests keeping the same legal personnel for consistency. Ernie favors option 2. Favors seeing changes made and then address big picture stuff later.

Justin W. agrees with Ernie on #2 and even address issues that have come up since. Is in favor of simplification.

Roger supports #2 as well. Roger does not support the 3rd option if it is essentially a reformat due to the challenges.

Bruce suggests option #2 with the onsite rules to minimize change and break apart indirect discharge into two rules and have the common rule so it reflects the onsite rules. A way to keep forward progress while separating technical part for a larger overhaul. Full onsite rule, an IDR admin and technical standard. Future combined rules could be added such as potable water.

Roger asks for a couple page outline so it can be visualized.

Gunner suggests other minimum housekeeping changes. Doesn't see reason to go through full revision. Suggests #1. If we have goal of trying to correct housekeeping, we should skip full revision. Asks Bruce if the other changes are larger than housekeeping items.

Ernie believes there are additional changes regarding water supply and pipe materials that should be looked at in addition to the housekeeping items. It's important to do more than #1.

Bruce asks for motion to vote who is in favor of using option number 2. Members asked for further comment.

Roger thinks there are some additional changes and would like the group to send other technical topics to address vs policy issues to Bruce.

Sheri asked if the intent is for the IDR and onsite rules to be under one umbrella? Bruce says No. #3 and #4 would be most useful if that's the goal. Bruce says there is complexity regarding water quality aspects of the indirect. Bruce thinks that a coordinated approach is the better option.

Bryan H. says #4 was not to create one large rule but separate admin rules for IDR and onsite but combine elements of technical rules.

Cristin mentioned WQ requirements are state specific and could be rolled in onsite rules. Some elements of administrative overlap.

Bruce will circulate Roger's request for further review. Revised list of options and pros and con's for discussion and vote at next meeting.

Sheri suggests a non-technical document to supplement rules, so Vermonters find it accessible.

Ernie asks for clearer language on option 2 regarding the perk test.

Possible Future Topics for TAC:

Bruce asked what they prefer.

Sheri asked for a more orderly method to review and digest material.

Bruce added a few topics of concern that onsite program is experiencing:

- Short term rentals
- Occupancy limits
- Short term camping
- Stationary Food Truck

Bruce asked if anyone else wanted to add things to the list at the meeting.

Craig J: Asks about occupancy limits related to short term rentals. Thinks the rules handle the short term/long term rental. Shared concern over regulation. Cautions to avoid subject

Scott: Maybe we should review/expand the number and types of categories in the design flow matrix.

Steve R: Would like to have discussion on holding tanks on a design basis.

Bruce thinks accessory dwelling units be added due to the amount of discussion in the legislature and relevance of the topic. Should it be a "general permit" for those units on municipal sewer and water. Would have requirements but would not require a review.

Bruce gave an update on boundary line adjustments due to the amount of time/priority level. Looking at having boundary line adjustments done by licensed designer vs homeowner. Have fillable form online.

Gunner M. spoke about discrepancies in the Rules vs DEC interpretation.

Bryan R. Suggests TAC also look at PFAs related issues in wastewater

No public comments:

Meeting Frequency & Dates:

Bruce discussed previous meeting frequency. At one time it was monthly.

Roger thinks folks would meet more frequently, especially if progress could be made.

Bruce proposes initially monthly meetings (short term). Currently in the remote format. Bruce asked for comments regarding frequency.

Cristin asked if 3rd Tuesday's 2-4pm generally work for folks.

General agreement for this time frame.

TAC has historically looked at IA request and would be continued.

Technical difficulties (indistinguishable speech by Bruce at 3:55pm)

Two items for distribution:

- Explanation of rule revision options
- Topics for discussion by TAC

Sheri confirming that someone send 3rd Tuesday dates at 2-4pm.

Bruce asked for Public Comment by non-TAC members.

None

Bryan R. thanked attendees for their time and expertise.

Meeting closure: Roger motions to adjourn, Bryan H seconds. Motion passes.

**Approved Minutes of the Technical Advisory Committee Meeting
March 15, 2022**

Participation by videoconference

Attendees:	Michael Mezzacapo	Cristin Ashmankas
	Eric Deratzian	Bruce Douglas
	Carl Fuller	Gunner McCain
	Bryan Harrington	Justin Willis
	Jeanne Allen	Jeffrey Williams
	Jenneth Fleckenstein	Denise Johnson-Terk
	Karen Adams	Sille Larsen
	Mark Bannon	Roger Thompson
	Sheri Young	Steve Revell
	Lisa Stevens	Scott Stewart

Scheduled meetings:

April 19, 2022	by Video Conference
May 17, 2022	TBD
June 21, 2022	TBD
July 19, 2022	TBD
August 16, 2022	TBD
September 20, 2022	TBD
October 18, 2022	TBD
November 15, 2022	TBD
December, 20, 2022	TBD

Minutes:

Bruce started the meeting with an acknowledgement that the minutes and agenda were late getting to the Technical Advisory Committee (TAC). He said he would send the information at the end of each month so that the TAC would have at least two weeks to review and comment prior to the next meeting.

The minutes were reviewed. The minutes listed the attendees and their credentials and Sheri asked that her certification as a Professional Soil Scientist and the correct name of her company be listed. She also asked that the word average be removed before the word Vermonter

when describing non-technical documents to supplement the Wastewater System and Potable Water Supply Rules (Rules). Karen noted an incomplete sentence in Cristin's comments about the cost of I/A systems. The minutes were accepted as amended.

Innovative/Alternative (I/A) Systems:

Cristin opened a discussion of when a Department of Environmental Conservation (DEC) approval, renewal, or withdrawal of approval of an I/A System should be reviewed by the TAC. She asked if approvals, such as products that substitute for traditional methods or products accepted for use as septic tanks or effluent filters, should be done without TAC review. The group suggested that a quick email asking if TAC members had any comments would be a good idea. Justin asked that renewal requests be circulated because Licensed Designers often find areas for improvement in the installation and operation instructions from the vendors. The group agreed that the requirement for annual inspections could be eliminated for some products that do not involve mechanical systems. Justin asked if this could be done in a way that would cover the permits already issued without requiring a permit amendment.

The group discussed the issues for service providers. Some of the less used systems do not have a clear definition of who the vendor is or a good list of service providers. Some of the current approvals call for the vendor to approve the service providers. Cristin said that class BW and Class 1 Licensed Designers are approved to do annual inspections.

Bruce suggested that some products with an I/A approval should be moved into the Rules as a standard system. The group agreed that some systems have proven records and should not need a site-specific review.

Sheri asked that Licensed Designers be notified when any I/A approval is withdrawn including an explanation of why the approval was withdrawn. Justin noted that there should be direction on how to deal with any systems already permitted or installed.

Installers and Service Providers:

Cristin and Bruce said that DEC has applied for a grant to provide training for Licensed Designers, and this is a step towards getting support for licensing or certifying installers and service providers

Cristin said that there is an annual training session for service providers and asked if there should be one for designers. Sheri said yes and that there should be continuing education credits for the training.

Soil Absorption System Remediation:

Cristin said that the DEC has been approached about doing remediation work on failed or troubled systems. There has been use of remediation systems that use compressed air or chemicals to loosen the soil or break up the organic accumulation that restricts flow out of the leachfield. None of these systems have been approved for use in Vermont and vendors have been told that approval is needed prior to use.

The Rules allow for some work without a permit. The work is that included in the definition of Minor Repair or Minor Replacement. The definition lists specific repairs or replacements and then continues that the definition can include “any other repair or replacement that the Secretary, on a case-by-case basis, determines to be a minor repair or replacement.” The DEC has not exempted work that involves the interface between the leachfield and the naturally occurring soil around the leachfield.

There are at least two issues involved. While not approved in Vermont, some remediation systems have been used in other states. Part of the approval process for I/A systems is a demonstration of the “reliability and performance for its proposed use . . .” Therefore:

1. Should the approval process include a determination of the amount of function recovered and duration of the recovery that is likely to occur?
2. Should the determination result in approval/denial or in information that the property owner uses to decide the cost/benefit of the remediation?
3. If a particular type of remediation tends to provide only short-term relief, should its use be disclosed to a potential purchaser?

In addition, there may be sites where the existing leachfield is close to neighboring water supplies, the seasonal high-water table, or other features related to public health. Are there situations where the system should be replaced rather than using a remediation system once, or repeatedly, that would allow a continued discharge of wastewater from the leachfield that may endanger public health?

Gunner said that there are situations in which a person should be able to try a remediation. Even if the remediation is a short-term fix, it might help someone through the winter or until money is available for a better solution. Members also said that a Licensed Designer should be involved to decide if remediation is appropriate.

Sheri asked that there be consideration of a process that allows for the reconstruction of a mound type system that was previously permitted. She noted that the current process requires a full permit application and review that is expensive and time consuming. Steve said that a reason for the failure needs to be determined by a Licensed Designer as the first step.

Changes to the Rules:

Bruce outlined general approaches to updating the Rules with immediate, medium term, and long-term categories.

The immediate approach is to move forward with the proposed changes Ernie Christianson prepared either as is, or with limited changes focused on errors or omissions in the existing Rules and changes for clarity. With this approach the formal rule making process, which takes several months, could start in a month or two.

The medium-term approach would focus on separating the Rules into two sections. One section would cover administrative details such as when a permit is required, exemptions to the Rules, the process for reviewing applications, and appeals and enforcement. The other section would be the technical details for site evaluation and system design. The process would include fixing technical differences between the Rules and the Indirect Discharge Rules (IDR) and would make it easier to update the Rules in the future. It is estimated that it would take six to twelve months before starting the formal rule making process.

The long-term approach might include an overhaul of the style of the 2020 draft Rules, a technical and stylistic overhaul of the existing Rules, and a consolidation of all DEC rules that include wastewater dispersal via subsurface systems. It is estimated that it would take two to five years, if all the topics were covered, before the formal rule making process would begin.

