

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

The meeting was held at  
95 Cripe Street, North Kingstown, RI

July 22, 2014

Approved Minutes

*Present:* Brian Moore, Nikki Andrews, Noel Berg, Jim Boyd, David Dow, Susan Licardi, George Loomis and Tim Stasiunas

*Absent:* Dennis Vinhateiro

*Others Present:* Bob and Rob Frost of Sterling Environmental, Carmel McGill of SES Wastewater/Siegmund Environmental Services, Blake Johnston, Nick Noble and Bob Johnson representing Orenco Systems, Inc., and Deb Knauss (DEM)

Call to Order: 8:50 AM

Materials Distributed:

- Draft Agenda for this meeting
- Draft Minutes of 6/18/14 meeting
- Jen Ryan's most recently distributed updates on permitting status of the AX-RT and TNT with enrollment reporting sheet
- Draft Aqua Safe approval certification

**Review of Draft Minutes of June 18, 2014**

**Motion:** George made a motion to approve the minutes as drafted.

**Second:** Noel seconded the motion

**Discussion:** There was no discussion.

**Abstention:** Jim, Nikki and Tim abstained from the vote because they were not in attendance at the meeting.

**Vote:** All present, except Jim, Nikki and Tim who abstained because they weren't at the June meeting, voted in favor of the motion.

**System Enrollment of Orenco AX-RTs and Singulair TNTs in the Monitoring Protocol for N-removal technologies approved under Rule 37.4.2(B)(i)**

Brian summarized Rule 37.4.2(B)(i), under which a vendor may apply for approval of a nitrogen removal technology that is certified to NSF/ANSI Standard 245; application under this Rule doesn't require the 2 years of data and approval from another jurisdiction that used to be required for all applications and is still an application option available under Rule 37.4.2.(A). Technologies approved under Rule 37.4.2(B)(i) are approved with a maximum of 50 approvals, until enough data on the performance of seven year round and three seasonal systems have been reviewed by DEM to establish that the systems are meeting the performance standards. Since both Orenco's AX-RT and Norweco, Inc.'s TNT have been approved since April of 2013, and the companies have been receiving monthly DEM permitting status updates, but none of either vendor's systems have been enrolled in the monitoring protocol, the vendors and distributors were notified that this topic was on today's agenda and that distributor attendance was required.

**Norweco, Inc., Singulair TNT**

On July 14<sup>th</sup> the number of TNT approvals was 34 of the maximum of 50, 5 of them have been conformed and none have been enrolled for monitoring. Brian Moore is concerned about the number being so close to 50 and the summer being more than half-over with no systems enrolled in the monitoring protocol; the protocol states that it was intended that all 10 test sites be identified by the time 25 systems have been approved. He is considering that DEM may have to stop accepting new applications until some of these systems are enrolled for monitoring.

The Frosts provided a spreadsheet of TNT application and approval activity showing that seven of them have been started-up. Only one of the systems in operation has been conformed. Brian emphasized that start-up should not be performed until the permit and maintenance contract are recorded in the land evidence records as required.

Bob Frost introduced a Norweco, Inc. proposal to modify Singulair DN's being used year round, to function as TNTs, to increase the number of year round TNTs installed and eligible for monitoring. Carmel McGill, a principal of the company that holds the approval certification for Singulair DN had no knowledge of this proposal and was very concerned about making any functional changes to these systems. This sentiment was supported by others. Brian suggested that the two Singulair distributors should get together and speak with Scott Hetrick (Norweco, Inc) about this proposal. If they come to an agreement, then a proposal for exactly how these systems will be modified needs to be drafted and submitted to DEM. He cautioned them that the TNT approved based on its certification to NSF Standard 245 and that if the units are not configured and functioning exactly as the TNT that is certified to Standard 245, it would be a violation of the certification for TNT.

There was discussion of the effect on early treatment performance, of filling near-coast systems with freshwater during installation. It was suggested that these systems could be filled with perhaps a half-volume of septage to seed the system and reduce start-up, while still providing the required antifoatation.

There were no additional questions and Carmel McGill and Bob and Rob Frost left.

#### Orenco Systems Incorporated, AdvanTex AX-RT

On July 14<sup>th</sup> the number of AX-RT approvals was 19 of 50 maximum, 23 of them have been conformed (the number conformed exceeds the number of approvals reported, because to hasten completion of the monitoring, Orenco is authorized to configure AX-RTs in nitrogen removal mode and enroll them for monitoring, even if the system is not in an area where nitrogen removal is required) and none have been enrolled for monitoring. Brian explained that Sunday afternoon Jason Churchill (Orenco) provided via email, a list of seven year round and three seasonal systems that would be monitored. This but this information was provided as a list with permit number, address and prior 30-days' average flow (although reported as gallons per minute, Nick informed the group that the units are actually gallons per day), not on the reporting spreadsheet provided with the monthly permitting statistics, where there are fields for additional required system information.

Nick Noble explained that Orenco has been working on a mechanical float since the USEPA prohibited use of mercury floats. They discovered that the swing is greater than the mercury float swing and in the RT this represents a big difference in volume between on and off. So they will continue their testing with this new float to figure out how to adapt.

