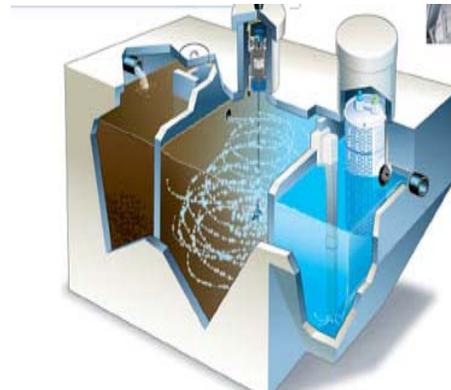




## 2007 ANNUAL REPORT

Of the

## Sewage Treatment Systems Technical Advisory Committee



March 31, 2008

## **Executive Summary**

The Sewage Treatment Systems Technical Advisory Committee (TAC) was created under Section 3718.03 of the Revised Code with the enactment of Sub. H.B. 231 in 2005. The appointing authority for the TAC was modified by Am. Sub. H.B. 119 in July, 2007, and its role was modified to include the pursuit of innovative treatment systems and implementation of pilot projects.

The TAC scheduled monthly meetings and was very active reviewing products in 2007. During 2007, the TAC reviewed and recommended approval of 27 products from 14 manufacturers. The TAC worked with the Ohio Department of Health (ODH) to develop 5 special device approvals to authorize the continued use statewide of systems and components that were used widely in early 2007 under the prior rules to continue to provide system options for homeowners, system installers and local health districts. The TAC also adopted 3 resolutions to support the continued authorized use of products that were approved by rule in early 2007. The TAC has not yet identified any new technologies that would qualify for limited approval as a pilot project, although several technologies have been discussed in TAC meetings for potential demonstration projects.

The systems and components approved in 2007 by the TAC have provided for the use of soil depth credits. A soil depth credit allows a homeowner to install a system using less thickness of soil than was originally needed for the system by using a pretreatment component that reduces the organic and bacterial load from the sewage. This means that less soil is needed to perform the remainder of the sewage treatment. The use of pretreatment components to reduce the size of the soil absorption area and the thickness of soil needed for treatment has become a widely used option for on-site sewage treatment systems. During 2007, six different pretreatment trains that meet the effluent quality standards of the General Nonpoint Source Discharge Elimination Systems (NPDES) permit for household systems were approved for the replacement of existing discharging sewage systems that are failing. These approvals provide a wider market of system choices for homeowners.

The TAC will continue to work with system manufacturers to review and recommend approval or disapproval of new technologies to the Director of Health, and will actively pursue the research, development, and timely approval of innovative and cost-effective alternative technologies as required under section 3718.03 (F)(4) of the Ohio Revised Code.

## **Statutory Authority of the Sewage Treatment Systems Technical Advisory Committee**

The Sewage Treatment Systems Technical Advisory Committee (TAC) was formed under Sub. H.B. 231 enacted by the 125<sup>th</sup> General Assembly in May, 2005. The TAC is authorized under Section 3718.03 of the Revised Code. The role and appointment of the TAC was modified by Am. Sub. H.B. 119 in July, 2007. The members of the TAC are appointed under Chapter 3718.03 (A) of the Ohio Revised Code:

*“RC 3718.03 (A) There is hereby created the sewage treatment system technical advisory committee consisting of the director of health or the director’s designee and ten members who are knowledgeable about sewage treatment systems and technologies. Of the ten members, four shall be appointed by the governor, three shall be appointed by the president of the senate, and three shall be appointed by the speaker of the house of representatives.*

*(1) Of the members appointed by the governor, one shall represent academia, one shall be a representative of the public who is not employed by the state or any of its political subdivisions and who does not have a pecuniary interest in household sewage treatment systems, one shall be an engineer from the environmental protection agency, and one shall be selected from among soil scientists in the division of soil and water conservation in the department of natural resources.*

*(2) Of the members appointed by the president of the senate, one shall be a health commissioner who is a member of and recommended by the association of Ohio health commissioners, one shall represent the interests of manufacturers of household sewage treatment systems, and one shall represent installers and service providers.*

*(3) Of the members appointed by the speaker of the house of representatives, one shall be a health commissioner who is a member of and recommended by the association of Ohio health commissioners, one shall represent the interests of manufacturers of household sewage treatment systems, and one shall be a sanitarian who is registered under Chapter 4736. of the Revised Code and who is a member of the Ohio environmental health association.*

*(B) Terms of members appointed to the committee shall be for three years, with each term ending on the same day of the same month as did the term that it succeeds. Each member shall serve from the date of appointment until the end of the term for which the member was appointed.*

*Members may be reappointed. Vacancies shall be filled in the same manner as provided for original appointments. Any member appointed to fill a vacancy occurring prior to the expiration date of the term for which the member was appointed shall hold office for the remainder of that term. A member shall continue to serve after the expiration date of the member’s term until the member’s successor is appointed or until a period of sixty days has elapsed, whichever occurs first. The applicable appointing authority may remove a member from the committee for failure to attend two consecutive meetings without showing good cause for the absences.*

*(C) The technical advisory committee annually shall select from among its members a chairperson and a vice-chairperson and a secretary to keep a record of its proceedings. A majority vote of the members of the full committee is necessary to take action on any matter. The committee may adopt bylaws governing its operation, including bylaws that establish the frequency of meetings.*

*(D) Serving as a member of the sewage treatment system technical advisory committee does not constitute holding a public office or position of employment under the laws of this state and does*

*not constitute grounds for removal of public officers or employees from their offices or positions of employment. Members of the committee shall serve without compensation for attending committee meetings.*

*(E) A member of the committee shall not have a conflict of interest with the position. For the purposes of this division, "conflict of interest" means the taking of any action that violates any provision of Chapter 102. or 2921. of the Revised Code.*

This section of the Revised Code also identifies the responsibilities and actions of the TAC:

*(F) The sewage treatment system technical advisory committee shall do all of the following:*

*(1) Develop with the department of health standards and guidelines for approving or disapproving a sewage treatment system or components of a system under section 3718.04 of the Revised Code;*

*(2) Develop with the department an application form to be submitted to the director by an applicant for approval or disapproval of a sewage treatment system or components of a system and specify the information that must be included with an application form;*

*(3) Advise the director on the approval or disapproval of an application sent to the director under section 3718.04 of the Revised Code requesting approval of a sewage treatment system or components of a system;*

*(4) Pursue and recruit in an active manner the research, development, introduction, and timely approval of innovative and cost-effective household sewage treatment systems and components of a system for use in this state, which shall include conducting pilot projects to assess the effectiveness of a system or components of a system;*

*(5) By January 1, 2008, provide the household sewage and small flow on-site sewage treatment system study commission created by Am. Sub. H.B. 119 of the 127th general assembly with a list of available alternative systems and the estimated cost of each system.*

*(G) The chairperson of the committee shall prepare and submit an annual report concerning the activities of the committee to the general assembly not later than ninety days after the end of the calendar year. The report shall discuss the number of applications submitted under section 3718.04 of the Revised Code for the approval of a new sewage treatment system or a component of a system, the number of such systems and components that were approved, any information that the committee considers beneficial to the general assembly, and any other information that the chairperson determines is beneficial to the general assembly. If other members of the committee determine that certain information should be included in the report, they shall submit the information to the chairperson not later than thirty days after the end of the calendar year.*

*(H) The department shall provide meeting space for the committee. The committee shall be assisted in its duties by the staff of the department.*

The purpose of this report is to fulfill the requirements of RC 3718.03 (G) as cited above.

The members of the TAC during 2007 were:

<b><i>2007 TAC Member</i></b>	<b><i>Company</i></b>	<b><i>Representing</i></b>
Dick Bachelder	PSA, Inc.	Manufacturer
Ralph Benson, RS	Clermont County Health District	OEHA Sanitarian
Tim Gerber	Ohio Department of Natural Resources, Div. of Soil and Water Conservation	Soil Scientist, ODNR
Stephen Hovancsek, PE, PS		Public Member
Michael Price, RS	Norweco, Inc.	Manufacturer
Raymond Saporito, MPH, RS	Ashtabula County Health Department	AOHC Health Commissioner
Todd Supeck	Supeck Septic Services, LLC	System Installer
Mark Stump, PE	Ohio EPA	Engineer
Martin Tremmel, MPA, RS, JD	Union County Health Dept.	AOHC Health Commissioner
Mark Tumeo, PhD, JD, PE	Cleveland State University	Academia
Rebecca Fugitt, MS, RS	Ohio Department of Health	Director of Health Representative

### ***TAC Review and Approval of Products***

In accordance with Section 3718.03 (F)(1) of the Revised Code, the TAC developed standards and guidelines to use for the review of new products that differ in design or function from those authorized in law. These standards and guidelines are included in Appendix 1. The TAC also developed in conjunction with ODH, an application form for the review of new products in compliance with Section 3718.03 (F)(2). The application form can be found on the ODH website at <http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx>.

The TAC scheduled monthly meetings for review of products; if no products were scheduled for review, then the meeting was cancelled. The TAC held nine monthly meetings in 2007.

