

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

The meeting was held at the South Kingstown Town Hall

February 29, 2008 Meeting Minutes

Approved

Present: Ken Anderson, Noel Berg, Dave Burnham, Russ Chateaufeuf, Joe Frisella, Susan Licardi, George Loomis and Tim Stasiunas

Absent: Dennis Vinhateiro

Others present: Hollister and Laszlo Siegmund, SESI (arrived 9:15, departed 11:15) and Deb Knauss, RIDEM

Call to Order: 8:45 AM

Materials distributed:

- Draft Agenda for today's meeting
- Draft Minutes of January 11, 2008
- Summary of SESI application for nitrogen removal approval for Singulair

Minutes of January 11, 2008

Motion: Noel made a motion to accept the minutes..

Second: Joe seconded the motion.

Vote: All present, who were present at the January 11, 2008 meeting voted in favor (Ken Anderson, Noel Berg, Russ Chateaufeuf, Susan Licardi, Tim Stasiunas and Dennis Vinhateiro)

Consideration of Expansion of Class I Design Authority

This topic was summarized by Russ for the benefit of those not in attendance at the January meeting. Brief discussion followed and included possible methods of implementing training and certification, for example creation of a "Master Installer" category that the Training Center could help to create. They could also develop exams for demonstrating necessary competence and train those interested in obtaining this distinction.

Joe requested that the topic not be discussed at this meeting as it was not on the draft agenda and he would like time to more carefully consider the issue before engaging in TRC discussion. It was agreed that the issue would be placed on the draft agenda for the next meeting.

Leachfield Requirement With Advanced Treatment in SAMP Areas

With consideration of time, this topic was tabled for discussion at the next meeting.

SESI Singulair Nitrogen Removal Application

Deb summarized the material she compiled to facilitate consideration of the application submitted by SESI.

Hollister was asked to explain how the "optimized" aeration setting of 30 minutes on and 30 minutes off, and the recirculation setting of 10 seconds every minute were arrived at. He reported that adjustments were made on the basis of the appearance of the biology in the system and appearance was re-evaluated during site visits after the adjustments to determine if additional adjustment might be warranted. Hollister added that all the MA installations are set at 30 minutes on and 30 minutes off. He reported that before this was identified as the setting that optimized treatment, the setting was 45 or 50 minutes air on.

Reduction of air-on time was not intuitively understood by the group, as enhancing denitrification performance and clarification of this mechanism was requested.

Hollister was asked what system adjustments would be made, if an installation were not achieving 19 mg/l TN in the treated effluent. He responded that the factory settings generally work to optimize performance and that they will allow a system to run at that setting; if it does not come into compliance and the biology does not look as it should, the settings would then be adjusted. Field measurements are made of DO, turbidity and pH, in addition to the visual and olfactory observations. Unless they observe odor, excessive sludge, excessive build-up in the filter, heavy material in the first chamber, the system is allowed to run at the factory settings.

Seasonal Use: There is a need to address the issue of seasonally used homes; SESI has seen “strange” data from these homes, underscoring the need for careful consideration of seasonal use. SESI generally knows which installations are seasonally used and visits them during the winter; olfactory and visual inspection are used to evaluate system function and whether adjustment is necessary.

SESI uses Carmody data management to record inspection data.

The pump is in a sump and the inverts are the same; the pump cannot pump the system down, gravity from the basin – pump recirculates only. **Warranty** on the pump was previously 1 year and is now 3-years. There are 85 installations in MA, of these 3 or 4 pumps have been replaced.

If the pump malfunctions, what will happen? The pump is wired to the Norweco integrated panel, which can monitor anything connected to it, the SESI control panel plugs in to it, so a pump malfunction would sound an alarm and send notification (phone line monitoring is \$50/year). Most homeowners do not want a separate phone line, so the data line is secondary to communication use.

Hollister and Laszlo agreed that it would be beneficial to system monitoring efficiency if DEM were to require the **dedicated phone line telemetry**, but they do not want to be disadvantaged by such a requirement if other approvals do not incorporate this requirement. There was TRC support for requiring a dedicated phone line for system monitoring in all approvals and it was thought that we may have already incorporated a requirement for telemetry in at least one certification, for large systems.

There was consideration of the eventuality that homes may be constructed with out phone lines, as Hollister reported is being done in Florida; wireless monitoring would have to be used in this case.

It was noted that some of the components used in the electrical system are not of the best material for the use and that the **riser configuration is not water tight** as is required by the Rules and it was asked if the system could be retrofitted for a manufactured riser rather than the concrete specified in the application to meet the current Rules. **Hollister agreed that plastic risers could be used** to resolve the issue of watertight risers and asked the TRC to specify for them what needs to be done to bring the system in to compliance with the RI Rules.

It was suggested that the **center riser might have to remain of concrete-construction because of the vibration associated with the aspirator, but that it be sleeved with poly, PVC or fiberglass.**

Hollister reported that the **outlet tee in the first chamber cannot be fitted with an effluent filter because this would deviate from the configuration that was tested by NSF and would not be allowed by Norweco. Other options were suggested:**

- A sanitary tee or a hard-90° tee might be an acceptable option.
- Another option was suggested which would have a 90-degree elbow added to the bottom of the tee to reduce the likelihood of gas-associated particulate from being transmitted to the second chamber.
- The availability of gas baffles was also noted.