They have some concerns about when they initiate sampling. The protocol states that year round systems' first sample is to be taken 60 to 90 days after start-up; they think this should be 60 to 90 days after occupancy because not all homes are occupied immediately after startup. Also, some of the seasonal systems are beyond two weeks of start up. If initiating sampling of these systems beyond the start-time indicated in the protocol is unacceptable to the TRC, they will delay sampling until other systems are installed. Brian asked them to provide the list of ten systems they have selected for monitoring, with the additional system specific information on the spreadsheet Jen Ryan provides with the monthly permitting status updates and he will probably approve the listed systems for sampling.

Nick read the details for each of the 10 systems that Jason identified in his Sunday email and emphasized that flows are low, suggesting that concentrations will be high. It was suggested that the float swing might be providing some volume per discharge event that is unaccounted for, so some volume may be getting lost in the calculation.

NSF testing uses influent of a fairly low strength, and includes intervals of various stress conditions, but not the kind of low flow, high concentration issue that is being discussed here. However, the systems certified to Standard 245 are approved as wastewater treatment systems without a restriction on influent conditions of daily flow and influent concentration. If daily flow averages are being reported around 25 gpd per occupant, which is about half what we might expect, and this becomes the new normal water use, maybe some of the details of the DEM-issued approval certifications need to be reconsidered for all the vendors.

There was additional discussion of the suggestion made during discussion of TNT, to spike systems with septage at start up. Bob Johnson said that even when dealing with a reputable pumper, the contents of a truck's tank is unknown, so this isn't the best approach. George suggested that another AdvanTex unit that is known to be performing well could be the source of the seed material.

There was some discussion of the range of seasonal use, from weekends only, to intense use over a three or four month interval and Bob asked if there is a preference for which type of seasonal use is monitored. Brian responded that this isn't stated in the protocol, so the vendors have the flexibility to enroll their preference.

There were no additional questions and the Orenco representation left.

There was TRC discussion of the delay initiating the sampling of these two technologies and issues associated with this. Although enrollment of the first 10 systems installed was rejected during development of the protocol, this idea had some TRC support today. There was some concern about additional delay in vendor follow-up with submission of the additional system details for the systems that will be monitored.

**Motion:** Noel made a motion to request that DEM send a letter requesting the lists of 10 systems to be monitored be provided to DEM with the required site and system-specific information, within 10 business days of the date of the letter.

**Second:** Susan seconded the motion.

**Discussion:** There was no discussion.

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

#### Ecological Tanks, Inc, Application for Aqua Safe<sup>®</sup> for TSS & BOD Reduction

Deb distributed a draft certification for Aqua Safe to support possible final discussion of the application and a perhaps a motion to approve the technology. Brian explained that according to Cal Locker who presented the application at the last meeting, Ecological Tanks, Inc., the applicant, wanted approval for residential use only and that if the approval accommodated five bedroom homes, they would be satisfied. Therefore, the draft certification lists only two model numbers: AS500 and AS600 (for which the required supporting data were submitted with the application) accommodating up to a five-bedroom home; low-profile units are not included in the draft approval. The design guidance in the application didn't address antifoatation, so there is a note at number 2 in General Design Requirements, calling attention to the fact that this needs clarification and that Cal Locker can address this.

**Motion:** George made a motion to approve Aqua Safe.

**Second:** Noel seconded the motion.

**Discussion:** There was no discussion.

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

### **AE Program Update**

**FAST, Three systems' data (Bio-Microbics)** The final 8<sup>th</sup> quarter's data and also the MASS DEP data that the certification requires have been submitted and all look good. A draft Class I certification exists as a renewal and will be issued when possible. There was discussion of vendor review of design plans and at what threshold it should be required. It was decided that designs for six bedrooms and all commercial design should require vendor review and approval. Deb will add this to the draft and bring it to the next TRC meeting for their review.

**Hydro-Kinetic Manuals (Norweco)** Hydro-Kinetic has been approved, so when the manuals are approved this "Standard 245" system will be added to the list of approved technologies and Norweco may schedule training. Revised manuals have been reviewed by DEM, and comments sent to Norweco and the last communication from them was a 6/23 email acknowledging receipt of the comments.

**Bio-Microbics Application for BioBarrier mbr –N-removal NSF 245-** TRC vote to approve 5/18/14. Approval drafted and manuals reviewed, with comments on manuals sent to Bio-Microbics. Through the week ending 7/18, Deb responded to emails from Jim Bell relating to his attention to the comments she provided on their draft manuals. When the manuals are re-submitted to DEM they will be reviewed and when they are approved, this "Standard 245" system will be added to the list of approved technologies and Bio-Microbics may schedule training.

**Eljen GSF Revised draft manuals & draft Class I approval-** 6/2/2014 DEM received Eljen's revisions to the manual. The revisions Eljen requested be made to the approval have been made. Since they want to review the approval again before it is issued in final format, it will be sent to them for review with DEM response to the revised manual received 6/2/14 and the comments that were compiled 7/21/14.

**Nitrex** the two start-up installations continue to be monitored.

### **Next Meeting and Adjournment**

The group selected August 26, 2014 for the next meeting. Deb will send a Doodle poll out to the group to verify availability for these date.

All business was concluded and no additional business was introduced; the meeting adjourned at 11:50.