Subsequent to the development of the standards and criteria, the TAC proceeded to review various components and products in accordance with Section 3718.03 (F)(2) under the prior rules in place from January 1, 2007 through June 30, 2007. After the adoption of Am. Sub. H.B. 119, and the rescission of the early 2007 sewage treatment system rules, the TAC reviewed the standards and criteria and developed an appendix

that provided standards for pretreatment of effluent applied to a soil absorption components, and standards for discharging system treatment trains that were in compliance with the General NPDES permit. These standards were integrated with the newly adopted statewide interim rules and the subsequently adopted special device approvals in effective from July 1, 2007 to date. The following is a summary of the products approved and their date of approval in 2007. The complete listing of product approvals, models, and treatment train configurations, and the treatment standards they were approved for, may be found in Appendix 2.

Manufacturer	Product	Application Date	TAC Action Date	Approval Date (ODH Director)
Bio-Microbics, Inc.	Microfast Models	5-22-2007		6-25-2007*
Bio-Microbics, Inc.	Microfast+Salcor 3G UV	5-22-2007		6-25-2007*
Bio-Microbics, Inc.	Retrofast Models	5-22-2007		6-25-2007*
Bord na Mona	Puraflo Peat biofilter	2-5-2007	5-8-2007**	2-20-2007*
Consolidated Treatment Systems, Inc.	Enviro-Guard ENV or ENV-M	1-31-2007	5-8-2007**	2-26-2007*
Consolidated Treatment Systems, Inc.	Enviro-Guard ENV or ENV-M +Salcor 3G UV	1-31-2007	5-8-2007**	2-26-2007*
Consolidated Treatment Systems, Inc.	Enviro-Guard ENV or ENV-M +Salcor 3G UV+Reaeration	2-14-2007	5-8-2007**	3-23-2007*
Consolidated Treatment Systems, Inc.	Multi-Flo FTB Models	1-30-2007	5-8-2007**	2-26-2007*
Consolidated Treatment Systems, Inc.	Nayadic Models	1-30-2007	5-8-2007**	2-26-2007*
Delta Environmental Products	DF Series ATU	3-27-2007	5-8-2007**	4-9-2007*
Delta Environmental Products	DF Series ATU +Salcor 3G UV disinfection	10-25-2007	11-13-2007	12-1-2007
Delta Environmental Products	DF Series ATU +Salcor 3G UV disinfection+ Re-aeration	10-25-2007	11-13-2007	12-1-2007
Ecological Tanks, Inc.	Aqua-Aire AA Models	1-22-2007 6-11-2007	5-8-2007**	3-7-2007* 6-20-2007
Ecological Tanks, Inc.	Aqua-Aire AA Models+Disinfectant UV+Re-aeration	7-30-2007	9-11-2007 Denied	10-9-2007 application withdrawn

Ecological Tanks, Inc.	Aqua-Safe AS Models	3-27-2007		5-11-2007*
Ecological Tanks, Inc.	Aqua-Safe AS Models+Disinfectant UV+Re-aeration	7-30-2007	9-11-2007	10-9-2007
Eco-Pure, Inc.	300 Series Peat Moss Filter	5-8-2007	5-8-2007**	6-25-2007*
Hoot Aerobic Systems, Inc.	Hoot H Series Models	9-25-2007 11-26-2007	12-11-2007	10-30-2007*
Jet, Inc.	1500 Series BAT Media Plants	2-16-2007	5-8-2007**	3-6-2007*
Jet, Inc.	1500 Series BAT Media Plants+Salcor 3G UV	7-30-2007	8-14-2007 9-11-2007	10-26-2007
Jet, Inc.	1500 Series BAT Media Plants+Salcor 3G UV + Re-aeration	7-30-2007	8-14-2007 9-11-2007	10-26-2007
Norweco, Inc.	Singulair Models 960 or TNT	11-1-2006/2-13-2007	5-8-2007**	3-7-2007*
Norweco, Inc.	Singulair Models 960 or TNT + UV disinfection	11-1-2006/2-13-2007	5-8-2007**	3-7-2007*
Norweco, Inc.	Singulair Model TNT	2-13-2007	5-8-2007**	3-7-2007*
Norweco, Inc.	Singulair Model TNT+UV Disinfection+Re-aeration	1-22-2007		5-17-2007*
Orenco Systems, Inc.	AdvanTex AX 20	1-16-2007	5-8-2007**	2-27-2007*
Orenco Systems, Inc.	AdvanTex AX 20 +Salcor 3G UV	1-16-2007	5-8-2007**	2-27-2007*
Orenco Systems, Inc.	AdvanTex AX 20 + Salcor 3G UV+ Re-aeration	1-16-2007	5-8-2007**	2-27-2007*
Presby Environmental	Presby Systems	11-26-2007	12-11-2007	2-29-2008 application withdrawn
Quanics	SCAT Biofilters (Aerocell media or Bio-Coir media)	2-28-2007	5-8-2007**	4-10-2007*
Septi-Tech, Inc.	Septi-Tech Advanced	3-27-2007	5-8-2007**	4-30-2007*

	Wastewater Treatment Systems -NPDES supplement	4-24-2007	5-8-2007 6-12-2007	6-25-2007
Tex-Aire, Inc.	Mighty Mac	3-27-2007 5-1-2007		5-11-2007**
Zoeller Pump Company	Fusion Series Treatment Systems ZF Models BOD/TSS 10,000 Fecal	11-1-2007	11-13-2007 (10,000 fecal approval request denied)	11-14-2007 for BOD/TSS* application for 10,000 fecal approval withdrawn

\* Reviewed originally under authority of now rescinded OAC Rule 3701-28-12 or current OAC 3701-28-08 for BOD/TSS sizing reduction

\*\*Recommended for continued approval by TAC through Resolution 07-05-081

A complete record of the meeting summaries for each monthly meeting and the recommended approvals that were made may be found in Appendix 3 and is posted on the ODH website at <http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx>.

Am. Sub. H.B. 119 also required the rescission of the early 2007 rules that authorized a number of alternative technology systems including mounds with pressure distribution, and drip distribution technology. The early 2007 rules also authorized the general use statewide of shallow leaching trenches, alternatives to stone aggregate for trench materials including chambers, bundled polystyrene, and alternative aggregate products, different configurations for septic tank designs, and reductions in the soil absorption area based on reducing the biochemical oxygen demand and total suspended solids in the sewage effluent. The current statewide interim sewage rules authorize only septic tanks, leach lines, surface and subsurface sand filters, and privies. Subsequently, the TAC worked with ODH to develop five special device approvals under OAC Rule 3701-29-20 (C) to allow the continued use of these sewage system components and technologies statewide. These special device approvals are listed on the ODH website at <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewmore.aspx> and includes:

1. Sand mounds with pressure distribution
2. Alternative leaching trenches
3. Septic tanks with 9 to 12 inch air gaps
4. BOD<sub>5</sub>/TSS Sizing Reductions (for soil absorption areas)
5. Drip distribution systems (automatic flush)

During January to June, 2007, ODH approved pretreatment components for manufacturer's that could demonstrate compliance with nationally recognized treatment standards that were supported by independent third party testing as authorized under the Ohio Administrative Code Chapter 3701-29. Upon rescission of the early 2007 rules, the TAC and ODH wanted to ensure that the products that were previously approved, already permitted by local health districts for installation, or were already installed for homes continued to be approved during the interim rule period.

Subsequently the TAC took action to adopt three resolutions to support the continued approval of those products and components and their statewide use in Ohio. These

resolutions may be found in Appendix 4. These actions were taken to help clarify to the manufacturers, installers, homeowners and local health districts the approval to continue with permitting and use of those products and components that were approved during January to June, 2007.

### ***Pilot or Demonstration Projects***

Section 3718.03 (F)(4) states the TAC shall:

*(4) Pursue and recruit in an active manner the research, development, introduction, and timely approval of innovative and cost-effective household sewage treatment systems and components of a system for use in this state, which shall include conducting pilot projects to assess the effectiveness of a system or components of a system;*

Am. Sub. H.B. 119 adopted on July 1, 2008 added language to create the Sewage Treatment Systems Innovation Fund and directed ODH to place the state portion of the permit fees collected across the state into this fund with 25% of the fund to be used for pilot or demonstration projects. In early 2007, the TAC was approached by one company with interest in conducting a pilot project to test the effectiveness of a remediation product in Ohio. The company presented a draft pilot project study plan and the TAC provided comments. The company decided due to business reasons to not pursue further demonstration testing at that time. While discussion during the TAC meetings has occurred related to pilot projects, to date the TAC has not received any other request for consideration or provided recommendations for funding pilot or demonstration projects.

### ***Challenges and Findings***

The primary function of the TAC is to provide recommendations to the Director of Health on the approval or disapproval of systems and components of sewage treatment systems that differ in design or function from those authorized in the administrative code. The statewide interim rules recognize one national standard for the performance of pretreatment components which is the National Sanitation Foundation (NSF) Standard 40, which tests specifically for biochemical oxygen demand (BOD) and total suspended solids (TSS). Other programs such as the General NPDES permit required for replacement discharging sewage treatment systems have effluent standards for other parameters such as ammonia, fecal coliform and *E. coli*, and dissolved oxygen. Systems may also demonstrate that they reduce fecal coliform numbers to obtain soil depth credits that allow for a reduction in the thickness of soil needed to treat the rest of the contaminants in the sewage. NSF and other independent third party testing entities offer services for testing these sewage effluent parameters, and often manufacturers use these services to demonstrate the performance of their systems over a wide range of operating conditions such as waste strength, load and temperature (climate). Testing of components can be made over periods of weeks or months, and the length of testing is considered when determining the sustained performance of a treatment component.

