

**ALTERNATIVE/EXPERIMENTAL WASTEWATER TREATMENT TECHNOLOGIES**  
**TECHNICAL REVIEW COMMITTEE (TRC)**

**The meeting was held at the South Kingstown Town Hall**

**February 20, 2009**

Approved

*Present:* Ken Anderson, Dave Burnham, Russ Chateaufneuf, Joe Frisella, George Loomis, Susan Licardi and Dennis Vinhateiro

*Absent:* Noel Berg and Tim Stasiunas

*Others Present:* Deb Knauss (DEM)

Call to Order: 8:50 AM

Materials Distributed:

- Draft Agenda for this meeting
- Draft Minutes of 11/7/08 meeting
- Application summary Geoflow
- Draft Approval for Aquaworx Remediator with Deb Knauss's comments

**Minutes of November 7, 2008**

Necessary edits noted below:

Page 1 beneath "Additional items for the Draft Agenda" edit as follows: "Russ asked if anyone desired for any additions..."

Page 2: "Letters ~~form~~ from Boards of Professional Registration to DEM Director"

Page 5: Approximately 20 percent of the way to the bottom of the section "Discussion": edit as follows: "...we have taken ~~their~~ their word for it."

Edit section title on Page 2 as follows: "Letters ~~form~~ from Boards of Professional Registration to DEM Director"

**Motion:** George made a motion to accept the minutes with the noted corrections.

**Second:** Susan seconded the motion.

**Discussion:** There was no discussion.

**Vote:** All who were present at the November 7 meeting voted in favor of the motion.

**Clarification of Length of Time Installers Have Been Preparing System Design Plans**

With regard to the section of the November 7, 2008 minutes discussing A/E plan submission by CI-I designers on page 2 in the section "Letters form (sic) Boards of Professional Registration to DEM Director", Dave Burnham wanted to incorporate in the minutes of today's meeting (2/20/09), the following clarification: Installers have been preparing system designs much longer than the ten years under designer licensing, as cited.

**DEM Updates**

**Specially Qualified Subset of Class I Design Authority**

Russ reminded the group that a motion had been approved at the last meeting to proceed with the proposal addressing the eligibility conditions for Class I designers to be authorized for specific A/E design authority, incorporating updates as noted. Russ brought this updated proposal to DEM's Director who has received the letters of opposition from DEM's sister agency, the board of professional registration for engineers and land surveyors, stating that the proposed action is in violation of state laws. DEM may ask the legislature to act first, as there appears to be a statutory conflict; if that can be remedied, DEM will go forward. The bill was re-introduced in both houses. At a House hearing, testimony was given by among others, Dave Burnham, Dick Pastore and Russ. DEM's official position is not in support of the bill as written. As written, it would create a new class of designer, which is well beyond what DEM is prepared to support; an additional license class would necessitate development and administration of an additional licensing exam and all associated activities. DEM recommended amendments to the Sub A, incorporating the proposal developed by the TRC. The Sub A has not been submitted as far as Russ knows and there has been no meeting before the Senate as of this date.

Dave noted that S0298 (which he just received February 19th) is entirely different than last year's bill. Russ noted that it is close to what DEM recommended. Russ read the qualifications paragraph, new to this bill. DEM wanted it to be clear in the statute that DEM could add A/E authority for an existing class of designer. The bill also provides for construction inspection of systems to be performed by a designer other than the designer of record. Currently, construction inspection of systems must be performed by the designer of record; the only way around this is a new construction permit design submission made by a new designer, or a change of designer, but this option has very restrictive conditions. There have been cases where designers have taken advantage of the current requirement and DEM wants for applicants to have the flexibility to have the construction inspection performed by the designer of their choice.

### **Denite Requirement**

Russ reported that there is still concern over the denite requirement in the salt pond area and considerable interest in Charlestown, where the Town Council and the Wastewater Management District called for a two-year moratorium on the denite requirement for repairs including cesspool replacement. There are legislative letters of support for these town-requested actions. The town's justification is perception that the Rule has had a chilling effect on repairs and cesspool replacement and they need more time to complete the inspections to identify the locations of cesspools.

DEM suggested to the Town that they place a moratorium on their cesspool phase out, providing more opportunity to obtain funding to assist residents with denite-associated costs and additional time for prices to come down. There was agreement that with consideration of the state of the economy, this is not the best time to force people to make such a financial commitment. In two years the issue could be re-visited; if prices did not come down and the economy has not improved, then other options could be considered at that time.

