

**INNOVATIVE/ALTERNATIVE SEWAGE DISPOSAL TECHNOLOGIES
TECHNICAL REVIEW COMMITTEE (TRC)**

July 27, 2006 Meeting Minutes

APPROVED

Attendees:

TRC members present: Russ Chateauf, Joe Frisella, George Loomis, Tim Stasiunas, Noel Berg, Susan Licardi and Dennis Vinhateiro

TRC members absent: Ken Anderson, Dave Burnham

Others present: Brian Moore and Deb Knauss RIDEM

Russ called the meeting to order about 8:40 AM

Materials distributed:

- Draft Agenda for today's meeting
- Draft Minutes of 5/16/06
- Application Summary for Coon Manufacturing, Inc. application for polyethylene septic tanks

Minutes

Page 2, beneath "System Discharge", paragraph 1, change 550 to 450

Page 2, beneath "System Settings", in the last sentence, change "want" following Norweco to "what".

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

Second: Tim seconded the motion.

Vote: All present who were present at the May 16, 2006 meeting voted in favor (Russ Chateauf, Joe Frisella, George Loomis and Tim Stasiunas)

Draft Agenda

Russ stated that he would be introducing for discussion the recommendation for approval of Aquapoint/Bioclere made by the TRC relative to the approvals issued in May 2006 to Bio-Microbics for FAST. He asked if there were any additional topics to add to the agenda, no one had any requests for additional material for discussion.

Rhode Island Web-based Information System (RIWIS)

Russ reported that Sue Kiernan has spoken with Warren Angell (Chief of the DEM Information Management Unit) who informed her that there is a policy prohibiting sponsorship/advertising on state-authorized websites, therefore review of the RIWIS project is required by the state Department of Information Technology (DoIT).

Discussion included:

- With the state not directly involved, interested municipalities and URI pursue with Carmody (DEM providing necessary data to these municipalities). 23 or 24 towns might be interested in developing WW Mgt Plans and potentially using this system; some of them (ex. East Greenwich and Warwick) are focusing their effort on sewer connection issues.
- If the municipalities and URI pursue this project with Carmody, independent of the State, it might demonstrate the importance of this system. Or it may send a message to the State that State (DEM) involvement is not necessary....
- If the State is not involved, how to classify the system? State-sponsored, State endorsed, Standardized for RI
- RI.gov may be able to work with Carmody or a subcontractor to provide web-based ISDS tracking
- Time-imperative: Justin Jobin, who is very knowledgeable with the Carmody system, having used it as both a municipal employee and as a service provider, will only be funded for work on implementation of this program into September 2006. The procedure for making presentation to DoIT is very involved and time consuming and will not be accomplished before Jason's funding terms.
- Carmody has offered to provide 10% of the sponsorship received to URI for support of the project in RI.
- Commercial and large systems are not being afforded the oversight they warrant; the Carmody system would provide a method for evaluating O & M performed on these systems and comparing it with permit and I/A approval-specific requirements, thus simplifying enforcement and better ensuring proper performance of these systems. Barnstable County, MA is using the Carmody system to ensure that O & M performed and performance data submitted satisfies requirements.
- The Carmody system would benefit DEM by providing easy access to municipal information, helping to guide policy decisions. For example, current cesspool accounting, allowing more accurate data to be reported in support of the cesspool phase-out bill or

other water-quality issues. The system could simplify DEM/CRMC coordination and can accommodate on-line permit applications, which may be of benefit in the future (NH has implemented web-based permitting).

- Wisconsin is using the Carmody system with the financial support of commercial sponsorship

Motion: Susan made a motion to urge the State to become involved in a statewide web-based system of ISDS management.

Second: Noel seconded the notion

Discussion: Dennis proposed amending the motion by including “Rhode Island Web-based Information System, commercially supported (sponsorship)”. Tim suggested also including “municipally supported”.

Amended motion: Susan made a motion (as amended) for the “TRC to urge the State to become involved with “Rhode Island Web-based Information System” a statewide, municipally supported/endorsed and commercially supported (via sponsorship) web-based system of ISDS management”.

Second: The motion was seconded by Noel

Vote: all present voted in favor of the motion.

