

Approved Minutes of the Technical Advisory Committee Meeting  
October 15, 2013

**Attendees:** Roger Thompson                      Chris Thompson  
Mary Clark    Gunner McCain  
Scott Stewart    Mark Bannon  
Peter Boemig    Justin Willis  
Ken White     Claude Chevalier  
Kim Greenwood                                      Anne Whiteley  
Rodney Pingree                                       Gail Center  
Ernie Christianson                                   Jeff Williams  
Chris Russo

**Scheduled meetings:**

November 12, 2013    1-4 PM                      Winooski Con. Rm., National Life – Montpelier  
December 10, 2013    1-4 PM                      Winooski Con. Rm., National Life – Montpelier

**Agenda:**

Accepted

**Minutes:**

Kim asked that the minutes of the September 10, 2013 meeting note that she had repeated her request that the public trust issues be specifically addressed in the UIC Rule. Anne asked to have included her comment that there had not been a response to her request that VNRC offer some language giving their suggestions for addressing public trust issues in the UIC Rules.

**Innovative/Alternative Systems Update:**

Mary reviewed a handout of systems under consideration.

Approvals have been issued for use of the larger Orenco AdvanTex AX-100 and AX-max series. The AX-max is a trailer with above or below grade installations.

The Aquapoint – Bioclere renewal has been issued. The system is aimed at larger users such as commercial and clustered residential buildings.

The contact information for the Ecological Tanks Aqua-Aire and Aqua-Safe systems has been updated.

The Infiltrator Systems IM-540 septic/pump tank has been added to the list of approved tanks.

There are several systems under review –

Premier Tech has requested approval of a poly tank for use with their EcoFlo Biofilter. A review letter has been sent asking for information related to tank wall thickness and installations with high groundwater levels. Mary is also contacting other states to learn their experience with this tank.

Oakson Perc-Rite has requested approval for use of a disc type filtration system, with a backflush operation, that would discharge to a drip dispersal system. The current rules require that the effluent discharging to a drip dispersal system meet filtrate standards of 30/30 BOD and TSS. Justin, Gunner, and Steve Revell are on the review committee working with Mary. There are a number of technical and administrative issues to consider. Mary will be contacting other states, some of which approve this system with drip dispersal. Mark agreed to join the committee to represent the Professional Engineers.

Eco-Solutions is requesting approval of their Moving Bed Biological Reactor and a constructed wetlands system for use in a slaughter house system. The wastewater is expected to be a difficult to treat waste with BOD levels of 3,000 mg/l.

A landowner has requested approval for use of a disposal system for graywater along with a composting toilet. The proposal is based on references for low tech graywater systems in states with arid climates. This is under consideration but there are concerns that a shallow system may not function year-round in Vermont's climate. Mark asked about the 25% limit on reduction in flow for use of a composting toilet. This limit applies to residential use and there could be some non-residential systems where a larger reduction would be allowed.

Eljen has requested approval of their Mantis System. The system consists of geotextile wrapped modules spaced along a distribution pipe and is bedded in specified sand. An internal review has started and Mary will ask for TAC members to be on a review committee for this technology.

Reviews will begin soon on the Presby Simple Septic, Amphidrome, Norwesco low profile poly tanks, and the Norweco Hydro-Kinetic Model 600 system.

A meeting of service providers is scheduled for December 4<sup>th</sup> at 9 AM. About a dozen people who have been approved by manufacturers to install and maintain approved I/A systems in Vermont have been invited. Roger asked Ernie to circulate the list of those invited to the TAC in case there are others who should be invited.

Mark raised a question of whether a designer should specify a product that they also sell. This could be a conflict of interest. Mark said the Vermont Professional Engineer's Code prohibits this.

Mary said that she is still developing a training program for installers and that the loan program for replacement of failed systems is close to being operational.

Mary said she would like the TAC to look at alternative treatment systems that do not produce filtrate quality effluent for remedial use. These systems are offered by companies as options in lieu of replacing a failed system or as an addition to prevent failure of an existing system. Roger said this issue was discussed in the past, particularly with the Regional Office Staff. There are questions related to whether or not there should be basic requirements that must be met prior to adding a treatment system such as isolation to water supplies, minimum depths to seasonal high water table, and/or minimum size of leachfields relative to the size required under the rules. At the time it was decided that rather than develop standards it would be handled on a case by case basis using the variance process under the rules. This would be a good topic for TAC to look at again.

Mary said that would also like to schedule with the TAC to talk about the amount of monitoring that should be required for pilot and experimental systems.