Bruce said that there have been comments that the 2019 Rules are hard to follow, partly because of limited training. He also said that he would like to get outreach information regarding the Rules, the IDR, and the Underground Injection Control Rules (UIC) organized and coordinated.

Roger said that the review and preparation of draft rules needed to start the formal rule making process does not have to take several years. If the DEC makes it a priority, and attorney support provided, even a full review could be done in a year, provided that the EPA cooperates in the UIC changes.

Cristin said that the EPA would like to see an update of the UIC Rules. The EPA considers many wastewater disposal systems to be Class 5 Injection Wells that are currently

exempt from the Vermont State UIC Rules based on an exemption for wastewater disposal systems regulated under the Rules. The EPA wants to have an inventory of these systems which cannot be easily done with the current Vermont information systems.

The group discussed what changes might be included in the immediate approach. There is an existing draft that Ernie had prepared, most of which have been reviewed and supported by the TAC. Ernie had also included changes for clarity. The group discussed adding changes needed based on two years of use of the Rules since Ernie's draft was prepared. One example is a section in the Rules that requires the sewer line from the tank to the leachfield to be buried 4' deep or otherwise protected that is a change from the previous Rules. The group thinks that this is an error and should be corrected. The group identified other possible changes and Bruce said he would send a request to the TAC members for their suggestions.

Bruce asked the TAC to vote on how they would like to proceed. The first motion was to use Ernie's November 18, 2020 draft as the basis of the revisions. The TAC voted in favor of the motion. The second motion was to allow for other revisions that would be focused on corrections, clarity, and simple technical updates. The TAC voted in favor this motion.

Money for Repair or Replacement of Failed Wastewater Systems or Potable Water Supplies:

Bruce said that Vermont has \$1,000,000 available for repair or replacements. He said that the information was made public along with the process to apply for the money. There are already 400 applications that have been filed and many more are expected. The \$1,000,000 will not be enough for all the applications but the DEC is hopeful that more money will be approved. The current focus is on single-family, owner-occupied dwellings with an income limit.

The process for deciding how to allocate the funds has not been established but is not going to be first-in-time of filing the application. It not likely to be 50/50 water and wastewater systems. Sille suggested that immediate the health risks should be the priority. A person without any potable water might have a bigger risk than a person with a surfacing leachfield. Gunner asked if you must have a completed water or wastewater system design prior to applying and Bruce said no. If the applicant has severe financial limitations, the grant can include up to \$5,000 to pay for the design

Future Actions:

Bruce will send a request for possible additions to the draft rule update.

Sheri asked that the TAC create a priority list for future meetings.

**Approved Minutes of the Technical Advisory Committee Meeting
April 19, 2022**

Participation by videoconference

Attendees:	Cristin Ashmankas	Bruce Douglas
	Denise Johnson-Terk	Bryan Harrington
	Chris Tomberg	Lisa Stevens
	Carl Fuller	Karen Adams
	Craig Jewett	Justin Willis
	Ernie Christianson	Roger Thompson
	Dick Bachelder	Gunner McCain
	Steve Revell	Anna Gallagher
	Scott Stewart	Terry Shearer

Scheduled meetings:

May 17, 2022	Virtual
June 21, 2022	TBD
July 19, 2022	TBD
August 16, 2022	TBD
September 20, 2022	TBD
October 18, 2022	TBD
November 15, 2022	TBD
December, 20, 2022	TBD

Minutes:

The draft minutes of the March 15, 2022 meeting were inadvertently not circulated to the TAC prior to the meeting. They will be reviewed and accepted at the next meeting. Bruce will be sending information in an email to the TAC rather than attaching information to the Microsoft Teams® meeting notice. Ernie said that the meeting notice should be sent to the State Library system.

Proposed Changes to the Wastewater System and Potable Water Supply Rules (Rules):

Bruce had previously circulated a list of proposed changes that had been prepared in 2020 and updated on March 12, 2022. These have recently been checked by Jordon Gonda, Department of Environmental Conservation (DEC) counsel, who said they are generally in good shape for the start of the adoption process. These are viewed as mostly “house-keeping” changes or changes in response to the Legislative action or changes to related Environmental Rules. The TAC discussed possible additions to the list.

The TAC considered a recommendation to revise the language related to sanitary sewer service lines. This is the pipe from an individual building to a septic tank and onward to a leachfield or to a public or private sewer collection system. When the 2019 version of the Rules were adopted, §1-1002(g) added a requirement for a minimum burial depth of 4’ for all portions of the sewer line unless the DEC grants approval for an alternate design. The prior version of the Rules, adopted in 2007, and previous versions of the Rule, only specified a burial depth when under driveways. The greater burial depth adds cost for construction, including insulation or other methods as part of a request to reduce the burial depth. It also creates design problems because the maximum depth of a system into the naturally occurring soil is 36” which requires the sewer pipe to be less than 36” to ground level. The group was unaware of significant problems with designs prepared according to the 2007 Rules and recommended returning to the 2007 language.

Scott suggested that the diagrams currently included in appendix C be moved into the body of the Rule so that they will be easily viewed while reading the related text. Some of the diagrams are referenced in more than one place in the text. The diagrams are used as part of the testing program for Licensed Designers. There was support for Scott’s suggestion as well as for keeping the present location. When asked, Bruce said that reformatting the Rule to place the diagrams in the text would take quite a bit of time. The TAC supports a quick adoption process that will be followed in short order by a more complete update. Steve moved that the diagrams be left where they are for the moment but that there should be further consideration in the next update. The TAC voted with 10 members in favor of the motion, and none opposed.

Bruce said that the DEC is considering a revision to the process for a boundary line adjustment which appears as §1-304(9) in the Rules. The current process requires that a plan of the proposed boundary line change be prepared by a Licensed Designer or a Land Surveyor. If the proposed change meets subsection (i), (ii), or (iii) of §1-304(9)(A) it is then recorded and indexed in the municipal land records. If the proposed change is based on subsection (iv) of §1-304(9) of the Rules, a request is filed with the DEC. The request is reviewed and if the DEC agrees that the proposal satisfies subsection (iv) a letter is issued which must be recorded and indexed in the municipal land records. The DEC is considering a change so that determination of compliance with subsection (iv) will be made by a Licensed Designer. Karen asked if a written

determination would still be made. A written determination of compliance made by a Licensed Designer would be recorded and indexed in the municipal land records. The DEC is considering this change to reduce the time required to complete a boundary line adjustment and to reduce the DEC workload. Bruce noted that the existing process does not result in a numbered document that can be easily found nor is the document posted online with the permits that have been issued by the DEC. Subsection (iv) states . . .”the Secretary makes a written determination that the proposed adjustment will not have an adverse effect on any existing potable water supply or wastewater system on the affected lots.” Gunner asked if this proposal might make a Licensed Designer a target for an attorney who wants to argue about the language in subsection (iv). For instance, would transferring land that would be suitable for an inground system while keeping land for a fully complying mound be considered an adverse effect. The TAC suggested adding language to the Rules that would clarify the Rules. Karen moved that DEC proceed with the proposed change. The motion was supported with 11 members in favor, and none opposed.

Innovative/Alternative Systems:

Cristin said she would like to make it clear in the Rules that Septic Tank Effluent Pumping (STEP) systems are acceptable in Vermont. She suggested that one step would be to add the Orenco STEP system to the list of approved products. The Orenco Company supplies a full design package that allows a user to make a quick assessment of whether the system might work for them. The system may be appropriate for private use in a multi-lot development or for a portion of a municipality. The installation, operating, and maintenance costs are less than for traditional collection systems. A Licensed Professional Engineer can also design a system from scratch using pumps, chambers, piping, etc. based on the site-specific conditions. This might be a good topic for continuing education training. The TAC supports this approach.

An application for General Use Approval for low-strength wastewater has been submitted for the SludgeHammer® system. This is a fixed film with aeration system. The treatment components are installed in the septic tank. It appears that only aerobic treatment occurs prior to discharge to the leachfield. Operation of the system requires periodic addition of a proprietary SludgeHammer Blend™ material. There are several units for different design flows and residential or commercial use. Some units have NSF approval for systems meeting the 30 mg/l BOD and 30 mg/l TSS limits. These limits allow for use the Filtrate Effluent design standards per §1-904 of the Rules. The system is currently approved for use in Minnesota, Colorado, Alabama, and Ohio. The number of installations is not documented in the application. A few similar systems have been installed in Massachusetts. The application states that electricity costs are expected to be about \$74 per year at \$0.14 per kWh. Gunner asked if there is an alarm system for high sludge level and there is not. There is an alarm for the failure of the air pump. Craig asked about the replacement process for the fabric screens in the tank. Replacement appears to

require entering the tank. The TAC discussed this application and expressed concerns about the limited history and the lack of a primary treatment tank prior to treatment tank. The TAC asked if a Pilot Use Approval might be appropriate. Also discussed was the question of adding an advanced treatment system to an existing failed system and the group thinks that the existing system should be reviewed for health risks such as lack of separation to the Season High Water Table and potable water supplies. This question applies to all advanced treatment systems.

A renewal application for the ClearPod™ treatment system has been received. The original application was approved in 2018 and expired in 2021. The DEC has received comments from service providers that the system did not seem to improve the operation of the wastewater system. Some ClearPod™ systems have been installed that then flow to another advanced treatment system. The ClearPod™ did not significantly improve the overall treatment of the wastewater based on samples that were collected and analyzed. The TAC suggested that DEC contact the vendor and ask if they can provide additional information about the system.

Bruce asked about the Lixor® System. This is an aeration system that is approved for general use and treats the wastewater to meet the 30 mg/l BOD and 30 mg/l TSS Filtrate Effluent requirements per §1-904 of the Rules. Steve said that one system had been installed in a slaughterhouse situation and used to treat the wastewater prior to flow through another advanced treatment system. The system did help bring the overall system into compliance.

Other Topics:

Bruce asked that TAC members respond to the poll that was circulated to rank the order in which future topics would be discussed. The Regional Office staff will also be polled.