Coon Manufacturing, Inc, Application for Polyethylene Septic Tanks

Deb summarized the application,

- Used 5 – ½ years, two failures: cited three times in application, one of which is accounted for differently each time; both times the tanks were replaced and Coon paid the installation costs.
- Manufacturer limits cover to 24”
- Tanks are not to be used in “high water tables”, though this is not defined
- Manufacturer requires filling the tanks with water during installation and following pumping; the filling upon pumping is specified to prevent floating
- Tanks passed #500 load testing
- Approvals (# cited and number of letters provided)
- No denials

Floating issue: Consider prohibiting use in flood plains; since the tank is cited by the manufacturer to not be installed in high watertable areas, and the tanks can withstand the load of the 24” max cover, filling following pumping to prevent floating seem to no be necessary.

George noted that they have had issues on demo projects with poly tanks floating, although they were not installed in contact with the seasonal high watertable: the fine-gain bedding material functioned as a sump and held percolating water producing enough lift force to float the tank. Therefore, although the tanks may be able to withstand the soil pressure of the manufacturer indicated 24” max soil cover, the tanks must always be filled with water to prevent such displacement issues.

It was recommended that the onus be placed up on the designer to mathematically demonstrate to the Department that the tanks will not float. Mud matt / strapping would have to be used, rather than concrete. The tank does not have a flange onto which cement could be placed to counter weight the tank against lifting forces. **The manufacturer must provide an approved method to ensure that tanks will not float.**

Filling the tank with water following pumping:

- Wasteful use of water, in conflict with the Department’s support of water conservation
- Homeowner may refuse to use their onsite well for this use
- Three years following the first pumping, the homeowner may forget the tank has to be filled with water following pumping.
- Ownership of home may change, new owner may not be aware of filling requirement
- Pumper may turn on hose to being filling the tanks and tell the homeowner to turn off the hose when the tank is full (very unlikely that the pumper is going to stay onsite until the tanks is properly filled), homeowner may turn off as soon as pumper leaves or over-fill.

It was agreed that filling the tanks with water is not an acceptable option in Rhode Island and that the tanks must be counter balanced.

The group also agreed that with consideration of the necessity of this fail-safe requirement (filling with water), these poly tanks are not a “component replacement” for concrete tanks, and therefore it is very difficult to make a case to approve these tanks, unless the vendor addresses the buoyancy issue and provides for counter buoyancy.

Russ cited the approval issued to SeptiTech which allowed use of polyethylene tanks with the system, provided “site specific calculations are submitted with the design that address side-wall pressure and buoyancy forces on the specified tank”. He had recalled that there had been discussion with the TRC concerning the specifications of the polyethylene tank and that perhaps a specific manufacturer had been specified. Deb reported that she was not able to find any such specific tank reference in the material in the application file or in the electronic files that were maintained by staff involved with review of the SeptiTech application. Russ asked the group to review their notes for discussion concerning the poly tank issue during review of the SeptiTech application, so that we may be consistent in our treatment of this application.

Tank Dimensions

Liquid Depth

1,000 G tank:

Application states that they fail to meet the 48” liquid depth. The normal configuration manufacturer uses provides 47-1/2”, they propose reduction of the freeboard by 1/2” or seek a variance from the state requirement of 48”.

Tank detail depicts the depth from the *center* of the outlet pipe to the bottom of the tank as 45-1/2”, subtracting 2 inches from this dimension to provide the dimension from the *invert* of the outlet pipe to the bottom of the tank yields a depth of 43-1/2”. This represents a **discrepancy of 4-1/2 inches rather than the 1/2 inch noted by the applicant in the summary.**

1500 G tank:

The detail depicts a dimension from the bottom of the tank to the *center* of the out pipe of 54-1/4 inches, subtracting 2 inches to provide the bottom of tank to *invert* of outlet pipe dimension, yields 52-1/4 inches. Thus the **1, 500 gallon tank satisfies the liquid depth requirement in the Regulations.**

There was some discussion of the issue of tank dimensions and what hard science may support the dimensions specified in the regulations and that a one-half inch deficiency in the liquid depth requirement may be acceptable. However, **the group agreed that 4-1/2 inches was too great a discrepancy and that clarification of the correct depth from the applicant is necessary.**

The two-foot maximum cover and no vehicular traffic would be a problem for many installations. Often the septic tank is installed before home construction is complete; it is prudent to anticipate vehicular traffic over the installed tank.

The fiberglass tanks in use have a liquid depth of 48 inches and a flanged mid-seam.

The group agreed that these tanks are not equivalent to concrete.