Evaluation of third party testing data is generally fairly straightforward; however, components are often tested at different times for different parameters and in different configurations than those proposed in an application for approval. Further, some components do not go through third party testing, but may be proposed for approval based on testing of existing systems at homes in Ohio or other states, testing by academic institutions or individual proprietors. All of these variables lend a degree of complexity to the review process, and subsequently, the TAC has gone through an evolutionary process regarding the completeness and value of data in the review of and recommendations for approval/disapproval of products.

During 2007, the majority of the applications provided to the TAC were for manufactured pretreatment components that treated the sewage effluent either prior to discharge to a soil absorption unit or surface water. One application was the exception, with a request to consider a specifically designed pipe and sand bed configuration used for soil absorption as a pretreatment component. This review presented a challenge in that the TAC was accustomed to reviewing pretreatment components based on effluent standards achieved at the end of a mechanical device. The TAC had much discussion on how to proceed with the review and determined that the component would have to be evaluated with consideration of two factors - both *the treatment achieved* at the bottom of the pipe/sand unit, and since the component also served as the soil absorption for the systems, how it achieved *proper hydraulic loading* to the soils. The applicant was able to demonstrate treating achieved through third party testing, but the data regarding hydraulic loading is still pending. Due to this application, the TAC was able to recognize the alternative approach needed, shift its perspective on system/component review and provide guidance to the applicant on information needed for review. From this process, the TAC recognized the need to regularly perform a review of the standards and criteria, the application form content and data requirements.

The TAC members believe their role to be primarily technical in nature, but during the course of discussion related to some application reviews, issues that are more policy in nature have surfaced. Policy decisions (i.e. economics, relative risk) can inform and influence technical decisions to an extent. The TAC is provided a certain level of defense against making a policy decision in that it solely provides a recommendation for approval or disapproval of a product to the Director, and subsequently the Director must make a decision regarding the approval or disapproval of said product in the context of both technical information and policy decisions.

Many of the discussions surrounding an application for approval of a product have also led to very productive and useful discussions of key issues such as operation and maintenance requirements, and the value and use of system remediation components. The TAC clearly recognizes that the products that have been reviewed and recommended for approval are engineered, mechanical components that will require regular maintenance and servicing to prevent catastrophic and/or premature failure of the system and subsequent pollution or public health threats. Therefore, it is imperative that local health districts that issue permits for the installation of these systems, and operation permits for continued use of these systems ensure that service/maintenance contracts are maintained by the system owner. Decision makers should also be aware of the importance of service/maintenance contracts and regular inspections of these

systems to help protect the investment that homeowners are making with new technology systems and to help prevent premature failure.

An overview of these ancillary, but related discussions were recorded in the meeting summaries.

**SEWAGE TREATMENT SYTSEMS  
TECHNICAL ADVISORY COMMITTEE  
2007 ANNUAL REPORT**

**APPENDIX 1**

# Ohio Department of Health

## Standards and Guidelines for Ohio Revised Code Section 3718.04 Review of Sewage Treatment System Products or Components

### Use of these Standards and Guidelines

*In approving or disapproving an application for the use of a sewage treatment system or component of a system that differs in design or function from systems or components of systems the use of which are authorized in the Ohio Administrative Code Chapter 3701-29, the director of health shall use these standards and guidelines required in accordance with ORC 3718.03(F)(1) and shall not approve an application that fails to comply with these standards and guidelines. If the Technical Advisory Committee (TAC) advises the director concerning the application, the director shall consider the advice before approving or disapproving the application. However, if the TAC fails to provide advice, or fails to provide advice within the designated time frame that allows the director to meet the statutory 90 day review period, the director may approve or disapprove the application without considering the advice of the TAC.*

### Standards and Guidelines for Review of STS Components/Systems

In conducting the review of an application in accordance with ORC Section 3718.04, the TAC and the Ohio Department of Health (ODH) shall:

1. Clearly understand the requested approval to assure the proper review of specified component or system performance claims made by the applicant.
2. Evaluate application to assure at least equivalent performance to protect public health and the environment and meet the regulatory intent and standards of Chapter 3701-29 of the Ohio Administrative Code [Sewage Treatment System (STS) Rules].
3. Consider approval or disapproval bearing in mind any implications for future requests for review, and in view of any precedent established by past TAC recommendations or director of health approvals/disapprovals subject to the STS rules in effect January 1, 2007 and/or any related regulatory changes thereafter.
4. Review application information in the context of the following criteria, as applicable:
  - (a) Identify applicable performance standards, treatment processes, scientific and/or engineering principles and other relevant criteria pertinent to the review.
  - (b) Assess if there is sufficient theory, applied research, and technical information to explain the component or system and to substantiate specific claims.
  - (c) Consider any limitations on use, operation, or reliability in view of the information provided and the knowledge and experience of the reviewer.
  - (d) Determine if the submitted performance information adequately supports the requested approval (see item 5 following).
  - (e) Review the siting, installation, service, operation and maintenance (O&M) information for the purpose of determining its clarity and thoroughness.
5. Evaluate the credibility and applicability of submitted data or research findings. The TAC and/or the director may reject data or findings that are determined to be unreliable or not applicable for the

purposes of the requested review. The evaluation of data and findings shall include, but is not limited to, the following considerations as applicable:

- (a) Quality of supporting research, testing, sampling and data analysis – replicated studies, peer-reviewed research, high quality field testing, and test center data collected in environmental conditions comparable to Ohio shall be valued more heavily than other types of research reports or publications, regulatory reviews or evaluations, or vendor-developed reports.
  - (b) Methods used in gathering data or conducting research - commonly accepted standards or protocols shall be valued more heavily than that from a protocol or testing process that is not widely accepted. Optimum data and analysis employ *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association or other methods using accepted scientific and statistical methods as appropriate. Optimum data include, as applicable, information regarding strength of influent wastewater, average influent flow rate, peak influent flow rate, replication of events, controls in place during data collection, effluent quality, range of environmental conditions during data collection, operation and maintenance performed during data collection.
  - (c) Qualifications of party or parties conducting the testing or research - research, sampling, evaluation or other data collection and analysis conducted by an independent third party shall be valued more than that conducted by a first party with a stake in the outcome. Third party testing or research is conducted by persons who have no conflict of interest in the outcome of the subject of the evaluation. Optimally the third party would be engaged in the designation of site, equipment, or event to be evaluated among the total population, and would be participating in the chain of custody, collecting, transporting or evaluating the sample and producing the report.
6. Evaluate the need for conditions to be placed on the approval. Any such conditions may relate to requirements for similar systems or components authorized and/or approved in accordance with procedures established under OAC Chapter 3701-29, special circumstances specific to the system or component under review, or other considerations as applicable.

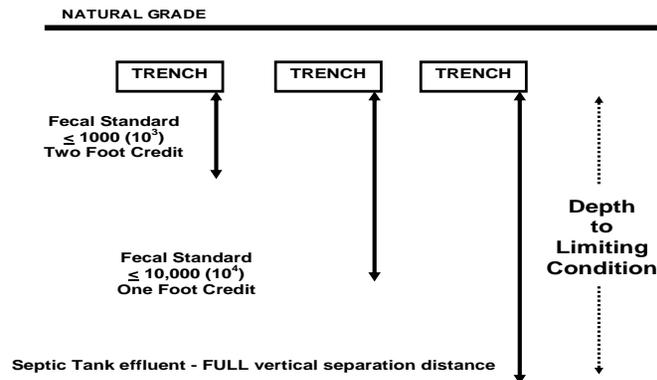
**SEWAGE TREATMENT SYTSEMS  
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**APPENDIX 2**

**OHIO DEPARTMENT OF HEALTH**  
**Pretreatment Component Approvals**  
**and**  
**Operation & Maintenance (O&M) Information**

The Ohio Revised Code (ORC) authorizes the Ohio Department of Health and the Sewage Treatment Technical Advisory Committee (TAC) to approve Sewage Treatment Systems (STS) and components that achieve different levels of sewage treatment. The ODH and TAC approval process is intended to ensure that pretreatment component reliability and effluent quality is achieved and maintained. Effluent quality standards from an STS or a pretreatment component are established through various means. These include the National Pollutant Discharge Elimination System (NPDES) permit requirements as required by the Clean Water Act for discharging systems, any local health district requirements for nutrient reduction (nitrogen and phosphorous), rule provisions related to high strength waste reduction (small flow or commercial systems), and the **following standards applied in advance of effluent distribution to a soil absorption component:**

- o **BOD<sub>5</sub>/TSS Standard** – Compliance with this standard requires that effluent from a pretreatment component meet an average of less than thirty milligrams per liter (mg/L) for five-day biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS) for the purpose of permitting a sizing reduction of the soil absorption area.
- o **Fecal Coliform Standards** – Compliance with the pathogen reduction standards listed below requires that effluent meet a geometric mean of the standard to utilize soil depth credits (a & b) or spray irrigation (c & d) as provided in accordance with soil absorption provisions in rule or as conditions of approval by the director of health. Alternate E.coli standards may also be used to determine compliance if approved by the director of health. Local health districts establish a vertical separation distance (VSD) between the bottom of the infiltrative surface (point where sewage is applied) and seasonal ground water. Statewide interim rules establish a VSD of four feet to bedrock. Pretreatment components that achieve different levels of fecal reduction can be used to reduce the depth of soil needed for treatment of sewage effluent.
  - a) less than or equal to ten thousand colonies/one hundred mL allows for a one foot soil depth credit
  - b) less than or equal to one thousand colonies/one hundred mL allows for a two foot soil depth credit



- c) less than or equal to two hundred colonies/100 mL required for restricted surface application
- d) less than or equal to twenty colonies/one hundred mL required for unrestricted surface application

**Nutrient Reduction** may be required by local health districts for pretreatment components when there is a significant risk of nutrient (nitrogen and phosphorous) contamination from sewage treatment systems to surface or ground water. This may be due to risk factors identified in the site evaluation (such as shallow ground water or fractured bedrock) or risk due to proximity to local, state, or federally recognized nutrient sensitive environments (i.e. protected watersheds).

