

Subsurface Sewage Treatment Systems (SSTS) Technical Advisory Panel (TAP) for Product Registration

Meeting Notes – October 23, 2008

Veterans Services Building

Meeting Attendees

Committee Members	Present on October 23	Guests	Present on October 23
Ed Kerzinski	x		
Mitch Johnson	x	Mike Catanzaro, Delta Environmental	
Loren Kohnen	x	Nick Noble, Orenco Systems	
Kemp Ritter		Lynn Carlson, Aggregate and Ready-mix Association	x
Sara Christopherson	x	Marie-Cristine Belanger, Premier Tech	x
Mike Frauenkron		Andy McKinley, Premier Tech	x
Bob Whitmyer		Bob McKinney, River to River/ Premier Tech	x
Greg Halling	x	Jim Bell, Bio-Microbics	x
Joe Enfield	x	Dean Person	
Chad Villand	x	Paul Flynn	
		Doug Fessel	
		Tony Birrittieri, Petersen Supply	x
		Kurt Christopherson	
MPCA Staff		Jesse Kloeppner, Orenco Systems	
Barb McCarthy	x	Kevin Kloeppner, Advanced Onsite Solutions	
Gretchen Sabel	x	Jeff Iverson, Infiltrator Systems	
Mark Wespetal	x	Wes Combs, Zoeller	
Bill Priebe, Supervisor		Colin Bishop, Bord na Mona	
Leah Hedman, Attorney General Office		Frank Connelly, JMK	

Meeting was called to order at 10:10 AM on October 23, 2008 in the 5th floor conference room of the Veterans Services Building. Agenda was reviewed and introductions occurred.

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Meeting Notes

Chair Whitmyer could not be present for this meeting; Greg Halling stood in to chair. Meeting notes were reviewed from the September 25, 2008, meeting. Several comments were made regarding grammatical usage. TAP also recommended at the last meeting that testing of igneous rock for hardness was not routinely needed. **A motion made by Villand , second by Kerzinski , to approve the meeting notes. Motion carried, unanimous.**

Website Update and Future Meeting information

Changes to the web page were discussed. Barb McCarthy replaced the first applications with a fill-able Word version that applicants can type into. Barb McCarthy will update the website site to include all meeting notes and agendas. Additional changes may be made to the application if manufacturer continue to be having issues completing it.

TAP meeting schedule for the next few meetings was distributed. Meetings are being moved to the MPCA St. Paul, Board Room West, through June 2009. The December 18, 2008 meeting may be changed because there is a University of Minnesota workshop scheduled for this day and other conflicts by TAP members.

How to Use the List

TAP reviewed the revised 'How to Use the List' based on TAP comments from the September meeting. Barb McCarthy provided links in the document. There were comments on redundancy. Should the list provide information the counties need to record for product renewal? The treatment levels as it pertains directly to product registration should be explained and how this relates to actual field performance data. The issue needs to be discussed as the Operating Permit templates are drafted.

Orenco Systems, Inc. – Letter from NovaTech

The letter from NovaTech was discussed stating that the AX20 could handle a flow of 600 gpd and meet treatment levels. Concerns were raised that the registration is based on the assumption that MPCA's flow is actually 70% of 600 gpd, which is not correct. Discussion – National Sanitation Foundation (NSF) allows certification of systems based on "scaling up" – why was this not done? **Motion Johnson, second Kohnen, to deny Orenco's application for the AdvanTex AX20 at 600 gpd.** Discussion – Letter from NSF should address scale-up and include engineering review, or Orenco should retest at 600 gpd. **Motion passed unanimous.**

Bio-Microbics (FAST) Submittal

Barb McCarthy presented the materials that were prepared for the committee regarding the Bio-Microbics treatment systems. Barb McCarthy noted that Bio-Microbics is requesting scale-up registration up to 9000 gpd based on NSF testing. Barb McCarthy also shared information on a FAST system permitted by the MPCA State Disposal System permit program.