It was asked how many of the homes in question may be second homes owned by people whose primary residence is out of state; no one had an answer to this question. There was discussion concerning the terms for disbursement of money to the towns by the Clean Water Finance Agency (CWFA): if money is encumbered, but not spent, the CWFA can not provide additional funds to the town, until the money has actually been disbursed to the applicant. George had heard that some towns were not able to get enough money to cover all the residents' requests for funding, but Russ said that the CWFA had told him that there was enough money to accommodate all requests; DEM will look into this issue.

Joe reported that in Charlestown 17 or more people had sought Community Septic System Loan Program (CSSLP) funding, but that the \$300,000 available may only accommodate 12 and that if the applicant does not have a DEM approved permit, they are not eligible for the funding and their application is dismissed. He related that Charlestown can not request another \$300,000 until the entire balance of the \$300,000 previously disbursed to the Town by the CWFA is actually spent, as opposed to encumbered for future use by a resident. Susan explained that the town has to close on a certain percent of the \$300,000 loaned before the next \$300,000 disbursement to a town may be made by CWFA.

### **Holding Tank Policy**

Russ reported that DEM is developing a policy that would allow use of holding tanks for intermittently occupied residences and businesses. The policy includes a design flow restriction among others. Currently the Rules allow holding tanks only for repairs. The proposed policy requires telemetry, and a single entity providing design, installation, and O&M including pumping services, thus making it easier for DEM to monitor these tanks for compliance with the policy. DEM expects opposition in South Kingstown and from the wastewater treatment facilities due to concern about increased septage loading. It is not expected that holding tanks would be used very often, because the conditions are very restrictive and include a deed restriction on occupancy. Use would be restricted to owner-occupied residences and businesses and churches.

Joe stated that the Septic Snooper portion of his business provides telemetry and inspection services and that to restrict these elements of the holding tank policy to a single entity that can also pump is something of which he does not approve.

George noted that once the holding tanks are installed, an O&M entity could provide O&M service for them even if they do not have a pumper truck. In towns using RIWIS, system data can be reported to the RIWIS system using the telemetry the policy requires. He does not support holding tanks as a general solution, but there have been locations in South Kingstown where they are the only solution because systems get washed out to sea with storms. If there is room on a property for a system, then installation of a system should be required. With holding tanks, there is risk of tampering by resourceful homeowners. Holding tanks impose a burden on sensible wastewater management programs when a pumper can not unload a truck and therefore is not able to perform scheduled pumping of systems.

Ken noted an advantage of this policy in the coastal areas, where seasonally used denite systems' start-up issues prevent these systems from meeting their required nitrogen removal performance during their short-term use, is that all the nitrogen generated at properties served by holding tanks would be prevented from entering the watershed.

Susan asked if DEM has received applications for installation of holding tanks; Russ replied that they have, but that they have been returned because a system could be accommodated at the subject properties.

Russ stated that among DEM staff there has been objection to the single-entity provision of the proposed policy and he expects that this provision may not survive. In reply to concern about use of the proposed policy being a popular choice, Russ stated that if it is found to be difficult to police or if it is determined that the public health is at risk, the policy can be changed. Susan, Dave and George all agreed that the current Rule seems to make sense because it allows holding tanks for difficult situations. Concern was expressed regarding difficulty rescinding the policy; there would likely be objection by people whose neighbors had already benefitted from it. Ken again noted the irrefutable benefit of removing nitrogen from the salt ponds.

Joe noted that any derailment of the denite requirement is unfair to the people who have already complied with it and paid for denite systems. Russ stated that this is why DEM prefers a moratorium rather than a waiver. George stated that the denite requirement is based on science and the worst thing to do is practice inconsistency in its implementation; the best thing to do is to try to focus political interest on getting money to people as grants or loans, possibly reducing the interest rate to 1% and relieve some of the financial burden from affected property owners, but maintain the science-based policy. George agreed that the best solution is to change the deadline for cesspool removal.

### **Geoflow**

There was discussion of effluent quality requirement and the group agreed that **advanced treatment to at least 30/30 BOD/TSS** is the minimum effluent quality they would consider for dispersal by Geoflow.

It was also agreed to require **flushing back to the septic tank**.