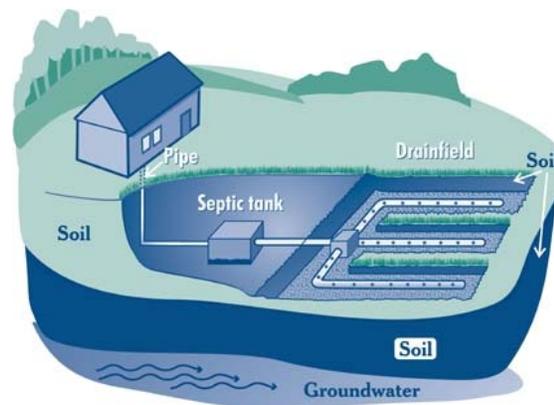
**High Strength Waste Reduction** may be required for a small flow on-site sewage treatment system (SFOSTS) in compliance with Ohio Administrative Code Rule 3701-29-21. SFOSTS treat less than 1,000 gallons per day such as small business and commercial facilities. These facilities may produce levels of organic materials (BOD<sub>5</sub>) and solids higher than that of household systems. While household systems are assumed to be receiving normal domestic strength wastewater, there may be occasions where a household system would require pretreatment for reduction of BOD<sub>5</sub>/TSS.

**NPDES Effluent Limitations** are subject to permit requirements established by the Director of the Ohio Environmental Protection Agency (OEPA). Link to the household sewage treatment system (HSTS) General NPDES Permit and the related OEPA web site at <http://www.odh.ohio.gov/odhPrograms/eh/sewage/sewrules.aspx>

## SOIL ABSORPTION SYSTEMS

Traditional septic tank leach line soil absorption systems as shown here in the picture on the right are not suitable for all sites in Ohio. At times, a pretreatment component may be used to reduce the area needed for a system (BOD<sub>5</sub>/TSS standard) or to address shallow depth to a limiting condition (fecal coliform standards). In such cases a pretreatment component may replace the septic tank or it may be added following the septic tank before the soil absorption component.

The use of the approved components listed here requires at least one foot of in situ (natural undisturbed soil) beneath the soil absorption component and above the limiting condition in the soil. Local health districts and other ODH approvals may have additional requirements for soil absorption components following pretreatment.



## OPERATION & MAINTENANCE

**The owner of a pretreatment component is required to maintain an operation and maintenance (O&M) service contract.**

The O&M and monitoring of the entire system shall be conducted at least annually, or more often as required by the manufacturer of any component. Local health districts shall require a service contract as a condition of an operation permit issued for a system utilizing a pretreatment component approved by the director of health.

**Owners and designers should consider the following for pretreatment component selection and STS design:**

- O&M requirements and availability of qualified service providers
- Manufacturer requirements for use of related components or replacement parts
- Effects of seasonal use, wastewater quality and quantity, or other factors that may impact performance
- Benefits of additional treatment or flow control in advance of the pretreatment component based on manufacturer recommendations or waste characteristics (i.e. trash trap, septic tank, dosing tank)
- Any added design features for required sampling capacity after pretreatment component and before and after any disinfection unit.

**Owners and designers are encouraged to contact manufacturers or suppliers to obtain detailed product information especially when pretreatment components are listed for nutrient reduction or high strength waste reduction.**

**APPROVAL & COMPLIANCE**

The following pretreatment components were approved in accordance with provisions of Ohio Revised Code 3718.04 and/or the provisions of Ohio Administrative Code Chapter 3701-29 in effect at the time of the ODH approval. Each company and their approved components and systems are listed on the left column of the table. The level of treatment that each component or system listed is approved for is marked with an "X" in the corresponding treatment level column. Listed pretreatment components may only be used as designated in compliance with the terms and conditions of approval. These pretreatment components are subject to ODH review for compliance with the conditions of approval and compliance with law and rules. A review may be conducted when there is evidence of noncompliance with approval conditions or for other reasons deemed necessary to assure compliance. Upon review, if there is a determination of noncompliance, a pretreatment component may be removed from the approved list in accordance with Chapter 119 of the Ohio Revised Code.

Please note that systems approved for use as a discharging system meeting the General NPDES permit effluent limits are designated as either meeting the limits for discharge to all waters in Ohio **except Lake Erie (1)**, or designated as meeting the limits for discharge to all waters **including Lake Erie (2)**.

Systems approved for meeting the General NPDES permit effluent limits require a failsafe mechanism that either shuts down the system in the event of system malfunction, or communicates system malfunctions by remote telemetry to a service provider. The companies and systems listed below provided operation and maintenance instructions that indicate the requirements and functionality of the failsafe mechanism and can be obtained through the direct links below. System designers, installers and owners must be aware of and comply with the failsafe installation requirements, and related operation and maintenance.

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K	≤ 1K	≤ 200	≤ 20			
				1 foot credit	2 feet credit	Spray				

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K 1 foot credit	≤ 1K 2 feet credit	≤ 200	≤ 20			
						Spray				
Bio-Microbics, Inc. 8450 Cole Parkway Shawnee, KS 66227 800-753-3278										
<b>MicroFAST Models</b>	6-25-07		X					X	<a href="#">FAST O&amp;M</a>	
<b>MicroFast + Salcor 3G UV Disinfection</b>	6-25-07		X	X	X	X		X	<a href="#">Salcor UV O&amp;M</a>	
<b>RetroFAST Models</b>	6-25-07							X		
Bord na Mona Env. Products US P.O. Box 77457 Greensboro, NC 27417 800-787-2356										
<b>Puraflo Peat Biofilter</b>	2-20-07		X	X					<a href="#">Puraflo O&amp;M</a>	
Consolidated Treatment Systems, Inc. 1501 Commerce Center Drive Franklin, OH 45005 937-746-2727										
<b>Enviro-Guard ENV or ENV-M (modular)</b>	2-26-07		X						<a href="#">Env-Grd O&amp;M</a>	
<b>Enviro-Guard ENV or ENV-M + Salcor 3G UV Disinfection</b>	2-26-07		X	X	X	X			<a href="#">Env-Grd Modular</a>	
<b>Enviro-Guard ENV or ENV-M + Salcor 3G UV Disinfection + Re-Aeration Device</b>	3-23-07	X(2)	X	X	X	X			<a href="#">Env-Grd NPDES</a>	
<b>Multi-Flo FTB Models</b>	2-26-07		X						<a href="#">Multi-Flo O&amp;M</a>	
<b>Nayadic M Models</b>	2-26-07		X						<a href="#">Nayadic O&amp;M</a>	

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K 1 foot credit	≤ 1K 2 feet credit	≤ 200	≤ 20			
						Spray				
Ecological Tanks, Inc. 2247 Hwy. 151 North Downsville, LA 71234 318-644-0397  <b>Aqua Aire – AA Models</b>  <b>Aqua Safe – AS Models</b>  <b>Aqua Safe AS + Disinfectant            UV + Re-aeration +            Telemetry or Pump lock</b>	 3-07-07 6-20-07  5-11-07  10-29-07	   <b>X(1)</b>	 X  X  X	 X  X	 X  X	    	    	 <a href="#">Aqua Aire O&amp;M</a> <a href="#">AquaSafe O&amp;M</a> <a href="#">Telemetry failsafe</a>  <a href="#">Pump failsafe</a>  <a href="#">UV Maint. &amp; Service</a>		
Eco-Pure, Inc. 2725 Prince Street Fort Myers, FL 33931 888-999-0939  <b>300 Series Peat Moss Filter</b>	 6-25-07		 X					 <a href="#">Eco-Pure O&amp;M</a>		
Delta Environmental Products P.O. Box 969 Denham Springs, LA 70726 800-219-9183  <b>DF Series Aerobic Treatment Unit (ATU)</b>  <b>DF Series ATU + Salcor 3G UV Disinfection</b>  <b>DF Series ATU + Salcor 3G UV Disinfection + Re-aeration + Telemetry or Pump lock</b>	 4-09-07  4-09-07  12-01-07	   <b>X(1)</b>	 X  X	 X  X	 X  X	 X  X	    	 <a href="#">Delta O&amp;M</a> <a href="#">Pump failsafe 1</a>  <a href="#">Pump failsafe 2</a>  <a href="#">Pump failsafe 3</a>  <a href="#">Pump failsafe operation</a>  <a href="#">Salcor UV O&amp;M</a>		