Jim Bell provided a powerpoint presentation on FAST systems. Jim Bell provided an overview of four product types: 1) single family, 2) cluster systems, 3) failed system rejuvenation, and 4) high strength

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wastes. There was discussion. Most of the larger units are pre-installed at the tank manufacturer, the smaller units are assembled into the tank in the field. In either case, Bio-Microbics trained installers are on hand to ensure the unit is properly installed. About 160 units are currently installed in Minnesota; about 20 of these are high-strength systems. Sludge may need to be removed every six months. How long does a typical residential blower last? Seven to twelve years. What types of alarms are used? Audible and light local alarms – will alert of pressure change in the airline or if the blower stops.

Jim Bell then addressed issues raised relative to Barb McCarthy's draft listing. Why are some of the units listed as Treatment Level C devices? To meet Treatment Level B, fecal coliforms must be reduced to 10,000. Jim Bell indicated the NSF data shows results from testing before the Salcor unit that proves this, Barb McCarthy will re-evaluate the data to determine if it meets Treatment Levels B and C.

Scale Up Factors – Jim Bell presented a table that he worked up to address this issue. This table addresses wastewater flow through the media; it is a little more complicated for air flow. Jim Bell indicated that Tony Birrittieri, Peterson Supply, could share data from Minnesota. Mitch Johnson raised a concern – the TAP is to require third-party testing, why should data from just anyone be accepted? Sara Christopherson said that there isn't a protocol for this process. Jim Bell indicated that if the committee (and county staff) are willing to learn to take the samples, Bio-Microbics will pay laboratory costs. Since there is no protocol for High Strength Waste, this will need to be worked out.

It is important for the committee remember that the two NSF Standard 40 Test Reports are separate and they need to be evaluated separately. Regarding Service contracts, all systems must have a service contract and testing requirements must also be addressed. The installers will be trained on installation, and service providers will be trained in maintenance. Tony Birrittieri agreed to provide a generic service agreement that outlines the testing needed. Bio-Microbics provides training to those who install and service their units, and they require annual refreshers.

Question – what size tanks are actually required for this system? Just saying "per local requirements" is probably not sufficient. It must be clear what the minimum required tank capacity is for the system. Long discussion – bottom line is that the manufacturer must clearly state septic tank capacity.

Lunch break

Premier Tech Environment (EcoFlo) Submittal

Andy McKinley provided an overview of the Premier Tech EcoFlo systems. Maintenance was discussed; peat media removal can be done using a standard pump truck. Maintainers are trained by Premier Tech. They take digital photos of each system – these pictures and other data are reviewed by Premier Tech, Quebec, Canada, who use the information to determine where improvements are needed. Installation is very simple, and they are working on ways to pre-assemble more of the components. Sizing is 600 gallons for each 8 ft x 14 ft pod; add additional pods for larger flows using a pressure flow splitter among multiple units. Staff indicated the EcoFlo is effective at phosphorus removal and they can

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provide a presentation on this, too. An 8 year maintenance agreement is included in the initial cost of installation.

Open bottom systems – There was discussion by Premier Tech staff on the merits of bottom drain peat filters. What it comes down to it, what is effluent? Where does it stop being “sewage”? NSF data shows that the effluent is 2 mg/L BOD, 2 mg/L TSS and 100 MPN fecal coliform bacteria when the wastewater exits the rock bed under the peat medium. The rock bed used for infiltration of wastewater is sized based on the underlying soil. Comparing their unit to a soil-based pressurized system, the EcoFlo distributes effluent over a larger area of soil. Peat is like a sponge, helps to moderate peak flows without bypassing. Around 30,000 systems have been installed in North America; 100 in Minnesota. Each is under a maintenance contract. The system has just been approved by the European Union. (Note – water use patterns are different in Europe, typically lower flows but higher strength.) They are approved for surface discharge in Iowa, but are not requesting surface discharge in Minnesota.

Premier Tech has more data, what all do we need? Is it cold weather data? Premier Tech can provide test data from a study authored by Dr. Rubin in the State of Virginia that shows performance as measured in lysimeters under systems.