**Concern with freezing** was expressed by Joe. Deb reported that none of the regulators with whom she spoke are having problems with freezing. MA had some freezing issues with early installations, but modifications to the installations were made (that have since been incorporated into the design and installation guidelines in the application) and freezing is no longer an issue. The design and installation manual provides specific instructions for installation in cold climates to prevent freezing.

The group discussed the risk of piercing the line with croquet wickets, and other yard installations. Designers would have to address this in a note on the plan. The O&M agreement should also specify this risk, so that even if the property is transferred the information would be conveyed to the new homeowner to not make such installations in areas where the drip line is installed.

To establish appropriate **loading rates for Geoflow** DEM would have to reconcile loading rates and sizing with the OWTS Rules' soil categories. Loading rates will have to appropriately benefit time-dosed systems, as with PSNDs. It was emphasized by Dave and George that loading rates need to be associated with a pre-treatment system's robustness and ability to reliably produce 30/30 TSS/BOD effluent, citing for example the AX's ability to generally hit single-digit concentrations of these constituents. George recommended using Table 2 in the Design, Installation and Maintenance Guidelines included in the application and match with RI's soil characteristics to establish RI loading rates and that when we develop a table of loading rates, he would ask Randy Miles, his counterpart at University of Missouri to review it.

For the sake of comparison the group considered the following example: design flow of 345 gpd and a sandy loam using "Soil Class II" (a sandy loam) from Table 1 in the manual included with the application, which is specified to load at 1 g/sf/d, therefore 350 sf of lawn would be required for a drip line field (10 feet by 35 feet). Emitters are spaced every 24-inches and lines are spaced two-feet apart (4 sf of soil/emitter). A BSF designed for 345 gpd using the RI Category 1 loading rate of 3.5 g/sf/d would be 98.6 sf or 10 ft X 10 ft. Geoflow solves the aesthetic issue and also relieves water demand for summer lawn maintenance.

The group agreed that an **approval should require that O&M be offered for the whole treatment train**, as is required in other A/E approvals.

**Vertical separation** to restrictive layers needs to be considered. RI needs to establish the appropriate separation distance between the emitter and the seasonal high groundwater table for Geoflow. Perhaps 3-feet, with 4-feet

required in a critical resource area. The soil area affected by the emitters must be evaluated with consideration of the PSND design parameters for different soils. A suggestion was made to consider 2-foot separation; George recalled that (2000 or 2002) research by Jim Converse and a graduate student evaluating the treatment performance of drip dispersal supports this reduction. Whatever is decided, it was noted that there are drip line vendors that use septic tank effluent and RI should expect them to ask if they could be provided the same reduction in separation distance. Jim Converse and Chuck Johnson (from MA) looked at PSND performance and saw good pathogen reduction beneath these fields.

The issue of **reducing PSND trench spacing to 2-1/2 feet** was revisited, it was specified, however that in basal till soils the current spacing should be maintained, or reduce the spacing and decrease the loading rate. George stated that there needs to be consistency with drip and PSNDs.

Need to determine **maximum grade** on which Geoflow would be allowed: consider 30%. Also set an **upper limit for FOG concentration**: consider residential upper limit of 25 mg/L; anything higher suggests other than residential use.

Dave noted that a **comprehensive equipment list** with responsible party needs to be provided, as headworks boxes and filters are not listed.

**Automatic flushing** of the field would be required.

Deb was asked to compile and send to the TRC the questions from this meeting. At the next meeting we will seek resolution of today's questions.

Russ called everyone's attention to the draft approval for Aquaworx Remediator and comments Deb provided; he stated that if there were no comments from the group that the draft approval would be issued. At Deb's request the proper application under which to submit for use of such technologies in an existing, but not failed system was considered. Russ read the Rule and verified that use in an existing and not failed systems satisfies the "to upgrade or modernize" condition of Rule 17.7, therefore the repair application is the appropriate application to use in this case.

Russ asked if anyone would make a motion to approve Aquaworx Remediator.

**Motion:** Dennis made a motion to approve Aquaworx Remediator, as drafted and with the noted materials to be provided by the applicant and approved by DEM.

**Second:** Dave seconded the motion

**Discussion:** There was no discussion.

**Vote:**

**Approve:** All present voted in favor of the motion.

The group agreed on April 2, 2009 at 8:30 in the SKTH Council Chambers, for the next meeting, pending availability of the room.

The meeting adjourned at 12:30 PM.