Bruce met with the House Fish, Wildlife, and Natural Resources committee to discuss S.226. The bill is about housing affordability and some other topics. This bill would allow a municipality to request authority to approve water and sewer connections by just filing a letter to register with the DEC. The bill could allow for State approvals and municipal approvals in the same municipality which would be confusing to designers and applicants. Bruce told the committee that less than 10% of all projects would likely qualify. He also noted that only two municipalities have ever requested delegation authority and therefore the number that would ask for this authority might be small. Bruce explained that the amount of confusion for people trying to determine if they need a state permit might cause more problems than now exist. The bill does also create a requirement that building contractors register with the Office of Professional Regulation if they do projects costing more than \$10,000. A process for certification of building contractors in specialties will also be established. The bill budgets \$200,000 to hire staff to process contractor registrations and certifications.

Bruce reported that Mary O’Leary is completing a report on Indirect Discharge System’s (IDS) performance. She will continue the work she began last fall about the cost, availability, and certification of mound sand. There is some money left in the grant if there are suggestions for another study that could be completed by Fall.

Bruce is also looking for ways to improve the decision making related to issuing variances when full compliance with the Rules is not possible. Some applications need many variances and the point where a holding tank should be required rather than constructing a system is not clear. This may be an opportunity for Mary O’Leary to research variance programs in other states and evaluate the variance requirements in Vermont.

Meeting in person versus online was discussed. Several people supported having in person meetings while others expressed concerns about the ongoing COVID pandemic. Steve said that his town planning board had been using a hybrid approach successfully. Bruce will look into arranging for a meeting using the hybrid approach.

**Approved Minutes of the Technical Advisory Committee Meeting
May 17, 2022**

Participation by videoconference

Attendees:	Cristin Ashmankas	Bruce Douglas
	Denise Johnson-Terk	Sheri Young
	Michael Mezzacapo	Bryan Harrington
	Chris Tomberg	Lisa Stevens
	Jen Fleckenstein	Karen Adams
	Craig Jewett	Roger Thompson
	Dick Bachelder	Gunner McCain
	Scott Stewart	Terry Shearer
	Brett McCreary	Sille Larsen

Scheduled meetings:

June 21, 2022	Virtual
July 19, 2022	TBD
August 16, 2022	TBD
September 20, 2022	TBD
October 18, 2022	TBD
November 15, 2022	TBD
December, 20, 2022	TBD

Minutes:

The draft minutes of the March 15, 2022 meeting were reviewed. Sheri asked that the comment about repair of a failed mound system indicate that it applies to previously permitted systems and covers all modes of failure. The draft minutes of the April 19, 2022 meeting were reviewed and accepted.

Currently proposed Changes to the Wastewater System and Potable Water Supply Rules (WW Rules):

Bruce updated the TAC on the status of the WW Rule update. This update is limited in scope and includes changes that have been discussed by the TAC and recommended for immediate adoption. He said that Bryan had done a line-by-line review of the Indirect Discharge Rules (IDR) looking for conflicts with the WW Rules and other rules. There are a few conflicts that need to be resolved.

Bruce also reported that, due to a vacancy in the legal section of the Department of Environmental Conservation (DEC), all rule updates will be reviewed and prioritized by how urgently the changes are needed. Bruce spoke with attorney Jordon Gonda who is reviewing the updates to the WW Rules, and she said that there appears to be only a small amount of work left to complete the process. Because the amount of remaining work needed to begin the formal rule adoption process is small, Bruce is hopeful that he will have permission to move forward.

Innovative/Alternative Systems:

Cristin reported that she has not received any applications or information submissions since the April TAC meeting that need a TAC review.

Cristin asked for comments about the need for septic tanks prior to the treatment portion of an advanced treatment system. The designs submitted for approval vary with some specifying the equivalent of a standard septic tank, some using a smaller pretreatment tank, and some not requiring any tankage prior to the treatment portion of the system. She said, for example, that the Jet System, which is an aeration/fixed film treatment system, includes a small primary settling tank while indicating that a standard septic tank is not required before the treatment system. Cristin noted that the existing WW Rules for Innovative/Alternative Systems do not include a clear statement of whether a standard septic tank is required prior to all advanced treatment systems. Gunner suggested that if the applicant proposes an advanced treatment system without a standard septic tank, the applicant should provide information demonstrating successful operation without the septic tank.

Prioritization of Topics for future WW Rule updates:

The TAC reviewed a list of topics that was circulated to the TAC and separately to the Regional Office staff. The discussion was just to outline the topic enough to help decide how to prioritize it.

1. **force main leakage testing:** This topic has been previously discussed by the TAC and the group agreed that it should be included in the currently proposed changes. The standards for doing the testing need to be the same in the WW Rules and the IDR. It may be appropriate to reduce or eliminate the testing for some small systems that serve only a single landowner because of the expense of the testing outweighs any benefits.
2. **graywater system design flows:** these design flows will be reviewed by the TAC to determine if they should be updated. Gunner noted that the graywater term might be misleading because the wastewater flow includes all the same pathogens even if the toilet waste is removed from the flow. Sheri said that there is a legislative committee that is working on water conservation issues so TAC review will be timely.
3. **continuing education for Licensed Designers:** The WW Rules require that the DEC provide at least one soils based course per year for licensed designers. This was challenging during the pandemic but should be addressed. Terry reported that he is seeing evidence of many substandard installations of wastewater systems and that there is a need for education of installers. The current WW Rules require completion inspection forms to be submitted to the DEC. Many systems must be certified by a Licensed Designer, but a portion of the installations can be certified by the installer who may or may not be a Licensed Designer. He noted that systems that are installed and certified by the landowner are often in compliance with the permit. He said that training, a certification program, and maybe licensing should be considered to ensure that systems are installed as approved. Substandard installations may burden current or future landowners if the system fails to operate properly. Bruce said that he is waiting to see if a USEPA grant application through the Lake Champlain Basin program with \$200,000 for training of installers and service providers (inspectors of advanced treatment systems required by the permit) is approved. Bruce also noted that S.226 which would require contractors doing projects of more than \$10,000 to register with the Office of Professional Regulation and to have liability insurance. This bill is awaiting action by the Governor.
4. **non-soil-based systems and water conservation measures that might reduce the size of the wastewater disposal system:** Some of the potential water conservation measures involve treatment and reuse of the wastewater. Any use of these systems will need to have plans for operation and maintenance along with a process to ensure compliance.

5. **financing failed system upgrades for water and wastewater systems:** Bruce reported that there is an existing state program to help with this. It has an appropriation of \$1,000,000. Once the availability of help was made public, 1,200 applications were filed. These have been screened for compliance with the application requirements with 250 already determined to be eligible. More of the 1,200 are expected to be eligible. Bruce said that the state budget, awaiting the Governor's action, includes an addition \$15,000,000 for failed system upgrades. The DEC estimates that, if the money is approved, there may be up to a 30% increase in total applications and that the DEC proposes to add at least two positions to help with the work. Bruce asked if the Licensed Designers have the capacity to handle the increased workload. Craig said that he believes all the Licensed Designers are already overloaded and adding this much work to the system will result in longer delays for site evaluations and permit application submissions. Installers are also overloaded, and it can take several months to have a system installed.
6. **tracking reasons for failed systems:** Cristin said that the new application form asks why the system failed. In most cases, the designer checks for some common causes of failure that might affect a replacement system, such as too many users, large amounts of grease discharged into the system, maybe whether there is a garbage disposal, or poor drainage around the leachfield area. Gunner said that once he determines the system is failed, he moves on to designing a replacement system. Sheri said that usually some exploratory digging is done related to the failed system. Sheri said that there should be a simplified permitting process with an application that could be submitted and approved online so that the repair work could start quickly.
7. **tiny houses:** there is interest in this topic as a partial solution to the lack of available housing. Bruce said that one issue that does not always come up in tiny house discussions is the wastewater disposal issues. Bruce said that the current requirement for a minimum of a two-bedroom capacity for water and wastewater systems could be a limitation for tiny houses and could be reviewed.
8. **establishing inspection intervals for systems within buffer zones of potable surface water sources:** There are concerns that failed wastewater systems are contaminating surface water that is used as a potable water source. The process might include periodic site evaluations, and/or septic tank pumping of all wastewater systems within a specified distance around any lake or pond. Sheri

suggested that a one-mile radius might be appropriate. Silie asked if the process would protect all water supplies or only newly permitted ones. Sheri said her concept is that it would cover a specified area around a lake or pond so it would help protect any existing or future surface water supply.

9. **sewer line requirements from the septic tank to the leachfield:** This was discussed at the previous TAC meeting and a recommendation was made to return to the language in the 2007 WW Rules. Bruce said that this is included in the currently proposed changes to the WW Rules.
10. **sieve-size requirement for mound sand and testing frequency for certification:**
Bruce said that Mary O’Leary is reviewing this topic and will provide a report. The TAC will review the information and make a recommendation.
11. **boundary line adjustments:** Bruce is working on a process that would allow Licensed Designers to approve boundary line adjustments, based on requirements in the WW Rules, without requiring that the documents be submitted to the DEC. This change would save time for the applicant and reduce the Regional Office staff workload. The language will need careful drafting.
12. **adding an occupancy limit to wastewater permits:** There are concerns that some buildings are being over occupied, particularly those subject to short term rental. The DEC has seen buildings advertised with sleeping capacities much larger than what the water and wastewater systems are designed to handle. One current approach is, based on the advertisement, sending a letter to the permittee stating that this is a permit violation and filing the letter on the land records. Filing on the land records ensures that any future owner of the property is also notified of the issue. Roger and Sheri said that putting an occupancy limit in the permit is not a good idea. Roger said that enforcement would be difficult in that evidence would need to be collected to support any claim of permit violation. There would be issues of what happens if once in a while a large group spends the night and how do you respond to a neighbor’s complaint.
13. **installing a composting toilet in an existing single-family residence:** The TAC during discussions in 2020 supported an exemption for such an installation. The proposed language would be inserted in the WW Rules as §1-301(g)(6).