Barb McCarthy went through the discussion points identified in her check list. Item #7 in the checklist – NSF has certified the pump vault in the bottom of the concrete tank, so this is OK. Item #8 – use of garbage disposal or sewage pump is OK if the preceeding septic tank is sized large enough to allow the extra settling needed. Discussion about the advantages of very simple systems like the open bottom peat filter vs use of filters, pumps, blowers. EcoFlo systems are installed in Cook and St. Louis Counties.

There was discussion regarding the open bottom models. They must meet state code requirements. Andy McKinley indicated this should be changed to allow EcoFlo as an open bottom discharge. Marie-Cristine Belanger indicated that their product will meet the Type IV hydraulic loading rate with the rock bed. Discussion – how does this differ from a mound? What about time dosing? Does the tipping bucket qualify as a time dosing device? Flow measurmet is needed. Question – do you have data on nitrogen? They are not asking for nitrogen treatment – they have a different product that provides nitrogen removal.

Conclusion – Premier Tech was asked to consider the code’s hydraulic loading rates and come back to the committee with information on how they will meet Type IV sizing. Otherwise, the information provided was adequate for registration of the closed-bottom peat filters. Mitch Johnson asked why we needed this if they are meeting our requiriements for soil dispersal sizing?

Question – what happens when you are on a steep slope? They use retaining walls. Sara Christopherson indicated they should be using the mound absorpton ratios, not loading rates. The critical measure is downslope water acceptance. Concern – requiriement that Type IV be pressurized – this is unfair.

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Drainfield Rock

Lynn Carlson from Aggregate and ReadyMix of Minnesota (ARM) brought a number of limestone aggregate samples to demonstrate the Minnesota Department of Transportation (MnDOT) Specification 3137, CA-3, for sizing, soundness, hardness, and fines content of aggregate. This discussion, and the aggregate samples provided by Lynn Carlson, helped to develop the proposed rock specifications contained in the draft Recommended Standards and Guidance for Drainfield Rock. The document will be revised and brought back to the TAP.

Bio-Microbics (additional information)

Jim Bell from Bio-Microbics provided additional information on testing. The report 'Variability and Reliability of Test Center and Field Data: Definition of Proven Technology from a Regulatory Viewpoint, September 2005' by New England Interstate Water Pollution Control Commission, Lowell, Massachusetts, was briefly discussed. Barb McCarthy will forward this report to the committee. Jim Bell also has the data itself if anyone wants the raw data.

Discussion of auditing systems post certification by 1) NSF and 2) Bureau de Normalization du Quebec (BNQ). NSF's certification is not mandatory and does not include sampling. BNQ's does include mandatory sampling.

Next Meeting

Delta Environmental Products EcoPods revised application has been submitted. Sam Carter with Orenco Systems Inc. would like to provide the committee with a demonstration of their online monitoring system. There was general agreement that although this is an interesting presentation, it does not really pertain to issues the committee is involved with. We may consider a discussion of the Wisconsin enforcement approach in future meetings.

Open Forum

Jim Bell – there's a new Membrane Reactor (MBR) that has been through NSF testing. But due to delays at NSF in getting out reports completed, it will be some time before the report is done. How complete does the NSF data have to be to get it out? It may take years to get data from NSF.

Gretchen Sabel provided a short update on the process with synthetic media manufacturers. Ring Industrial has withdrawn their application for full-size use, based on a process proposed by Infiltrator Systems, Inc. that several synthetic media manufacturers come in together and request a 25% reduction. At a meeting on October 1, 2008 with the MPCA, Infiltrator, Ring and Advanced Drainage System asked MPCA to consider this and whether a joint request at 75% of full size could be supported. MPCA was not supportive of this. The media manufacturers agreed to develop a white paper supporting their claims that includes consideration of papers specifically selected by MPCA that show that 25% reduction is not supported by scientific studies. The next meeting on this topic will be on November 13, 2008. The committee will be updated following the discussion with the manufacturers.

Move to adjourn Kohnen, second Johnson , to adjourn. Unanimous. Meeting concluded at 3:25 pm.