Aquapoint / Bioclere and BioMicrobics FAST

Aquapoint / Bioclere

The TRC had made a recommendation to approve Aquapoint / Bioclere with no design flow restriction; the certification has not been issued. The application stated that the Vendor must be involved in design of every large system. It was also specified that influent characteristics would need to be considered and that recycle ratios may require adjustment accordingly, as well as a methanol feed to supplement BOD. The technology has a provisional approval in MA for <2,000 gpd design flow for an unrestricted number of installations and for >2,000 and <10,000 gpd design flow for no more than 50 installations.

Orenco’s AX denite approval recognized design flows greater than 2,000 gpd, with required quarterly reporting of performance data for two years under the Class II Certification. As the approval for Aquapoint / Bioclere has not yet been issued, incorporation of this monitoring and reporting requirement could be considered.

BioMicrobics – FAST

Russ and Deb had a conference call in June with Robert Rebori and Allison Blodig of BioMicrobics regarding the certifications DEM recently issued for FAST.

The denite approval limits design flow to 900 gpd. They were seeking approval for greater flows, but the data submitted were not supportive of an approval for systems larger than 900 gpd. During the call, they stated that they have denitrification performance data on large flow systems but that they did not submit it. They understood our reservations about approving the technology for design flows exceeding 900 gpd, given the lack of support in the application for use of the system to treat large flows.

MA has issued a provisional approval for FAST for denite up to 10,000 gpd.

Our approval of Orenco’s AX for denite recognized design flows greater than 2,000 gpd, with required quarterly reporting of performance data for the two year term of the Class II Certification.

So, with consideration of the issues of design flow and reporting requirements as required in the Advantex AX Denite Certification, which should also be considered for incorporation into the Aquapoint / Bioclere Certification and the recycle ratio adjustment approved for Aquapoint / Bioclere, we could reconsider the restrictions placed on FAST.

During the conference call, BioMicrobics agreed to provide design plans for various large flow systems with the associated performance data.

Russ sought the TRC's concurrence on modifying the Aquapoint approval to require systems over 2,000 gpd design flow to be tested quarterly, with results reported, as the OSI AX denite approval requires and that BioMicrobics' large system designs and performance data, when received, should be reviewed and the TRC consider a modification of their recommendation.

Motion: George made a motion to recommend that the Aquapoint approval should be modified to require systems over 2,000 gpd design flow to be tested quarterly, as the OSI approval requires and that when BioMicrobics large system performance data is received that it should be reviewed and that the TRC will consider modifying their recommendation based on such review.

Second: Joe seconded the motion.

Vote: All present voted in favor.

Denite Standard

The current standard used in RI for nitrogen reducing technologies is 50% TN reduction and TN effluent concentration no greater than 19 mg/l. The desire for some modification of this standard has been discussed at recent TRC meetings. MA DEP does not specify nitrogen concentration in their letters of approval.

Influent TN concentration of 70 mg/l, if the system removes 50% and the wastewater flow is half the design flow

If 19 mg/l were not cited as the treatment requirement, approvals could allow for more sewage to be treated on the lot if the system is used. This method affords a bonus associated with treatment performance by allowing an associated bonus of increased loading.

We would look at all the wastewater elements and determine that they meet our criteria, if so, the technology would be assigned an appropriate "loading factor". Since vendors report their effluent concentrations but there is generally no influent data, it may be better to talk about loading rate rather than effluent concentration and percent removal objectives.

Additionally, MA DEM requirement is 25 mg/l TN effluent for commercial uses. We may want to consider differentiating between commercial and residential uses.

Legislative Update

Warwick passed legislation mandating that homes with ISDS pre-dating DEM rules, connect to sewer within one year of property transfer, sewers are or when they are available.

Legislation was passed giving DEM additional authority to assess cumulative impact of building on the environment with respect to ISDS and Wetlands in Jamestown exclusively. DEM has yet to determine how to apply this authority.

Soil Air

Nitrification and denitrification are performed by this technology's wetting and aeration cycle, the Soil Air unit introduces air to the system following the septic tank.

A CICEET proposal was developed by URI and URI CE Water Quality to evaluate how the Soil Air process will work in the field by installing the unit at the systems of a stakeholder who would benefit. Group homes were identified as an appropriate use for this project; five systems will be evaluated. O & M language is still being refined between Soil Air Corporation and MHRH before the units are installed.

Motion: Joe made a motion to adjourn the meeting.

Second: Susan seconded the motion.

Vote: All present voted in favor.

The meeting adjourned about Noon.

Next Meeting

Next meeting was scheduled for September 13, 2006 at **8:30** at the South Kingstown Town Hall at 180 High Street in Wakefield.