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K 1 foot credit	≤ 1K 2 feet credit	≤ 200	≤ 20			
						Spray				
Jet, Inc. 750 Alpha Drive Cleveland, OH 44143 440-461-2000										
<b>1500 Series BAT Media Plants</b>	3-06-07		X						<a href="#">Jet BAT O&amp;M</a>	
<b>1500 Series BAT Media Plants + Salcor 3G UV Disinfection</b>	10-26-07		X	X	X	X			<a href="#">Jet NPDES O&amp;M</a>	
<b>1500 Series BAT Media Plants + Salcor 3G UV Disinfection + Re-aeration + Telemetry or Pump lock</b>	10-26-07	X(1)	X	X	X	X			<a href="#">Pump failsafe</a> <a href="#">Telemetry failsafe</a>	
NORWECO, Inc. 220 Republic Street Norwalk, OH 44857 419-668-4471										
<b>Singlair Models 960 or TNT</b>	3-07-07		X	X					<a href="#">Singlair O&amp;M</a>	
<b>Singlair Models 960 or TNT + UV Disinfection</b>	3-07-07		X	X	X	X			<a href="#">Singlair UV</a>	
<b>Singlair Model TNT</b>	3-07-07		X	X			X		<a href="#">TNT NPDES</a>	
<b>Singlair Model TNT + UV Disinfection + Re-aeration + Service Pro/Telemetry</b>	5-17-07	X(2)	X	X	X	X	X		<a href="#">Pump failsafe</a> <a href="#">Telemetry failsafe-Service Pro</a>	

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K 1 foot credit	≤ 1K 2 feet credit	≤ 200	≤ 20			
						Spray				
Orenco Systems, Inc. 814 Airway Avenue Sutherlin, OR 97470 800-348-9843  <b>AdvanTex AX20</b>	2-27-07		X						<a href="#">AX20 O&amp;M</a>	
<b>AdvanTex AX20 + Salcor 3G UV Disinfection</b>	2-27-07		X	X	X	X	X		<a href="#">Salcor O&amp;M</a>	
<b>AdvanTex AX20 + Salcor 3G UV + Pump Discharge + system fail pump lock-out</b>	2-27-07	X(2)	X	X	X	X	X		<a href="#">AX20 NPDES</a>	
Quanics, Inc. P.O. Box 1520 Crestwood, KY 40014 877-782-6427  <b>SCAT Biofilters (AeroCell media or Bio-COIR media)</b>	4-10-07		X					X	<a href="#">SCAT O&amp;M</a>	
SeptiTech, Inc. 70 Commercial Street, Suite 3 Lewiston, ME 04240 207-333-6940  <b>SeptiTech (in specified plastic or concrete septic tank)</b>	4-03-07 6-25-07		X	X	X			X	<a href="#">SeptiTech O&amp;M</a>	
Tex-Aire, Inc. 1076 Pearl Drive Bossier City, LA 71111 318-752-3700  <b>Mighty Mac</b>	5-11-07		X						<a href="#">Mighty Mac O&amp;M</a>	

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K 1 foot credit	≤ 1K 2 feet credit	≤ 200	≤ 20			
						Spray				
Hoot Aerobic Systems 2885 Highway 14 E. Lake Charles, LA 70607 888-878-HOOT(4668)  <b>Hoot H-500A Model Series  (600, 750, 1000)</b>  <b>Hoot H-500-NPDES Series  (750 and 1000)</b>	10-26-07 1-08-08 1-18-08  2-28-08	    <b>X(1)</b>	  <b>X</b>  <b>X</b>	  <b>X</b>  <b>X</b>					    <a href="#">Hoot O&amp;M</a>    <a href="#">Hoot NPDES O&amp;M</a>	
Zoeller Pump Company 3649 Cane Run Road Louisville, KY 40383 859-433-0036  <b>Fusion Series Treatment  System ZF Models (450,  600, 800)</b>	11-13-07		    <b>X</b>							

**SEWAGE TREATMENT SYTSEMS  
TECHNICAL ADVISORY COMMITTEE  
2007 ANNUAL REPORT**

**APPENDIX 3**

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – March 13, 2007

Time: 10:00 AM to 2:00 PM

Location: Ohio Department of Natural Resources, 2040 Morse Road, Columbus

TAC Members in Attendance (8 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

ODNR Soil Scientist – Tim Gerber

General Public – Stephen Hovancsek, retired PE/PS

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/Service Provider – Todd Supeck, Supeck Septic Services

Academic – Dr. Mark Tumeo, Cleveland State University

OEPA DSW Engineer – Mark Stump

EXCUSED: Manufacturer representatives - Dick Bachelder, PSA, Inc. and Mike Price, Norweco, Inc., OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

Guests: Chris Schraff, Porter, Wright, Morris and Arthur, LLP, Mehmet A. Gencer, Paul Zakriski, and Jack Morabito, IMET Corporation.

Other ODH participants: Dusten Gurney and Amy Wood

Agenda Review: Introductions were made of all participants and the meeting agenda was approved by the TAC members.

IMET Corporation Presentation: Representatives from IMET Corporation provided a powerpoint presentation with handouts on the IMET Fixed Media Bioreactor products. Discussion occurred on the product specifications, product costs, national and international installations and product performance. The TAC continued with questions and discussions regarding the product, and provided suggestions to the IMET representatives on the types of testing and data that should be collected to ensure product performance and reliability. The TAC recommended that IMET identify a specific set of testing configurations and environments and proceed with testing and data analysis, and then come back to the TAC with research and design information for review. Recommendations for statistical sampling and analysis procedures were also discussed. The next steps for IMET were specified as 1. identification of system configuration(s); 2. preparation of a study/field testing plan; 3. identifying and securing funding sources (suggestions were provided); 4. conduct study/field testing; 5. prepare results and report to TAC.

Meeting Minutes: The TAC members reviewed the August 8, 2006 meeting minutes. A motion was made by Mark Tumeo for approval of the August 8, 2006 TAC meeting minutes. The motion was seconded by Ray Saporito. All TAC members voted in favor of approving the

minutes. Rebecca signed the minutes and the approved minutes were provided to Mark Stump, TAC secretary, for his signature.

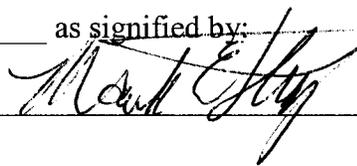
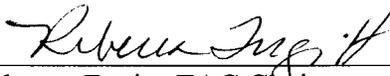
STS Program Updates: Rebecca Fugitt led a discussion providing an update on the STS program activities and stepped through the STS website and information. The department will be modifying the STS website to include a specific homeowner page with first listing on the initial STS web page. The TAC members commented that the homeowner web information should include the range of costs of systems and sample system configuration and information, the processes involved, information on securing the services of a soil scientist and the costs, explanation on the design process and range of costs. Information should be provided on the factors that affect the cost of a system. The TAC also recommended that the department conduct a survey of system costs. The TAC also recommended that a direct link to the listing of local health districts and the OTCO contractors that have taken the STS exam be provided on the homeowner web page. An update was provided on the products that have been reviewed and approved by ODH (pretreatment components and drip distribution assurances) and posted on the website.

Todd Supeck expressed concerns that some manufacturers were limiting training for service providers and limiting the number of qualified service providers for their products in the state. He commented that some product training was also very expensive and that we need to ask manufacturers to identify their annual product training update requirements and costs.

Next Meetings: The TAC reconfirmed that future meetings would be held on the second Tuesday of each month with the remaining meetings for 2007 scheduled for April 10, May 8, June 12, July 10, August 14, September 11, October 9, November 6 and December 11. The meeting location will continue to be at the Ohio Department of Natural Resources complex, with the specific meeting room to be announced with the meeting agenda.

Approved on 5-8-07

as signified by:



Rebecca Fugitt, TAC Chairperson

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – May 8, 2007

Time: 10:00 AM to 2:45 PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (10 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Academic – Dr. Mark Tumeo, Cleveland State University

General Public – Stephen Hovancsek, retired PE/PS

Installer/Service Provider – Todd Supeck, Supeck Septic Services

Manufacturer Representative - Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

EXCUSED: Manufacturer Representative - Dick Bachelder, PSA, Inc.

TAC Applicants/Presenters:

Eco-Pure - Len Moore

SeptiTech – Dan Ostrye and Don Rousseau

Guests: Jim Whitcraft and Mark Davis of Preferred Pump, Trent Lydic of Jet, Inc., and Steve Branz of Bord na Mona.

Other ODH participants: Jean Caudill and Amy Wood

Agenda Review: Introductions were made by all in attendance and the meeting agenda was approved by the TAC members with no modifications.

Meeting Minutes: The TAC members reviewed the March 13, 2007 meeting minutes. The TAC requested that the chair send a follow-up letter to the IMET Corporation regarding outcomes of the March 13<sup>th</sup> meeting. A motion was made by Todd Supeck for approval of the March 13, 2007 TAC meeting minutes. The motion was seconded by Tim Gerber. All TAC members present voted in favor of approving the minutes. Rebecca Fugitt signed the minutes and the approved minutes were provided to Mark Stump, TAC secretary, for his signature.

Presentations by TAC Applicants:

1. Len More of Eco-Pure provided a detailed PowerPoint presentation on the 300 Series Peat Moss Filter followed by questions from TAC members. The applicant has requested approval for the BOD<sub>5</sub>/TSS and 10K fecal standards. The TAC requested that ODH provide comparison information on the loading rates and fecal reduction data for Bord na Mona's PuraFlo peat biofilter that was already approved through the ODH review process in

accordance with Ohio Administrative Code (OAC) 3701-29-12(B). The representative of Eco-Pure was asked to provide a list of states where the Eco-Pure systems are installed and the approximate number of systems installed per state. A motion was made by Mike Price and seconded by Ray Saporito, that pending the receipt of the requested information, the TAC would take action on the Eco-Pure application at the next TAC meeting in June. All TAC members present voted in favor of the motion.