14. **energy efficiency for wastewater systems:** There should be discussion of the energy requirements of wastewater disposal systems. The permit applicant should be informed about the estimated cost of electricity if a system involves mechanical treatment.
15. **designing for climate change:** The potential for damage to water and wastewater systems that may occur as the climate changes should be reviewed.
16. **permit navigator:** Cristin discussed the permit navigator system. This is an online tool that uses a series of questions to point a designer or landowner towards the next steps in resolving their problems. The system is being updated and Cristin recommends that Licensed Designers use it prior to visiting a site.
17. **variance process:** Bruce said that he is concerned that the existing process for deciding when a variance allowing construction of a replacement wastewater disposal system versus requiring the installation of a holding tank system is not clear. Mary O’Leary will be evaluating other state regulations and Vermont’s variance process. One approach that may be worth considering is to develop a system that would utilize a ranking/risk management system to different variances from a specific requirement in the WW Rules. An example would be a situation where the variance request is a reduction in the size of a leachfield versus a situation where the variance request is for a reduction in separation to the seasonal high-water table.
18. **seasonal use versus year-round use:** Sheri asked that consideration of basing approval on the site conditions, primarily depth to seasonal high-water table, that occur during the proposed period of occupancy.

Other Topics:

Sheri asked if the Governor had approved the TAC membership recommendations. Bruce said that he had and that he had an electronic copy of all of the approvals in a single PDF. Bruce will have the document divided into separate pages and will send each members approval to them.

**Approved Minutes of the Technical Advisory Committee Meeting
June 21, 2022**

Participation by videoconference

Attendees:	Cristin Ashmankas	Bruce Douglas
	Terry Shearer	Denise Johnson-Terk
	Steve Revell	Ernie Christianson
	Roger Thompson	Craig Jewett
	Lisa Stevens	Scott Stewart
	Bryan Harrington	Catherine Bryars
	Karen Adams	Jeanne Allen
	Justin Willis	Mark Bannon
	Gunner McCain	Rachel O'Reilly

Scheduled meetings:

July 19, 2022	Virtual
September 20, 2022	Virtual
October 18, 2022	Virtual
November 15, 2022	Hybrid
December, 20, 2022	Virtual

Minutes:

The draft minutes of May 17, 2022 meeting were reviewed and accepted as drafted.

Currently proposed Changes to the Wastewater System and Potable Water Supply Rules (WW Rules):

Bruce is still working on making changes to the 2020 draft. Once these are complete it will be submitted for review by the legal department.

Innovative/Alternative Systems:

Cristin reported that she has received one application that may be ready for Technical Advisory Committee (TAC) review at the July meeting. Bruce noted that because the 2019 Wastewater System and Potable Water Supply Rules (WW Rules) approve septic tanks made with materials other than concrete, these no longer need product approvals under the I/A process. This reduces the administrative burden for the regulators and the manufacturers. Cristin is also working with vendors that failed to request renewal of their approvals in a timely fashion and expects that the expired approvals will be reinstated soon.

American Recovery Plan Act (ARPA) Update:

Bruce said that Governor Scott signed the budget that included \$15,000,000 that can be used to replace or repair existing failed water or wastewater systems. This adds to the \$1,000,000 that was previously approved. This money is targeted for owner-occupied homes and can include up to four residential units. Approximately 1,250 applications have been submitted and 250 have been selected for final review. A site inspection will be made to verify that the existing wastewater system or water supply is failed. More of the existing applications, along with future applications, are likely to qualify for this program. A separate allocation of approximately \$15,000,000 has been made that is targeted at mobile home parks and multifamily housing. An application for this money will be reviewed and if it qualifies, money will be approved to pay for the required design work.

The Department of Environmental Conservation (DEC) estimates that the Regional Office workload will increase by 20% as landowners apply for assistance. Because applications for failed systems, and all of the new work will be for failed systems, these applications will be a priority. The Department is adding two positions for the program for single family residences and is requesting additional positions for other applications. The DEC is also working to streamline the existing application and review process so that resources can be applied to the new work. Cristin said that there is a coming update to the online application form, though there are delays on the part of the IT consultants in completing the project. The new form will flag the applications that are requesting assistance under the new programs.

Short Term Rentals, Campsites, and Food Trucks:

Bruce informed the TAC that the DEC has drafted fact sheets for each of the above categories. These fact sheet use a flow chart approach to help designers and landowners understand when a permit is required and when it is not. The Regional Offices receive a large number of phone

calls, and the DEC hopes that fact sheets can reduce this workload so that new tasks can be accommodated. The TAC is very interested in these fact sheets and requested that drafts be circulated to the TAC. In just a few minutes the TAC raised questions that should be addressed in the fact sheets and noted that getting more of the questions resolved before spending time on the legal review might improve the product.

The Variance Process as Related to Holding Tanks:

The DEC frequently deals with applications for replacement of failed wastewater systems on sites with severe limitations. The fallback position for sites with severe limitations is to impose a requirement that a holding tank system be installed. The cost of maintenance and operation can be high for a residential property; therefore, the DEC considers whether one or more variances from the technical standards can be granted that would allow for onsite disposal without creating a significant risk of a public health hazard. The DEC is working on a checklist that would standardize the process. This would help regulators, designers, and landowners move through the application process. Gunner noted that a variance checklist had been reviewed by the TAC many years ago and might have some useful information.

Steve suggested that the design requirements for holding tanks be updated. The current WW Rules, with a requirement that the holding tank have storage capacity for 14 days of design flow, can result in very large tanks. The tank capacity in some cases is so large that a pumper truck would need to make two trips to empty the tank one time. Roger agreed and suggested that agreeing to a reduction in design flows closer to what the current use of the building is an effective way to reduce the size of the holding tank. If the reduced size requires too frequent pumping, additional tanks can be added.

Lake Champlain Basin Grant Request:

Cristin said that a \$200,000 grant request to the Lake Champlain Basin Program has been awarded to DEC for the Regional Office Program to implement'. The grant would support outreach programs for designers, installers, and service providers around Lake Champlain and consider what other actions should be considered to protect the water quality. Ideas include periodic site inspections, periodic septic tank pumping, as well as licensing/certification programs for installers and service providers. There are some installers and service providers who are not doing high quality work and the DEC would like to ensure that installation and maintenance of systems is properly done. Ernie said that installers supported a licensing/certification program if training is provided. Terry said that one proposal discussed with installers was just a requirement to register without any testing or preconditions, but that periodic training would be required to maintain their registration. Roger said that the idea of

compulsive site inspections and/or septic tank pumping was considered during previous rule updates, but it was decided that it would be more expensive than justified. Craig suggested that a time of sale inspection, such as is required in Massachusetts, might protect potential buyers.

Other Topics:

Bruce asked if the requirement to notify adjacent property owners when isolation distances related to water or wastewater systems extend onto their property is still a big issue for applicants and designers. Craig said that there are often calls to a designer from a neighboring landowner but, with the process having been in place for several years, it is easy to explain that unless there is new information that the designer was unaware of, there is no basis for an official appeal. Terry said that the main issue for the Regional Office staff is that people call before the application has been filed with the State so they can give no opinion. This often results in a request that the Regional Office staff call after the application is filed which is an added administrative burden. Bruce asked if designers and applicants are trying to design systems that do not require notification of neighboring property owners, and Craig said yes.

Ernie asked if the TAC wanted to skip the August meeting as was done in the past to avoid vacation conflicts. The group agreed to skip the August meeting.

Craig asked if the DEC was moving forward with the idea of separating the WW Rules into a technical document and an administrative document. Bruce said yes but that it would be considered in a future rule revision.

Bryan said that he has reviewed the WW Rules in comparison to the Indirect Discharge Rules (IDR) and has drafted some changes to the IDR to help coordinate the two.

Bruce is trying to arrange for Mary O’Leary to attend the July TAC meeting so she can discuss how other states evaluate failed systems and use the variance process for replacement of failed systems.

Prioritization of Topics for future WW Rule updates:

Bruce asked about the topics the TAC should consider next. After a brief review of the priority lists suggested by the TAC and the Regional Office staff, Bruce said he would suggest the next topics in the draft agenda for the July meeting.

**Approved Minutes of the Technical Advisory Committee Meeting
July 19, 2022**

Participation by videoconference

Attendees:	Bruce Douglas	Denise Johnson-Terk
	Sheri Young	Justin Willis
	Ernie Christianson	Mark Bannon
	Carl Fuller	Bryan Harrington
	Justin Willis	Roger Thompson
	Eric Deratzian	Craig Jewett
	Jeanne Allen	Karen Adams
	Cristin Ashmankas	Mary O’Leary
	Gunner McCain	Catherine Bryars
	Scott Stewart	Dick Bachelder
	Lisa Stevens	Steve Revell

Scheduled meetings:

Note: The meeting scheduled for August has been cancelled.

September 20, 2022	Virtual
October 18, 2022	Virtual
November 15, 2022	Hybrid
December, 20, 2022	Virtual

Minutes:

The draft minutes of June 21, 2022 meeting were reviewed and accepted as drafted.

Currently proposed Changes to the Wastewater System and Potable Water Supply Rules (WW Rules):

Bruce said that he has not finished the updates. He is getting the increased staffing in place that is needed to administer the funding now available from the American Recovery Plan

Act (ARPA). The Department of Environmental Conservation (DEC) is requesting 5 additional staff for a 5-year period to handle the new workload. There is approximately \$15,000,000 approved to replace or upgrade failed water and wastewater systems. About 250 applications have been identified as candidates for assistance. The next step is for DEC Environmental Enforcement Officers to make a site inspection and determine if the water or wastewater system qualifies for a grant. DEC estimates that the funding will cover at least 750 systems. The money will be paid directly to the designer and the installer. Sheri asked if the designer will be paid for their work up-front. In some cases, the cost of the site investigation and design preparation can be paid up-front. If the project is approved for construction the money can be paid during the project based on the amount of work that has been completed.