### **Water Supply Rules:**

Ernie suggested starting our review with the document listing issues to be decided which he had emailed to the TAC prior to the meeting.

The first issue relates to the grouting of drilled wells and when grouting is needed. Ken and Claude said that based on their work, including camera inspections of well casings, that a basic drive shoe seems to be working OK when the casing is seated into bedrock. Gail said that the question of whether or not all wells should be grouted had been discussed in prior meetings and it was a consensus that not all wells need to be grouted.

The reduction of isolation distances between water and wastewater systems was also discussed. The draft rules propose to allow for a reduction when there is a continuous impeding soil layer, at least 8' thick, that separates the zone where wastewater is discharged from the aquifer where water is withdrawn. Jeff said that in some cases this layer exists but it is 100' below grade. There was discussion about how it could be determined that this layer is continuous and protective of the drinking water. Jeff said that there is well information and well driller knowledge that can be used to make this decision. Ernie expressed some concern about this approach except for cases where there are a lot of wells with uniform results, such as might be found in some Addison County clay soil areas. Mark asked if soil texture can be determined with ordinary well drilling techniques. Jeff said that a well driller can collect a sample of the well discharge and make this determination. Other members are not convinced of this because the materials could be sorted into finer and coarser material while being flushed from the well.

Anne asked if grouting by itself, without any impeding layer, justifies a reduction in isolation distance. Rodney and Roger said no. There are situations where artesian conditions exist within the bedrock where grouting might justify a reduction in isolation distance.

Well interference was also discussed. The traditional method of pumping one well while monitoring the water level in a second well cannot be used to demonstrate compliance with the rules in a situation where a well has been permitted but not yet drilled and a second well is proposed. Ernie suggested that if the second well was drilled and pump testing found enough water in that well to support both projects it would show that the first well would not be adversely affected. Ernie's thinking is that if the two wells are hydraulically connected by an aquifer, pump testing the second well proves the aquifer has sufficient water to support both projects. It was decided to have a subcommittee of Jeff, Claude, Ken, Scott, Craig Heindel, Steve Revell, and Ernie look into this question.

Overflowing wells were also discussed. There are two competing issues with concerns about wastefully depleting the aquifer and the cost associated with drilling all wells so that they can be closed in if they overflow. The TAC has discussed this issue at previous meetings and a majority of the group supported an approach of allowing wells to overflow at rates of 10 GPM or less. Rodney noted that Chris Thompson, Director of the Drinking Water and Groundwater Protection Division, had determined that the Department of Environmental Conservation (DEC) decision was to prohibit all overflowing wells. Chris said that this is still under discussion by the DEC management. Claude said that about 10% of wells overflow at least part of the time. Jeff said that regardless of the final decision the Department should have guidance on overflowing wells.

Table 6-A-16 of priorities for well isolation was discussed. Roger asked that language be added to make it clear the list is for guidance because the relative value of items on the list can vary from one location to another. The group also recommends reversing the list to have the items with the most risk at the beginning of the list.

Ernie asked about the proper description of well casing. Should it be 17 lb. casing or schedule 30 casing? Claude said to drop the poundage description and rely on the schedule specification.

Ernie asked if there is a difference between a sanitary well seal and a watertight seal. There are differences and the watertight seal is the term to use.

Ernie asked if it is appropriate to use bentonite when doing concentric drilling. The well drillers said it is. The bentonite can be placed around the outside of the casing and it will be pulled down the well bore as the casing is advanced.

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**Executive Committee:** Steve Revell, Ernest Christianson, Roger Thompson

Alternates – Chris Thompson, Spencer Harris, Claude Chevalier, Craig Heindel

**Subcommittees:**

**Hydrogeology**

Craig Heindel, Bill Zabiloski, Mark Bannon, Scott Stewart, Steve Revell, Mary Clark, Roger Thompson, Peter Boemig, Ernie Christianson, Spencer Harris

**UIC Rules**

Craig Heindel, Steve Revell, Roger Thompson, Ernie Christianson, Scott Stewart, Rodney Pingree, Kim Greenwood, Cindy Parks, John Beauchamp, Gail Center

**Wastewater Strength**

Mary Clark, Cindy Parks, Peter Boemig, Bill Zabiloski, Roger Thompson, John Akielaszek,

**Bottomless Sand Filters**

Peter Boemig, Mark Bannon, Cindy Parks, Mary Clark, Denise Johnson-Terk, Craig Heindel, Ernie Christianson

**Seasonal High Water Table Monitoring**

Craig Heindel, Steve Revell, Roger Thompson, Ernie Christianson, Bill Zabiloski, Dan Wilcox, Mary Clark