2. Dan Ostrye and Don Rousseau of SeptiTech introduced their Ohio distributors from Preferred Pump and provided a PowerPoint presentation. It was noted that the SeptiTech unit has an approval in accordance with OAC 3701-29-12(B) for BOD<sub>5</sub>/TSS and nutrient reduction. The applicant has requested approval for the four fecal reduction standards and provided additional application information for approval for NPDES effluent limitations. The TAC requested that ODH provide the ETV data from the review process in accordance with OAC 3701-29-12(B). The representatives of SeptiTech were asked to provide a list of states where the SeptiTech systems are installed and the approximate number of systems installed per state. A motion was made by Mark Tumeo and seconded by Ray Saporito, that pending the receipt of the requested information, the TAC would take action on the SeptiTech application at the next TAC meeting in June. All TAC members present voted in favor of the motion.

#### TAC Technology Support:

Martin Tremmel and Rebecca Fugitt provided TAC members with perspectives on an April 4, 2007 letter from Senator Tom Niehaus to the TAC concerning the need for increased approvals of STS technologies. TAC members were also updated regarding legislation on the STS law and rules, including recent activities related to the biennial budget bill. Following discussion among the TAC members, motions were made to adopt three resolutions:

Motion 1 – Resolution 2007-05-08-01: *The Sewage Treatment System Technical Advisory Committee has reviewed and recommends approval of the pretreatment components, and related operation and maintenance as identified in the attached appendix. Such action shall be put in the form of a resolution to be approved by the committee by fax or email.* The noted appendix is the table of pretreatment components listed on the ODH web site. Motion made by Mark Tumeo, seconded by Stephen Hovancsek, and all TAC members present voted in favor.

Motion 2 – Resolution 2007-05-08-02: *The Sewage Treatment System Technical Advisory Committee has reviewed and recommends approval of alternative aggregate, chamber and gravelless products for sewage treatment systems as identified in the attached appendix. Such action shall be put in the form of a resolution to be approved by the committee by fax or email.* The noted appendix would be a listing prepared by ODH of previously approved products and those recognized as acceptable in OAC Chapter 3701-29. Motion made by Mark Tumeo, seconded by Stephen Hovancsek, and all TAC members present voted in favor.

Motion 3 – Resolution 2007-05-08-03: *The Sewage Treatment System Technical Advisory Committee recommends that the Department of Health review and consider implementation of stepwise or other creative approaches to allow incremental repair and/or alteration of existing systems that are experiencing initial signs of failure or have experienced failure, with the goal of*

*abating the nuisance in a cost effective manner.* Motion made by Mark Tumeo, seconded by Ray Saporito, and all TAC members present voted in favor.

STS Program Updates: Given the added time spent on the resolutions, Rebecca Fugitt provided a very brief update on STS program activities prior to adjourning the meeting.

Next Meetings: The TAC reconfirmed that future meetings would be held on the second Tuesday of each month with the remaining meetings for 2007 scheduled for June 12, July 10, August 14, September 11, October 9, November 6 and December 11. The meeting location will continue to be at the Ohio Department of Natural Resources complex, with the specific meeting room to be announced with the meeting agenda.

Approved on 6-12-07 as signified by:  
Rebecca Fugitt Rebecca Fugitt, TAC Chairperson  
Mark Stump Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – June 12, 2007

Time: 10:00 AM to 2:50 PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (9 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Academic – Dr. Mark Tumeo, Cleveland State University

Manufacturer Representative - Mike Price, Norweco, Inc. & Dick Bachelder, PSA, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

EXCUSED: General Public – Stephen Hovancsek, retired PE/PS

Installer/Service Provider – Todd Supeck, Supeck Septic Services

Guests: Dan Ostrye of SeptiTech, Jim Whitcraft of Preferred Pump, Trent Lydic of Jet, Inc., Mary Clark of Premier Tech, and Steve Branz of Bord na Mona.

Other ODH participants: Jean Caudill

Agenda Review: Introductions were made by all in attendance and the meeting agenda was approved by the TAC members with a change in the order of discussion of applications to accommodate the flight schedule for Dan Ostrye of SeptiTech.

Meeting Minutes: The TAC members reviewed the May 8, 2007 meeting minutes. A motion was made by Ray Saporito for approval of the May 8, 2007 TAC meeting minutes. The motion was seconded by Tim Gerber. All TAC members present voted in favor of approving the minutes. Rebecca Fugitt signed the minutes and the approved minutes were provided to Mark Stump, TAC secretary, for his signature.

Application Reviews:

Prior to addressing the two applications presented at the May meeting, TAC members discussed a law interpretation issue raised by Mike Price in a 6-7-07 E-mail to TAC members and the 6-8-07 E-mail response by Mark Tumeo on which all TAC members were copied. The issue concerned the role of the TAC and language in ORC 3718.04(A) regarding “approval for the use of a sewage treatment system or component of a system in this state that differs in design or function from systems or components the use of which is authorized in rules ...”. The concern was whether the TAC could make recommendations for approval on applications that address noncompliance with OAC 3701-29-12(B)(6) requiring that effluent quality data be provided

through an ANSI-accredited third party or ETV water quality protection center. It was established that both ODH legal counsel and the standards and guidelines adopted by the Director of Health previously addressed this issue in the affirmative and that the TAC members should proceed on the applications before them for review.

SeptiTech Application - Dan Ostrye of SeptiTech was present to address any questions from the TAC. The applicant requested approval for the four fecal coliform standards in OAC 3701-29-12(A)(2)(a) through (d) and for the effluent limitations in the HSTS General NPDES Permit. The application was reviewed in three parts based on the targeted effluent quality standards and the amount of data provided for the SeptiTech system with and without UV disinfection. Three approval/disapproval recommendations were made by the TAC:

1. The first motion was made by Mark Tumeo and seconded by Martin Tremmel: *The TAC recommends approval of the Non-UV SeptiTech Advanced Wastewater Treatment System for soil depth credits related to the <10,000 and <1000 fecal col/mL standards in OAC 3701-29-12(A)(2)(a) and (b) as presented in the application.* A roll call vote was called by the chairperson, with seven members voting in favor and one member voting against the motion.
2. The second motion was made by Martin Tremmel and seconded by Ray Saporito: *The TAC recommends denial of the SeptiTech with UV disinfection unit for OAC 3701-29-12(A)(2)(c) and (d) standards as presented in the application.* TAC concerns included the limited amount of data, lack of influent and flow characterization, etc. A roll call vote was called by the chairperson and all TAC members present voted in favor of the motion.
3. The third motion was made by Mark Tumeo and seconded by Mark Stump: *The TAC recommends denial of the SeptiTech with UV disinfection unit for discharge under the HSTS General NPDES Permit effluent limitations as presented in the application.* TAC concerns included those noted for the second motion for denial and the absence of full data sets for all NPDES effluent limitations from individual units. A roll call vote was called by the chairperson and all TAC members present voted in favor of the motion.

Eco-Pure Application – There was no Eco-Pure representative in attendance. The applicant had requested approval for the BOD<sub>5</sub>/TSS standard in OAC 3701-29-12(A)(1) and the <10,000 fecal coliform standard in OAC 3701-29-12(A)(2)(a). The application was reviewed in two parts based on the separate effluent quality standards. Two approval/disapproval recommendations were made by the TAC:

1. The first motion was made by Mark Tumeo and seconded by Tim Gerber: *The TAC recommends approval of the Eco-Pure 300 Series Peat Moss Filter for the OAC 3701-29-12(A)(1)BOD<sub>5</sub>/TSS standard as submitted in the application.* A roll call vote was called by the chairperson, with seven members voting in favor and one member voting against the motion.
2. The second motion was made by Mark Tumeo and seconded by Ray Saporito: *The TAC recommends denial of the Eco-Pure 300 Series Peat Moss Filter for the OAC 3701-29-12(A)(2)(a) fecal coliform reduction standard as submitted in the application.* TAC members noted that the data provided did not meet the standard. A roll call vote was called by the chairperson and all TAC members present voted in favor of the motion.

Review of Renovation and Disinfection Products:

Rebecca Fugitt noted that the IMET Study Plan was just forward to the TAC by E-mail on the Friday before the meeting. TAC members tabled a discussion of the plan due to inadequate review time. A broader discussion was held on the listed agenda items of (7) renovation products and whether these were considered as STS components, (8) TAC review of stand alone disinfection products versus their review only within the framework of a treatment train, and (9) the information provided on a Sewage Nuisance Abatement Remediation Plan (SNARP) program being implemented by the Clermont County General Health District. It was noted that there may need to be changes to the ORC 3718.04 Review application format to accommodate component versus system reviews by the TAC, and that ODH should review the application documents and suggest changes for TAC consideration.

STS Program Updates: The TAC members discussed the biennial Budget Bill and the House and Senate amendments that affect the STS law and rules. The Senate amendments include a proposal that would change the ORC 3718.03 language governing the TAC. Martin Tremmel requested assistance from TAC members on drafting language setting STS treatment criteria that could be considered during the Conference Committee final consideration of the Budget Bill.