Innovative/Alternative (I/A) Systems:

The DEC Regional Engineers said they have been getting questions about a requirement that all I/A systems have a septic tank sized in accord with the April 12, 2019 Wastewater and Potable Water System Rules (WW Rules) prior to the I/A system unless the equivalent capacity is included in the I/A system. The original approvals for I/A systems were based on the design package submitted by the manufacturer that were referenced in the approval documents and not all the approved system have this capacity. There are concerns that not everyone involved in the design and installation of the I/A is aware of this requirement. The DEC said that service providers doing maintenance and annual inspections have reported a need to pump some I/A systems at very short intervals of 2-3 months. The Technical Advisory Committee (TAC) discussed this information and the designers present indicated that they have not experienced this problem. TAC members suggested a return to the original approval requirements unless a determination is made as part of a renewal review that a particular I/A system needs additional storage capacity prior to the treatment part of the system. The DEC noted that the WW Rules allow for a smaller septic tank based on a case specific analysis. Justin asked if the Regional Engineers are authorized to make this decision. Bruce said he will try for a global solution, probably returning to the original approvals in the meantime. Sheri said that it is important that designers be notified of any concerns that are being discussed so they can provide good service to their clients.

Failed System Guidance Document:

Mary O'Leary discussed her progress on preparing a guidance document to help decide if, and how, a wastewater system has failed. A document prepared by the State of Georgia was used as a starting point. The checklist is currently 13 pages long and is targeted at Licensed Designers and new DEC staff. The checklist includes sections on site characteristics, history of

operation and maintenance, and the type of building and its occupancy. Ernie asked if the checklist included questions about wastewater strength. The current draft does not include this topic. The checklist is under review by the Regional Engineers and some Licensed Designers. Once the checklist is finalized, the DEC will provide training to Licensed Designers. The training will include credit towards the required continuing education for Licensed Designers. Sheri recommended that the training be done during the winter. Karen suggested that the checklist be sent to the local Health Officers.

The checklist could be modified for routine inspections and a checklist could be created for use by system installers.

Alternatives to Current Requirements for Water and Wastewater Systems:

The TAC discussed this topic and identified a list of issues that need to be reviewed:

1. Buildings without piped water. This category might include an onsite well with a hand pump, water hand carried from an off-site potable water system, a non-potable source, or other options.
2. Wastewater flow reduction which might include composting toilets, water reuse systems, or other options.
3. How to manage the disposal of material from composting toilets.
4. If the toilet waste is separated, how to dispose of the remaining wastewater?
5. Should the current design flows be changed? This would include the flow per bedroom or another category in the WW Rules. The two-bedroom minimum requirement should be reviewed.
6. What are the concerns if a person with a non-traditional water or wastewater system wishes, or needs to because of aging or health issues, upgrade to a traditional system?
7. Should there be a minimum lot standard while also allowing non-traditional water and wastewater systems to be installed?

The Eco Sanitation Group is continuing their work. The primary focus is on composting of fecal matter and will result in a best practices document.

Other Topics:

Karen said that in Colchester she is dealing with requests to add accessory dwelling units to existing single-family residences. This often requires that the existing well pump be replaced because the current WW Rules require a 5 GPM capacity per living unit. This seems excessive. Justin and Steve said they were dealing with the same issue and agree that the existing requirement is excessive, and that the TAC should review this.

Bruce noted that while the Regional Offices are pretty much fully staffed at this time, there are processing more than 3,000 applications per year which is near the historical maximum. With the expected increase in workload from the DRPA funding, it is important to get additional staffing in place as soon as possible.

Bruce discussed his plan for a hybrid meeting in November and asked for input on when and where. Steve said just pick a date and go with it. Ernie suggested the Montpelier Room at the National Life Building because it is large enough to have some separation between attendees.

Bruce will notify the well driller TAC members that we will be discussing water design flows and alternative systems at the next meeting.

As decided at the last meeting, there will be no meeting in August.

**Approved Minutes of the Technical Advisory Committee Meeting
September 20, 2022**

Participation by videoconference

Attendees:	Scott Stewart	Bruce Douglas
	Justin Willis	Roger Thompson
	Jen Fleckenstein	Steve Revell
	Lisa Stevens	Denise Johnson-Terk
	Bryan Harrington	Sheri Young
	Terry Shearer	Craig Jewett
	Mark Bannon	Karen Adams
	Bret McCreary	Angela McGuire
	Tom DeBell	Cristin Ashmankas
	Sille Larsen	Gunner McCain
	Jason Henderson	David Potts
	Ken White	Claude Chevalier

Scheduled meetings:

October 18, 2022	Virtual
November 15, 2022	Hybrid
December, 20, 2022	Virtual

Minutes:

The draft minutes of July 19, 2022 meeting were reviewed and accepted as drafted.

Agenda and Updates:

Scott asked that discussion of a procedure for abandoning shallow and dug wells be added to the agenda.

Bruce said that Tom DeBell, VDH Environmental Health Engineer, will be replacing Anna Gallagher as a Vermont Health Department representative.

Bruce said that corrections will be made to the list of TAC members appointed by the Governor. Some previous members that have retired or resigned were reappointed. The list will be updated and submitted for approval which is required after each election for Governor. Cristin reminded the group that TAC members are eligible for continuing education credits for their work on the TAC.

Currently proposed Changes to the Wastewater System and Potable Water Supply Rules (WW Rules):

Bruce said that he has not had a chance to finish the updates to the WW Rules but has scheduled time this coming Thursday and Friday to complete the work. Bruce will circulate the draft to the TAC at the same time is referred for legal review.

Innovative/Alternative (I/A) Systems:

The Department of Environmental Conservation (DEC) is reviewing a request that the Geomatrix Company's GeoMat™ system be approved as an advanced treatment system producing Filtrate Effluent as defined in the WW Rules. The product is currently approved as a distribution system. The system consists of a non-woven fabric that is wrapped in a hygroscopic membrane installed over a layer of ASTM C33 sand (also approved as mound sand in the WW Rules) at least 6" in depth. Geomatrix allows application of wastewater to the system using gravity flow, dosing, or pressure distribution. Unlike other advanced treatment systems, the GeoMat™ System also serves as the distribution system. The system was tested at the Massachusetts Testing Center with a loading rate of 2 gallons/day/sqft. The system met the NSF Standards 40 requirements. The GeoMat™ has been approved in New Hampshire for general use with a similar separation to seasonal high-water table as would be approved in Vermont. It has also been approved in other states (Massachusetts, Wisconsin, and Colorado) for remedial use generally equivalent to a filtrate system.

Bruce noted that under the WW Rules a method of collecting the treated effluent is required and a small lysimeter pan underneath the system is proposed for this purpose. The system will require pressure distribution per the WW Rules. Cristin said that a service provider may not be needed as the only moving part is the dosing pump.

Steve asked if 6" of sand under the system is sufficient should the mound system requirements be changed to allow for only 6" of sand. Bruce said that his concern is how you

would measure the depth of sand over a plowed layer. If you measure from the bottom of the furrow 6” of sand might only fill the furrow leaving an insufficient thickness of sand for even application of the effluent. Justin asked if the depth to Seasonal High-Water Table (SHWT) is measured from the bottom of the GeoMat™ or the bottom of the 6” of sand and Bruce said from the bottom of the sand. Sheri asked if there is an expected life span for the system and if any venting is required. Bruce said he did not have information about the life span of the system and that venting is not required. David Potts, President of Geomatrix, joined the meeting and said that field testing found atmospheric levels of oxygen in the system without venting and that adding venting would reduce the pressure produced by entry of effluent into the system that could be used to force air into the surrounding soil.

Bruce asked if there was any objection to issuing a separate approval for the GeoMat™ for general use as a filtrate approval pending receipt of an appropriate design manual for filtrate. No objections were raised.

Instantaneous Peak Demand

Instantaneous Peak Demand (IPD) is the flow rate in gallons per minute that the water system must supply. The calculation is based on either the International Plumbing Code analysis of the number and type of plumbing fixtures, or 5 gallons per minute per living unit, or an alternate method approved by the Secretary of The Agency of Natural Resources. The WW Rules require that either the long-term yield of the water source and the pumping capacity meet the IPD or that a storage tank and booster pump system that meets the IPD be added to the water system. The WW Rules waive the requirement for a storage tank, but require that the well pump meet the IPD, when the water system serves a single-family residence, a single-family residence with an attached one bedroom living unit with a total design flow of 560 gallons per day or less, or a non-residential structure with a design flow of 560 gallons per day or less and with an IPD of 15 gallons per minute or less.

TAC members are concerned that the existing WW Rules require well pump replacements that may be unnecessary when adding a one bedroom living unit to an existing single-family residence with total design flow of 560 gallons per day or less. Justin, Steve, Sheri, and Craig all said that they are receiving a large number of requests for the bedroom additions to existing single-family building and noted that many municipalities have made zoning changes to encourage this construction. The concern is that in many cases an existing well pump, that can produce about 7 gallons per minute, must be replaced with a pump that can produce 10 gallons per minute. The cost of this upgrade can exceed \$1,500.

The group identified factors that should be considered as part of updating the IPD requirements:

1. Bruce noted that the calculations for determining the IPD have not been updated to account for low flow plumbing fixtures. The Vermont Plumbing Board should be contacted for their input.
2. Roger said that one consideration is the protection of the occupants of the accessory unit. If this is a rental unit, and there is insufficient water flow to support all the plumbing fixtures, there needs to be a means to ensure the problem is corrected.
3. Justin suggested that there is no one size fits all response, and the requirements should allow for case specific determinations. He also noted that the town of Jericho is now allowing two-bedroom accessory apartments.
4. Scott said there are issues related to high-capacity pumps in low yielding wells. While the system might work for short term IPDs, extended pumping could dewater the well and damage the pump.
5. Steve said that well drillers are concerned about using just casing storage to meet the storage requirements. The extra drilling is expensive and may add to the cost of the well pump.
6. Craig said that there are now smaller storage tank and booster pump systems that can be cost effective in comparison to replacing existing well pumps and they reduce the risk of over pumping the well.
7. Ken said that in some cases a basement storage tank, maybe about 450 gallons in capacity, is an effective solution. Adding an ultraviolet disinfection system can be helpful.
8. Claude said that a first step is to examine the well curve of the pump is relation to the specific well being used. If the pump was sized to pump at the long-term yield at a calculated drawdown depth, it may produce more water when the water level is closer to its normal static depth. If the IPD is brief, an existing pump might meet the requirements.
9. Craig and Steve noted that the IPD is a short time demand which might be part of the solution to the problem.