Maintenance providers: if this system were used in a treatment train with another alternative technology requiring O & M, would SESI have a method of training maintenance providers and providing O & M on the whole treatment train? Hollister replied that they would be able to provide this, but that if one wishes to perform warranty work one must travel to Ohio for the necessary factory training. Laszlo noted that any maintenance performed must be done so by a provider with the proper certification(s) and must be reported to SESI as well as the State and municipality/county, as SESI requires assurance that the required activity is being performed (as required by and which may be audited by NSF).

In reply to Russ’s query, it was reported that RI O & M contract compliance is at about 50% and MA is at about 85 – 90%.

The performance data and the **application’s claim of 80% TN reduction** was questioned: based on the generally assumed influent TN of 40 mg/l, the performance data provided and the application’s claim of effluent claim of 19mg/l are both inconsistent with the claim of 80% removal. It was noted that **the 80% TN removal claim needs to be officially re-stated because the application can not be considered for approval with this statement standing as it is.** Russ suggested that a letter in the file could be acceptable resolution of this issue.

The NSF study’s value is limited to that of support of actual installations’ performance data, since the NSF influent characteristics is of much lower waste strength than that which is observed in actual use, where with low water use, influent TN has been observed as high as 150 mg/l.

Hollister stated that more data has been recently received from MA and that he can provide it for TRC review. He will **e-mail this additional data to Deb** and will identify the seasonally used systems. At 11:15 the Siegmund’s departed.

Russ acknowledged that **modifications to the design manual may be required to address the water tightness and other issues identified during the morning's discussions and that these modifications could be brought to the TRC, if they wish.**

Russ asked the TRC what their wish is at this time, concerning this application.

- Correct the 80% nitrogen removal claim.
- The explanation of process was not satisfactory.
- The application language must be edited to accurately state the process and if necessary, this should be done with editorial contribution or at least review by Norweco.
- Plans must correctly depict a RI-compliant configuration (watertight risers, waterproof electrical components)

Again, there was concern expressed with our requirement for nitrogen removal to be stated as 19 mg/L in the treated effluent and 50% reduction, particularly with consideration that this system design, as well as others approved in RI, prevents the assessment of influent characteristics. Russ stated that he is reluctant to eliminate the 50 % removal element of the performance requirement because of circumstances like the following example:

Influent TN of 80 mg/L, treated effluent TN concentration is 23 mg/L. Without a 50% removal element to the requirement, this system installation would have to be declared out of compliance; while it is over 19mg/l, it is getting a reduction of 50%.

There was discussion of the occasional **unusually high concentrations reported for the various parameters evaluated.** One perspective is that sampling error could be responsible for some of these. Additionally, it was noted that there are unusual circumstances incorporated in all technology applications, so we need to recognize that there will be outliers.

There was brief discussion of sampling the liquid contents of the 1st chamber and comparing these data to treated effluent, seeking correlation between the characteristics of these two chambers relative to high effluent concentrations that might be reported. Also of the idea of developing a method for subtracting the contribution of the recycled effluent from the results reported for 1st chamber samples. There was some recollection that this was attempted in the past by a vendor without substantial success.

There was discussion of the issue of the RI requirement for at least two O&M providers; it is SESI's responsibility to satisfy this, because Norweco is not the applicant.

PSND/BSF loading rates

The loading rates for these leachfields require revisions due to the Rules that went into effect 1/1/08. Draft revisions have been prepared by Ernie Panciera and reviewed by George Loomis and David Kalen; this draft was distributed by Russ (TRC: disregard the version distributed by Deb, which was edited after her departure from the office the day before the meeting). Russ sought a TRC recommendation to adopt the language.

Motion: Joe made a motion to accept the revisions Russ distributed.

Second: Susan seconded the motion.

Discussion: There was lengthy discussion, though Deb's notes provide no clear threads to report. At end, Russ proposes adding a note to the SNDF loading rate as follows: to be sized on the most restrictive texture, structure and consistence within 3-feet below the infiltrative surface, and asked for comments.

Comments: Q: Why only 3-feet and not 5? **A:** RJC: better treated effluent and more advantageous to deliver it higher in the profile. George noted that loading rates for PSNDS need to be brought in to line with those of BSFs because PSNDS provide much better treatment.

There was a request to modify note 3 so that it clearly states that the sand layer is required when effluent is being discharged to a horizon modified by Note 3; the note is intended to be reserved for sandy/coarse soils with little treatment potential.

Motion: Joe made a motion to accept this language.

Second: Dave seconded the motion.

Vote: All present voted in favor.

Adjournment

Motion: Tim made a motion to adjourn the meeting.

Second: Ken seconded the motion.

Vote: All present voted in favor.

The meeting adjourned at 12:45 PM.

Next Meeting

Next meeting was scheduled for April 25, 2008, at **8:30** at the South Kingstown Town Hall at 180 High Street in Wakefield.