Next Meetings: Continuing with the second Tuesday of each month, the next TAC meeting was confirmed for July 10, 2007. The meeting location will again be the Ohio Department of Natural Resources complex, with the specific meeting room to be announced with the meeting agenda.

Approved on 7-10-07 as signified by:  
Rebecca Fugitt Mark Stump  
Rebecca Fugitt, TAC Chairperson Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – July 10, 2007

Time: 10:00 AM to 3:00 PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (7 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

EXCUSED: Academic – Dr. Mark Tumeo, Cleveland State University

Installer/Service Provider – Todd Supeck, Supeck Septic Services

Manufacturer Representative - Dick Bachelder, PSA, Inc.

ABSENT: General Public – Stephen Hovancsek, retired PE/PS

Guests: Craig Martin, Terry Fischer, and Trent Lydic of Jet, Inc.; Steve Branz of Bord na Mona.

Other ODH participants: Lance Himes, Jean Caudill, Amy Wood, and Dusty Gurney

Agenda Review: Introductions were made by all in attendance and the meeting agenda was approved by the TAC members.

Meeting Minutes: The TAC members reviewed the June 12, 2007 meeting minutes. A motion was made by Mike Price for approval of the June 12, 2007 TAC meeting minutes. The motion was seconded by Ray Saporito. All TAC members present voted in favor of approving the minutes. Rebecca Fugitt signed the minutes and the approved minutes were provided to Mark Stump, TAC secretary, for his signature.

Eco-Pure and SeptiTech approval updates: TAC members were informed of the final approvals granted by the Director of Health following the recommendations of the TAC for the Eco-Pure and SeptiTech systems. The approved products are listed to the ODH web site as follows:

- **Eco-Pure 300 Series Peat Moss Biofilter**  
< 30 mg/L BOD<sub>5</sub>/TSS standard for soil absorption system sizing reduction
- **SeptiTech Advanced Wastewater Treatment System**  
≤ 10,000 fecal coliform colonies/100 mL for one foot soil depth credit  
≤ 1000 fecal coliform colonies/100 mL for two foot soil depth credit

The Eco-Pure representative subsequently made an e-mail request for further consideration on approval for the fecal coliform standards with use of a UV disinfection device. Since there was no data available for effluent from an Eco-Pure/UV treatment train, this was not considered by the TAC. It was noted that if a UV disinfection unit were to be submitted with influent specifications for a stand alone TAC review, other manufacturers of approved pretreatment components could use an approved UV unit to meet applicable fecal coliform standards.

Reappointment of TAC members with terms expiring July 21, 2007: The following three members were reappointed for three year terms and received letters from the Director of Health.

- Manufacturer Representative - Dick Bachelder, PSA, Inc.
- OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District
- AOHC Health Commissioner – Ray Saporito, Ashtabula County

These terms will expire on July 21, 2010.

Am. Sub. HB 119 (Budget Bill) impact on TAC members and functions: Lance Himes, ODH Assistant Counsel, and Rebecca Fugitt reviewed the budget bill provisions that take effect 9-28-07 related to expanded TAC responsibilities and changes to the TAC member appointment process. It was noted that systems and components approved since January 1, 2007 would remain in place and that future request for approvals of systems and components that differ in design or function from systems or components the use of which is authorized in Ohio Administrative Code Chapter 3701-29 would be submitted to the TAC for consideration in accordance with legislative intent. The TAC members were also updated on the sewage treatment system rule changes effective 7-2-07, action to be taken by the Public Health Council on 7-25-07, and other budget bill provisions related to the formation of a study commission to address changes to law and rules for sewage treatment systems. TAC members discussed the implications and impacts resulting from the budget bill provisions.

Modifications to TAC application materials and standards & guidelines: TAC application materials were generally not impacted by the rule changes due to references to Ohio Revised Code 3701.04 versus specific Ohio Administrative Code (OAC) rule language. Addition of references or a listing of applicable effluent standards is needed, since many standards were previously listed in rescinded OAC 3701-29-12(A). It was noted that the pretreatment component approval listing on the ODH web site also needed to be updated accordingly. TAC members agreed that, once updated, the introductory language for the web list should be sent to the TAC to consider the use of similar language in updating application materials.

Mound with pressure distribution and shallow leaching trenches – request for TAC approval: TAC members had received in advance of the meeting a draft document for special device approval for the statewide use of sand mounds with pressure distribution. The special device approval process is in accordance with the provisions in recently adopted interim OAC Rule 3701-29-20 (C). There was discussion of the need for such approval to allow for the continued use of mound systems. TAC members provided comment on the draft and took action to expedite the approval process. A motion was made by Martin Tremmel and seconded by Ralph Benson to recommend that the Director of Health approve the use of the special device approval for sand mounds with pressure distribution pending TAC review of the revised document. All

TAC members present voted in favor of the motion. In recognition of a similar need for a special device approval to allow for the statewide use of shallow leaching trenches, the TAC took action to support the development of a special device proposal for that purpose. A second motion was made by Mike Price and seconded by Ray Saporito to recommend that the Director of Health approve the use of a special device approval for shallow leaching trenches pending TAC review of a draft document. All TAC members present voted in favor of the second motion. Finally, there was discussion on whether a special device approval was needed for use of a subsurface sand filter in advance of reduced sized leaching trenches. Ray Saporito agreed to provide more information on the specification and siting conditions for the use of such a system.

Review of Renovation and Disinfection Products: Due to time constraints, there was no discussion of the IMET Study Plan and the Sewage Nuisance Abatement Remediation Plan (SNARP) program being implemented by the Clermont County General Health District.

Next Meeting: Continuing with the second Tuesday of each month, the next TAC meeting was confirmed for August 14, 2007 at 10 AM. The meeting location is changed from the Ohio Department of Natural Resources complex to the nearby Karl Road Branch of the Columbus Metropolitan Library at 5590 Karl Road, Columbus, OH 43229.

Approved on 8-14-07 as signified by:  
Rebecca Fugitt Mark Stump  
Rebecca Fugitt, TAC Chairperson Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – August 14, 2007

Time: 10:00 AM to 2:00 PM

Location: Columbus Metropolitan Library – 5590 Karl Road, Columbus

TAC Members in Attendance (10 of 11 were present):

Academic – Dr. Mark Tumeo, Cleveland State University

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

General Public – Stephen Hovancsek, retired PE/PS

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Dick Bachelder, PSA, Inc. & Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

EXCUSED: Installer/Service Provider – Todd Supeck, Supeck Septic Services

Guests: George E. Johnson, Calvin Locker, Barry Meadows, James and Rene Dye of Ecological Tanks, Inc.; Trent Lydic of Jet, Inc.; Steve Branz of Bord na Mona; Ron Suchecki of Hoot Aerobic.

Other ODH participants: Jean Caudill, Amy Wood, and Dusten Gurney

Agenda Review: Introductions were made by all in attendance and the meeting agenda was approved by the TAC members.

Meeting Minutes: The TAC members reviewed the July 10, 2007 meeting minutes. A minor correction was noted by Ralph Benson. A motion was made and seconded for approval of the corrected July 10, 2007 TAC meeting minutes. TAC members present voted in favor of approving the minutes.

Update on two special device approvals for mounds and alternative leaching trenches: TAC members were informed that the special device approval for “Sand Mounds with Pressure Distribution” was signed by the Director of Health on July 31, 2007. The second special device approval for “Alternative Leaching Trenches” was forwarded for Director approval following revisions based on the comments submitted from TAC members.

ODH review of pretreatment components meeting BOD<sub>5</sub>/TSS standard: Rebecca Fugitt presented an ODH request based on the recently re-adopted Ohio Administrative Code (OAC) Rule 3701-29-08 for aerobic type treatment systems to expedite the review process for manufacturers solely seeking approval for the BOD<sub>5</sub>/TSS sizing reduction with components currently certified in compliance with ANSI/NSF Standard 40. Mark Tumeo made a motion that

the TAC recommend ODH administratively approve pretreatment components meeting current ANSI/NSF Standard 40 certification and ODH application requirements for BOD<sub>5</sub>/TSS sizing reduction without TAC review. Stephen Hovancsek seconded the motion and all TAC members present voted in favor of the motion. The TAC requested that they be updated on those components approved in this manner.

Discussion of drip distribution assurance – special device approval: Rebecca Fugitt requested that the TAC consider a recommendation for special device approval to address ODH review of submitted drip distribution assurances. Given past controversy over the distribution soil depth credit and drip assurance requirements, the TAC tabled this discussion until the next meeting and asked for more information on the justification for the soil depth credit.

Septic Tank (9” versus 12” air gap) - special device approval: Rebecca Fugitt requested that the TAC consider a recommendation for special device approval to address the re-adopted OAC Rule 3701-29-07(G) requirement that “the distance from the flow line to the cover shall be at least twelve inches”. It was noted that many tank manufacturers have adjusted their molds to the 9” air gap that had been allowed under the early 2007 STS rules that were rescinded in July 2007. A motion was made by Mike Price and seconded by Mark Tumeo recommending ODH develop a special device approval allowing a 9 to 12 inch air gap for septic tanks, including in the document applicable industry standards to support the approval. The TAC requested review of a draft septic tank special device document prior to Director approval. All TAC members present voted in favor of the motion.