10. Steve suggested that a short-term study group be formed, and the group agreed. Bruce will send out a request for members of the group.
11. Craig said that any changes to the WW Rules need to be coordinated with other rules that may apply.

The TAC will continue this discussion.

Exempt Replacement Wells

There are two exemptions in the WW Rules, 1-304(15) and (16) that allow for a well to be constructed without obtaining a permit. 1-304(15) allows for a replacement well that serves only one single-family residence on a lot without other buildings, structures, or campgrounds subject to specific conditions. 1-304(16) allows for construction of a supplementary well on a lot with only one single-family residence without other buildings, structures, or campgrounds subject to specific conditions. The specific conditions are different for each of the exemptions. The WW Rules require that a form, prepared by the DEC, be completed and filed on the municipal land records. The form is not filed with the DEC. The exemptions in the WW Rules require that a water quality test be completed with the results with the results sent to the Vermont Department of Health.

Scott said that more outreach to well drillers is needed. The completion reports can now be filed online. Scott said that getting this information into the system is important because it affects how other construction of wells and disposal systems can be done.

Claude asked about non-potable wells, such as for livestock. Cristin replied that these wells are exempt from the WW Rules and are not protected by the WW Rules. Claude and Ken discussed the problem with placing well tags on the casing for the non-potable wells that have casing that terminate below grade. Even if a well tag cannot be attached, it is still important to file the well completion report that the location can appear in the data base and the drilling information is available.

Alternative Water Sources

The TAC briefly discussed whether single-family residences should be able to use a water supply that is not currently approved in the WW Rules. This might include rainwater, surface water, or hand pumped from an exterior well. Craig said that at some level the purpose of regulations is protect the public, even if they may not appreciate the need. Cristin noted that the

WW Rules do not require water quality testing of a surface water supply for a single-family residence. The WW Rules do limit the surface waters from which water may be drawn and do require that a water treatment system be installed that meets requirements for filtration and disinfection.

Abandoning Shallow Wells

Due to time constraints, this topic requested by Scott was not addressed and will be added to the agenda for the next meeting.

**Approved Minutes of the Technical Advisory Committee Meeting
October 18, 2022**

Participation by videoconference

Attendees:	Bruce Douglas	Steve Revell
	Claude Chevalier	Craig Heindel
	Gunner McCain	Sheri Young
	Mark Bannon	Ernie Christianson
	Roger Thompson	Cristin Ashmankas
	Bryan Harrington	Sille Larsen
	Karen Adams	Craig Jewett
	Jen Fleckenstein	Tom DeBell
	Terry Shearer	Bryan Redmond

Scheduled meetings:

November 15, 2022: The meeting will be a combination of in-person meeting at the ANR Annex Building at 190 Junction Road in Berlin and online. An email with the information for connecting online will be sent. The in-person meeting will begin at 1 PM and will be an informal gathering. The formal meeting will begin at 2 PM.

December, 20, 2022 Virtual

Agenda:

Steve asked that the restrictions placed on single-family residences in seasonal use be discussed. Sille noted that Scott Stewart is not present and that the discussion on closing shallow wells might wait until he can participate.

Minutes:

The draft minutes of September 20, 2022 meeting were reviewed and revised to state that Tom DeBell, VDH Environmental Health Engineer, will be replacing Anna Gallagher as a Vermont Health Department representative.

Updates:

Bruce said he has drafted the new revisions to the list of proposed updates to the WW Rules. He will prepare a summary of the changes and circulate them to the Technical Advisory Committee (TAC).

Bruce reported that there has been an increase in permit applications at the Regional Offices. After a period when applications for replacement wastewater systems hovered around 500 per year, the numbers have increased to between 650 and 700. With the passage of the American Recovery Act Plan (ARPA), Vermont now has about \$15,000,000 to help fund replacement water and wastewater system. The Department of Environmental Conservation (DEC) expects an increase of at least 150 additional permit requests for replacement systems. There will be an increase in DEC staff to administer the ARPA funds.

Sillie reported on the DEC receipt of well completion reports. There is some reduction in the number of reports filed during 2020 and 2021. Claude said that the drillers are very busy, so it is not a lack of wells to report. The DEC is moving to online reporting and the DEC will be working with the drillers to get the system up to date. Having the information in the DEC system is important because it is used by Licensed Designers for information on wells near properties they are working on.

Claude noted an issue with figure C-17 in the WW Rules. The figure gives details of a typical driven well in unconsolidated material. The diagram specifies a well screen. Claude said that he asked other well drillers if they were routinely installing the screen and learned that they were not. This presents problems in completing a well installation report which asks if the well as installed complies with the WW Rules. Ernie said that these diagrams are in the Flexible Technical Standards portion of the WW Rules and the DEC can accept an alternative design. Cristin explained this could be covered with an as-built plan that is filed with the DEC Compliance Section who would accept it. If the original approval was for a well drilled into bedrock, the installation report would also need to deal with the isolation distance. If the well met the distance required for a well in consolidated material no other action is needed. If not, the report would need to request a reduction in isolation distance based on hydrogeologic conditions, that sometimes are satisfied if the well is completed in a confined aquifer that prevents contamination from moving towards the well. The TAC suggested that figure C-17 be updated to cover the screen issue and the different isolation distances for confined and unconfined aquifers.

Innovative/Alternative Systems:

The DEC did not have any systems needing TAC review.

Recent Legislative Discussions:

Bruce noted that in the past legislative session a bill was proposed that would deal with low impact water and wastewater systems. The legislation was not discussed during the past session though an ad hoc study committee was formed which met a few times during the year. Sheri was a member of the committee. Also interested were the Rich Earth Institute; Clivus Multrum, Inc.; and the Vermont Department of Forest and Parks (VDFP). The VDFP has about 80 moldering toilet installations. Moldering toilets are structures built above ground directly on the soil. The liquid seeps downward into the soil while the solid materials are allowed to compost. The systems in use by the VDFP have a toilet structure on top of cribbing that can be moved from side to side so that fresh material is deposited into one side while the other side is undergoing composting. An evaluation of the systems determined that the liquid being infiltrated into the naturally occurring soil was being applied at a gallons per square foot rate approximating that of a conventional leachfield. Bruce said there is a lot of interest in the use of moldering toilets at trail huts and other remote locations. Sheri said that the committee will likely reach agreement on the best practices for composting and the use or disposal of the composted material. The group has not made any decisions about how to dispose of the wastewater after the toilet waste is treated.

Bruce learned that there are more complaints about the DEC's overshadowing requirements than any other State program. The current statute requires that a neighboring property owner be notified if any portion of the isolation distance around a water source or wastewater disposal system extends across a property line. Because the notice is sent prior to filing the application with the DEC, the Regional Office staff does not have any site-specific information when a neighbor calls with questions. The Licensed Designer is usually the person contacted by a neighbor with concerns about the impact on their property and can explain the basis of design and that the application complies with the WW Rules. The WW Rules do not allow a neighbor's concerns to affect the issuance of a permit unless the neighbor demonstrates that the isolation distances are not met. The current WW Rules are based on the first in time concept. Craig Heindel and Craig Jewett said that with the passage of a statute declaring that groundwater is held in public trust, as surface water has been treated from the beginning, it is not clear that the first in time position will be sustained in the future. An Environmental Court decision from about six months ago dismissed an appeal of a WW Permit related to the overshadowing requirements. Bruce suggested that maybe Licensed Designers could be asked to design with the minimum over shadowing. Roger said that this issue was extensively discussed by the TAC in the past and it became very complex. The DEC could protect Licensed Designers by creating specific steps they must take, but that leads to complaints that the DEC is not doing enough to protect the neighboring property owner. The question comes down to how much

money must the permit applicant spend to reduce the overshadowing. Sheri said that there are other issues related to public trust concepts that she keeps in mind whenever doing design work.

A time of sale inspection requirement is also under discussion. Craig Heindel recalled that Massachusetts found it difficult to implement. Ernie said that he had worked on the issue and outlined some approaches, but it was not pursued. Craig Jewett said that he had performed time of sale inspections in Massachusetts and that the process had become workable. He strongly supports a time of sale inspection with a focus on whether the system is failed at the time of inspection. A short checklist can be the basis of the inspection. If the client wants, a more complete inspection can be made to help forecast likely problems and the cost of repair. Gunner supported the pass/fail concept, but said it is hard to account for past performance. Ernie noted that a pass/fail approach does not forecast successful operation of the system because the occupancy at the time of inspection might be low compared to the use of the new purchaser. There is also the question of liability. An inexpensive evaluation would limit what a Licensed Designer could say about the system while a more comprehensive evaluation that would allow for a detailed analysis by the Licensed Designer could be quite expensive. Cristin said that most sales that involve a mortgage have some sort of inspection because the bank requires it. Cash sales, where immediate action by the buyer is sometimes required, may not have an inspection. Terry said that he gets calls from Licensed Designers who want to know what they should do. He tells them that there are no rules, so they need to discuss the options with their clients. Roger said that the TAC had done an in-depth analysis of this issue a few years ago and found that it quickly became complex. The TAC did not support a time of sale inspection at that time.

The DEC said they are working on a licensing system for installers and service providers.

Seasonal Definition and its Effect in the WW Rules:

The term seasonal is applied to the use of a single-family residence when the residence is occupied for 180 days or less in each calendar use. This definition takes effect if the single-family residence is converted from seasonal use to year-round use and requires that the technical standards for new water and wastewater systems be followed because it is considered to modify the operational requirements per §1-201(65) of the WW Rules. These requirements were added to the WW Rules because of concerns that some lots with seasonal camps are so limited in wastewater disposal capacity that a conversion to year-round use would result in failed wastewater systems with no possible replacement. Exemption §1-802(a)(2) was added in the 2019 version of the WW Rules that allows for a seasonal conversion, using a wastewater system design that may include variances with the limitation that a holding tank system may not be permitted.

Subcommittee on Peak Instantaneous Demand:

Bruce said that Sheri Young, Craig Jewett, Steve Revell, Justin Willis, Mark Bannon, Jeff Williams, and Sillie Larsen have asked to be on the committee. The committee is open to anyone who would like to participate.

Replacement of Existing Systems that have not Failed:

Craig asked about replacement of existing systems that have not failed when full compliance with the WW Rules is not possible. Cristin and others noted that the variance section explicitly allows for this. Gunner said that he often obtains permits for replacement of non-failed systems without a specific date for the installation. This allows a property owner to know what will be required when their existing system fails.

Clarification of Section §1-1102(b)(2):

Gunner asked if this section could be clarified so that when a person is using the exemption for adding a second water supply, the requirement to not have any overshadowing applies only to the new well, not an existing well.

**Approved Minutes of the Technical Advisory Committee Meeting
November 15, 2022**

Participation by videoconference

Attendees:	Bruce Douglas	Roger Thompson
	Claude Chevalier	Craig Heindel
	Gunner McCain	Cristin Ashmankas
	Justin Willis	Jen Fleckenstein
	Bryan Harrington	Angela McGuire
	Tom DeBell	Scott Stewart
	Denise Johnson-Terk	Steve Revell
	Ernie Christianson	Dick Bachelder

Scheduled meetings:

December 15, 2022 (Note Revised Date)	Virtual
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Agenda:

The agenda was accepted as proposed.

Minutes:

The draft minutes of November 15, 2022 meeting were reviewed. Craig Heindel noted a misspelled name in the list of attendees. Craig also noted that the section discussing the Typical Driven Well Diagram should state that Claude would be checking with the New York well drillers for any reference material they have.

Updates:

Bruce said that the process for updating the Wastewater System and Potable Water Supply Rules (WW Rules) has not advanced since the last Technical Advisory Committee (TAC) meeting because his focus has been on getting new staff hired and working. The Regional Office workload is high and is expected to increase as the new funding for replacement water and wastewater systems becomes available.

Innovative/Alternative Systems:

Cristin said that there are no systems ready for TAC review.

Instantaneous Peak Demand Rules:

A meeting of the TAC subcommittee that will review the current rules and make recommendations has not been scheduled but Bruce will schedule a meeting for December. Bruce has information from the International Association of Plumbing and Mechanical Officials (IAPMO) that he will circulate to the TAC.

Diagram for Typical Driven Well:

Figure C-17, in the WW Rules, was discussed at an earlier meeting and found to be confusing. While the text of the WW Rules allows for variations from the details in Figure C-17, it was decided that the diagram should be revised to make it clear that the variations from the diagram are allowed when justified by the site conditions. Claude explained the concerns of the Licensed Well Drillers who need to decide on construction methods as the well is drilled when there is an opportunity to use a less expensive well finished in unconsolidated material rather than in bedrock. Claude will contact the New York well drillers to see if they have any useful material. The group reviewed the diagram and made suggestions that clarify the requirements. The information can be circulated to the Regional Office staff and to Licensed Designers so that it can be used immediately. The changes will be added to proposed updates to the WW Rules.

Training Grant:

Cristin reported that the Lake Champlain Basin Program has authorized a \$200,000 grant to create a training program for service providers. There are groups of providers for water treatment systems as well as for wastewater treatment systems.

Installer Licensing:

Gunner asked if there will be licensing requirements for installers. Bruce said that legislation was passed and signed by the Governor that requires installers to have insurance if they are doing a project that costs \$10,000 or more. Bruce will send a link to the legislation.

Seasonal Use Requirements:

This topic was continued from earlier meetings. Steve asked if there is still any need to keep the language. The existing WW Rules define seasonal use as less than 180 days of occupancy in a calendar year. The WW Rules then define a change in use from less than 180 days in a calendar year to 180 days or more, as a change in operational requirements. This language is in the WW Rules to ensure that an existing lot with an existing seasonal use, single family residence, that may have limited water and wastewater capacity, is not converted to year-round use without determining that the increased use will not create a health hazard. When the seasonal use requirements were first included in an earlier set of WW Rules, the conversion could not be approved unless fully complying water and wastewater systems could be and were installed. The current version of the WW Rules allows for the use of variances to design replacement water and wastewater systems, except that the replacement wastewater system cannot be a holding tank system.

Steve, and other designers, note that in some cases the building and its water and wastewater systems were suitable for year-round use at the time of construction and would likely function without meeting the definition of a failed system, even though they do not meet current standards. While the use of the variance process allows for the conversion to year-round use for a lot that does not meet current standards, it still requires construction of the most complying systems possible. In some cases, this is an unnecessary expense that does not result in significant health or environmental protection. Cristin noted that, in some cases the permit does not require immediate construction, and perhaps this approach could be applied to seasonal conversions.

While there are situations where the existing water and wastewater systems can support year-round use without alterations, there are also lots with very substandard systems that will not support year-round use. A compromise might be to require a site evaluation and a permit with designed water and wastewater systems but not require the installation of the systems until the systems meet the definition of failed systems. Even if the systems are not built, having a design in place helps protect the areas that will be needed in the future.

Municipal Delegation:

The WW Rules allow a municipality to be delegated to administer the WW Rules. Colchester, which has administered the WW Rules for many years, has asked to end their delegation. Bruce will be working with them on the process of transferring records to ensure continuity. This will result in about 100 additional permit requests per year for the Essex Regional Office. Charlotte will be the only municipality with delegation.

Supplemental Well Requirements:

Gunner noted that §1-1102-(b)(2) states that a building shall be served by no more than one potable water source unless none of the water sources presumptive isolation zones extend onto neighboring properties. Exemption §1-304(16)(D), dealing with supplemental wells, only requires that the isolation zone for the supplemental well not extend onto neighboring properties. The TAC agreed that §1-1102-(b)(2) should be revised to match the exemption.

Site Visits:

Justin noted that Licensed Designers are concerned about lots they have evaluated and found not to comply with the WW Rules that are later permitted for construction. There are situations where the site conditions have been favorably altered, usually by the addition of drainage. In some cases, another area that could not be evaluated during the original visit becomes available. It would, however, be good if there was a system that ensured that the Regional Office staff was aware of the original assessment because some lots have been permitted that do not appear to comply. When a system is seen to have springtime surface water at the toe of the construction compliance is not likely.

In most cases the Regional Office staff is unaware of the earlier testing and if the application did not include a site visit as part of the review process, they can only rely on the information submitted. Even when a site visit was made during the original assessment, if the application is not filed for several years after that, it is difficult to associate the old information with the later application. The TAC believes that a site visit is the best chance at ensuring compliance and supports making site visits a priority. Bruce said he agrees and that he has encouraged the staff to make site visits.

**Draft Minutes of the Technical Advisory Committee Meeting
December 15, 2022**

Participation by videoconference

Attendees:	Cristin Ashmankas	Denise Johnson-Terk
	Mark Bannon	Justin Willis
	Craig Heindel	Roger Thompson
	Bruce Douglas	Bryan Harrington
	Tom DeBell	Gunner McCain
	Craig Jewett	Jeff Williams
	Sheri Young	Scott Stewart
	Terry Shearer	Sille Larsen
	Claude Chevalier	Angela McGuire
	Steve Revell	Eric Deratzian
	Achouak Arfaoui	

Scheduled meetings:

There are no scheduled meetings.

Agenda:

The agenda was accepted as proposed with an addition by Steve to discuss composting toilet issues.

Minutes:

The draft minutes of November 15, 2022 meeting were reviewed. Craig Heindel noted a misspelled name in the list of attendees. Craig also noted that the section discussing the Typical Driven Well Diagram should say that Claude would be checking with the New York well drillers for any reference material they have. Minutes were accepted as amended.

Wastewater System and Potable Water Supply Rules (WW Rules) revisions:

Bruce said that the attorney who had been reviewing the proposed revisions is moving to another position. He will get the proposed changes to the attorney so they can be reviewed prior

to the move to the new position. Bruce said that most of the changes have already had a review so the final screening should proceed quickly.

Mark asked if an appendix could be added that would document when significant changes were made in the past. He said that it is sometimes important to know if a project constructed in the past complied with the WW Rules at that time, even if not in compliance with the current WW Rules. Some other states have this feature and Bruce will see if it is practical to add an appendix at this time.

Innovative/Alternative Systems:

Steve discussed an article about composting toilets that recently appeared in the Seven Days newspaper. Steve worked with the property owner and there is a Department of Environmental Conservation (DEC) permit for a composting toilet and a 75% sized mound system for the graywater. Steve said that the toilet in use is not what DEC would consider to be a composting toilet because it is a bucket with periodic additions of sawdust or similar material that is then hand carried to a series of wooden bins. The bins are located on a pad of mound sand to protect the groundwater. The decomposition is mesophilic for the most part. The permit requires covered disposal in an approved location when the bins are emptied. Cristin noted that the WW Rules do not provide any definition or specifications for a composting toilet other than that a 25% reduction in wastewater design flow is allowed and that the ultimate disposal site must meet certain site and soil requirements if the disposal is onsite. This makes it hard for users and regulators to agree on what is required. Terry said that he and the rest of the Regional Office staff spend a lot of time working with people interested in alternative water and wastewater systems, in part because there is no clear definition of what the requirements are for a composting toilet.

There was a bill introduced in the Vermont House in the 2021/2022 Legislative sessions (H-70) to create a study committee to look at alternative water and wastewater systems. While there was no action on H70, an informal study committee was formed, and the Legislature might make it official during the coming session. Sheri has participated in many of the meetings and explained some of the concerns of the participants which include the right to live as you choose, the cost of systems that comply with the WW Rules, and that some lots cannot be developed under the WW Rules. Bruce and Cristin also attended several of the meetings but have been disinvited for the immediate future. Cristin said that there are a lot of people who are interested using systems not currently allowed in the WW Rules.

Craig Heindel noted that the Technical Advisory Committee (TAC) had reviewed this topic in the past and had come down on the side of public health. Craig Jewett added that in

some cases, regulation is needed to protect people even when they don't agree with the requirements. The TAC is concerned about this topic and suggests that a document or presentation be prepared that explains the issues that should be considered if legislators want to discuss the options. The TAC also supports adding a definition of what is needed to be classified as a composting toilet. Sheri suggested having a separate discussion about whether to change the final disposal requirements. Terry said that somewhere in the discussion it should be mentioned that the process starts with fecal matter and that how it is treated and disposed of is a health question.

Installer and Service Provider Training Program:

Cristin said she is working on a request for proposal (RFP) for a \$160,000 grant that will be used to provide training to installers and service providers.

Instantaneous Peak Demand (IPD):

The TAC created a subcommittee to review the current information on how to calculate the IPD. The current WW Rules allow the calculation to be made using the Vermont Plumbing Rules or based on 5 gallons per minute (GPM) per living unit, or another method approved by the Secretary of the Agency of Natural Resources. Licensed Designers have noted that adding a one-bedroom accessory unit to an existing single-family residence raises the IPD from 5 GPM to 10 GPM. Using the Vermont Plumbing Code can result in a larger IPD. This jump in IPD often requires at least a well pump upgrade and in many cases the cost is not justified. The plumbing code referenced in the Vermont Plumbing Rules is quite old and may be outdated. The subcommittee will review updated codes to learn if the changes in plumbing fixtures has reduced the IPD. Bruce said that G.J. Garrow, Chief Plumbing and Heating Inspector, will work with the subcommittee. Bruce will quickly schedule at least two meetings.

Justin said that an associated issue is when does a one-bedroom accessory unit meet the definition of being attached. Does the passage from one unit to the other have to be conditioned space, or is an enclosed space or an open breezeway sufficient? DEC should issue a clear statement or do a WW Rule clarification so that the staff and designers know what is required.

Well Diagram for Completion in Unconsolidated Materials:

The TAC continued a discussion of the requirements for a well completed in unconsolidated material. The diagram in the current WW Rules includes a well screen even though most wells do not need a screen to work properly. The TAC reviewed a revised diagram provided by Claude without a well screen and agreed that it is an improvement over the one in

the current WW Rules. Craig Heindel suggested removing the reference to a bedrock layer to prevent a user from thinking the well casing must end in the proximity of bedrock.

The group then turned to a discussion of how to deal with a situation where the permit for the site is based on a well completed in bedrock, but while drilling the well enough water is found in the unconsolidated material. If the well location meets the isolation distance requirements for wells in unconsolidated material, the change could be covered in the completion inspection report. If the larger isolation distances for wells in unconsolidated materials extends onto, or further onto neighboring land, the notification process is triggered.

If the location of the well does not meet the isolation distances in the WW Rules for wells in unconsolidated material, the isolation distance can be reduced when a hydrogeologic analysis finds that the site-specific conditions protect the well from contamination is approved by the DEC. The most common situation is when there is a sufficiently wide and thick layer of slowly permeable material above the layer in which the well is completed. This layer is often identified as a confining layer. If the vertical travel time for water to move down through the confining layer exceeds two years, the well is considered to be protected. Alternatively, when the water level in the well, under pumping conditions, is above the confining layer the well is usually properly protected. In some cases, the well driller's observation on the type and thickness of material penetrated is sufficient for a decision. In other cases, more information, including review of logs for nearby wells, pump testing, and excavations is needed. The group briefly discussed whether all the requirements could be shown on the well diagram but concluded that more than a diagram is needed.

Claude discussed his experience over many years drilling wells in locations where standard isolation distances cannot be met. These wells are for replacement of failed water supplies and in some situations the isolation distance is reduced to a fraction of the standard isolation distance. He reported that many years of water quality testing has not found any contamination and if there are concerns, a disinfection system can be added. The group discussed this information and noted that bacterial testing, while important, did not prove that the well is protected. Viruses and other contaminants require added testing procedures and may travel further in the aquifer than bacteria. Craig Jewett reported that he is finding widespread perfluorooctanesulfonic acid (PFOS) contamination which is emerging as a major threat to water systems. In addition to needing to test for a range of contaminants, a single test conducted at or soon after the time of well construction does not ensure that the well will remain safe. Depending on the site conditions and the rate of water withdrawal it may take a long time before the contamination appears in the well. Cristin said that depending on water treatment systems and ongoing testing is expensive. The group believes that there is a greater potential for well contamination when standard isolation distances are not met and that when considering a

reduction in isolation distances based on site conditions the decision needs to include the Licensed Designer and the DEC.

Seasonal Use:

Bruce asked if Steve's question from an earlier meeting on whether the definition of seasonal use should be retained was resolved. Steve said the earlier discussion had resolved most of the issues and it was well described in the minutes of the November meeting.

Annual Report:

Bruce said he planned to have the report completed by January 15th. Roger will do the minutes of this meeting quickly and begin drafting the report. Bruce and his staff will gather the information on permit administration.

TAC Appointments:

Bruce said that he needs to send a list of recommended appointments to the Governor's Office. This is required after each election. Bruce said that the legislation that created the TAC requires at least one member from a number of groups such as engineers, well drillers, town officials, and others interested in the WW Rules. The existing group covers most of the requirements, though Bruce is searching for a town official. Cristin suggested adding a place for installers and service providers which the group supports. The group noted that any non-member who wants to attend meetings and share information has been welcomed. Members are satisfied with the current makeup of the group. Bruce will contact existing members and ask if they want to be reappointed. Scott informed the group that he will retire at the end of 2022 and that a replacement should be named.

Other Issues:

Sheri asked about creating a minor permit process for reconstruction of mound systems with existing permits that have failed. Many of the failures occur at the top of the mound at the interface between the mound fill and the leachfield. These failures are easily resolved by removing the distribution system and a thin layer the mound fill which are then replaced in accord with the original permit. Roger asked if this could be handled by expanding the minor repair section which would eliminate the need for a permit entirely. Cristin said that the updated electronic application process would eventually include a minor permit section that might be included in the installation report process.

Sheri also asked if the Vermont Health Department could create a single test kit that would include everything the WW Rules require for each newly constructed well. She noted that it can require ordering up to three different test kits to cover all the requirements. Tom said that they can check into this.

Appendix D

List of Proposed Changes to the 2019 Wastewater System and Potable Water Supply Rules Proposed by TAC in 2022 for Consideration

The following table includes feedback from TAC regarding necessary changes to the November 2020 Draft Revisions to the April 2019 Wastewater System and Potable Water Supply Rules. Based on this feedback and the DEC’s follow up listed, the DEC has decided to proceed with the November 2020 Rule revisions that can move to the interagency committee on Administrative Rules immediately.

Rule Changes Recommended or Considered by the TAC in 2021^A

Rule Section	Recommendation	DEC’s Follow-up
Page 2 – Regional Office Map	Move the tip of the arrow pointing to location of the Montpelier Office from Barre to Montpelier	Typographical Error needs to be changed
§1-301(g)(6)	Add an exemption for installing a composting toilet in an existing single-family residence	This already is included in the 2020 draft rules rule (new section 1-301(g)(6))
1-305(b)	Easement for encroaching on a property line setback: Understanding that this easement configuration is routinely permitted by the state, perhaps we should modify 1-305(b) to include wastewater systems and potable water supplies that will be located less than the required isolation distance to a property line. This should also be noted in Table 9-5.	This would be helpful but not essential because current setbacks can be reduced per footnote in table 9-5.
§1-304(9)	Boundary Line Adjustment - Determination of compliance with subsection (iv) will be made by a Licensed Designer	Preferable but not essential, should have input from licensed designers.
§ 1-903 (b)	Remove requirement that all IA systems are preceded by septic tanks	Already addressed in § 1-903 (b) that allows a system without a septic tank if approved by the Secretary.
§ 1-928	Holding tank- reduce the 14-day capacity requirement	Cannot change in rules because it is in statue
1-1002(g)(2)(A)	General Requirements for Sanitary Sewer Service Lines Change language in current rules that requires a minimum depth of burial 4’ depth of burial to reflect requirement in 2007 Rules, which	A shallower depth of burial is allowed under current Rules under: Section 1-1002(g)(2)(C).

Rule Section	Recommendation	DEC's Follow-up
	where not as specific with a minimum depth of burial.	
§ 1-1009(b)	Forcemain Leakage Testing The standards for doing the testing need to be the same in the WW Rules and the IDR. It may be appropriate to reduce or eliminate the testing for some small systems that serve only a single landowner because of the expense of the testing outweighs any benefits.	Forcemain leakage testing discrepancy in section 1-1009(b)(2)(C) can be addressed by a request for an alternative technical standard per section 1-1001(a). An analysis of cost, benefits, and risk would be required prior to reducing or eliminating forcemain leakage testing for small systems.
Appendix C	Move the figures in Appendix C (Typical Details and Examples) back into the respective sections of the rule so the figures and text are together for ease of use as in past rules.	Significant level of effort to insert figures into the rules, that is not warranted at this time.
Figure C-17	Revise Detail of Typical Driven Well drawing to reflect current practice.	Can be addressed by section 1-1201 Request for Alternative Technical Standard

^A Color coding key: Green = already in 2020 draft rules, or only a typographical change; Blue: Already can be done in current (2019) rules; Pale Peach – will be considered in more comprehensive rule change; Rust Orange – regulatory requirement is in current statute and cannot be changed.