Presentations by Applicants for ORC 3718.04 Review:

1. Calvin Locker of Ecological Tanks provided a PowerPoint presentation on the Aqua Safe and Aqua Aire units interspersed with questions from TAC members. The applicant requested approval for the 200 and 1000 fecal standards and NPDES for both units. The representatives from Ecological Tanks were asked to provide (1) the NSF report for the UV unit and additional information on influent flow rate and turbidity, and (2) data from other states (and more data if available from Ohio) where the Aqua Safe and Aqua Aire units are installed with the UV disinfection unit. A motion was made by Mark Tumeo and seconded by Ray Saporito, that pending the receipt of the requested information, the TAC would take action on Ecological Tanks’ applications at the next TAC meeting. All TAC members present voted in favor of the motion.
2. Trent Lydic of Jet, Inc. provided a brief PowerPoint presentation followed by questions from TAC members. The applicant requested approval for the 200, 1000, and 10,000 fecal standards for the Jet BAT unit with Salcor 3G UV disinfection. A summary of eight weeks of data was provided with an indication that more data would be forthcoming as testing and analysis continued at the NSF test site. A motion was made by Martin Tremmel and seconded by Stephen Hovancsek, that pending the review of additional data and presentation of the fecal coliform data in monthly geometric mean format, the TAC would take action on the Jet application at the next TAC meeting. All TAC members present voted in favor of the motion.

Modifications to TAC standards & guidelines: The TAC discussed proposed revisions to the standards and guidelines including an appendix listing applicable effluent standards. The TAC requested that a footnote be added to the appendix for clarification on a graphic depicting pathogen reduction soil depth credits. The footnote would clarify that the “vertical separation to limiting conditions is established by local boards of health in compliance with state law and rules”. A motion was made by Stephen Hovancsek and seconded by Dick Bachelder to adopt the appendix to the Standards and Guidelines for ORC 3718.04 Review with the added footnote clarification. There was discussion of whether the guidelines should be revised to require applicants to demonstrate certification in compliance with ANSI/NSF Standard 40 if submitting a pretreatment component and that only ANSI-accredited third party data be accepted for review by the TAC. TAC members made note that this issue had been discussed in the past, and that the TAC was created as a way for products that differ in design and function to be approved for use in Ohio. It was also noted that these products will not always have ANSI accredited third party data and that the TAC had determined in their standards and criteria that differing data sources would carry more weight, credibility, and/or reliability than others. The motion was not amended. A vote was called by the chairperson, with nine members voting in favor and one member voting against the motion.

Future items expected to come before the TAC: Rebecca Fugitt reported on inquiries to ODH on items that may come before the TAC either as applications for review or special device recommendation. These include constructed wetlands, spray irrigation, and the previously discussed subsurface sand filter (SSSF) to leaching. The latter was briefly discussed with an indication that SSSF data is needed and that the issue of watertightness needs to be addressed. It was also noted that an application received for a “Super Septic Tank” would be reviewed for completeness and may come before the TAC at their next meeting.

IMET study plan and the Sewage Nuisance Abatement and Remediation Plan (SNARP): TAC members were asked to submit to the chair by e-mail any comments on the IMET study plan. Ralph Benson was asked to explore the possibility of developing a PowerPoint presentation on the SNARP program to serve as a resource for sharing information with other local health districts in Ohio.

TAC changes and report requirements related to Am. Sub. H.B. 119: Due to the provisions in Section 101.01 of Am. Sub. H.B. 119, the TAC is required to annually “select from among its members a chairperson and a vice-chairperson and a secretary to keep a record of its proceedings” and by “January 1, 2008, provide the household sewage and small flow on-site sewage treatment system study commission created by Am. Sub. H.B. 119 of the 127<sup>th</sup> general assembly with a list of available alternative systems and the estimated cost of each system”. The TAC discussed whether a list of resources that Ralph Benson had provided Rebecca Fugitt by e-mail could be included in a report to the study commission. Rebecca offered to prepare an outline of a proposed report format and references or links to the noted resources for TAC consideration at the next meeting.

Next Meeting: Continuing with the second Tuesday of each month, the next TAC meeting was confirmed for September 11, 2007 at 10 AM. The meeting location will return to the Ohio Department of Natural Resources complex at 2045 Morse Road, Columbus, OH 43229.

Approved on 9-11-07

as signified by:

Rebecca Fugitt  
Rebecca Fugitt, TAC Chairperson

Mark Stump  
Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – September 11, 2007

Time: 10:00 AM to 2:20 PM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (9 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County  
& Martin Tremmel, Union County

General Public – Stephen Hovancsek, retired PE/PS

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representative - Dick Bachelder, PSA, Inc. & Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

EXCUSED: Academic – Dr. Mark Tumeo, Cleveland State University

Installer/Service Provider – Todd Supeck, Supeck Septic Services

Guests: Bob Mayer of American Manufacturing; George E. Johnson, Calvin Locker, Barry Meadows, James and Rene Dye of Ecological Tanks; Trent Lydic of Jet; Steve Branz of Bord na Mona; Ron Suchecki of Hoot Aerobic; Michael Wall and Gary Annick of Hydro-Action; Eric Shields of Quanics; Tony Wallace of Wallace Septic; Ryan and Rod Yoho of Yoho Excavating.

Other ODH participants: Gene Phillips, Jean Caudill, Amy Wood, and Dusten Gurney

Agenda review: Introductions were made by all in attendance. The meeting agenda was approved by the TAC members with the exception of item #6 related to the Super Septic Tank application presentation being delayed until the next meeting.

Follow-up presentation by Ecological Tanks: Calvin Locker provided further sampling data on the Aqua Safe and Aqua Aire units in support of the requested approval for the 200 and 1000 fecal standards and NPDES for both units. The NSF report requested by the TAC for the UV disinfection data was not able to be provided. Jean Caudill of ODH reported that her call to NSF International confirmed that testing had occurred but that data could not be released without permission from the manufacturer of the ATU tested with the UV unit. Mr. Locker discussed the additional information requested by the TAC on influent flow rate and turbidity and provided more detail on the recent additional sampling in Ohio on Aqua Safe and Aqua Aire units installed with the UV disinfection unit. The TAC discussed first party data issues such as the need for sampling protocols and other data quality and quantity issues. The lab reports and service contract information for the tested units were provided to all TAC members. The TAC chair noted that decisions should be made in the context of past recommendations for approval and disapproval, along with consideration of the other criteria established in the *Standards and Guidelines for ORC 3718.04 Review*. After significant further discussion by TAC members and

company representatives, the key issues of continuing concern were noted as (1) the absence of a field testing protocol, (2) the unresolved NSF report data and the absence of third party testing of the actual treatment trains for both units, and (3) the quality and quantity of field sampling conducted by a manufacturer or manufacturer representatives. A motion was made by Stephen Hovancsek and seconded by Ralph Benson to terminate discussion and allow the applicants to return at the next meeting if they chose to do so. A roll call vote was called by the TAC chair, with seven members voting in favor and one member voting against the motion. The chair noted that the deadline for Director of Health action on approval or disapproval was October 30, 2007.

Meeting minutes: The TAC members reviewed the August 14, 2007 meeting minutes. A motion was made by Mike Price for approval of the minutes; seconded by Ray Saporito. All TAC members present voted in favor of approving the minutes. Rebecca Fugitt, TAC Chair, and Mark Stump, TAC secretary, signed the approved minutes. Mark Stump also signed the previously approved minutes from the July 10, 2007 meeting.

Follow-up presentation by Jet and new application for NPDES: Trent Lydic of Jet, Inc. provided additional data from the NSF test site to support the requested approval for the 200, 1000, and 10,000 fecal standards for the Jet BAT unit with Salcor 3G UV disinfection. There was discussion regarding the quantity of data and the need for the data to be provided as an NSF third party report document. A motion was made by Stephen Hovancsek and seconded by Dick Bachelder to terminate the discussion and postpone action pending the provision of the continuing test site data in an NSF report format. A roll call vote was called by the TAC chair, and all TAC members present voted in favor of the motion. Again, the chair noted that the deadline for Director of Health action on approval or disapproval was October 30, 2007.

A second Jet application for ORC 3718.04 review was presented for NPDES approval with the addition of a re-aeration chamber at the end of the Jet BAT unit / Salcor 3G UV treatment train currently being tested by NSF. The new Jet application was introduced in a brief PowerPoint presentation followed by questions from TAC members. It was noted that collection of nutrient and ammonia data was still in progress. A motion was made by Stephen Hovancsek and seconded by Ray Saporito to suspend discussion pending the provision of the continuing test site data in an NSF report format. All TAC members present voted in favor of the motion.

Discussion of drip distribution assurance – special device approval: Jean Caudill provided an overview of the draft special device document that had been sent to TAC members in advance of the meeting. The TAC chair noted that the special device approval could allow ODH to review submitted drip distribution assurances as in the past under the rescinded OAC rule 3701-29-13.3. There was discussion of the stringency of the drip distribution specifications as related to cost and whether the drip assurances review by ODH could be separated from a TAC product review process. TAC member Mike Price and Bob Mayer of American Manufacturing agreed to review the specifications in view of national standards and to report back to the TAC at the next meeting.

Update on special device approvals: The TAC chair noted that in addition to the Sand Mounds with Pressure Distribution approval, the Alternative Leaching Trenches special device approval has been posted to the ODH web site. The Nine to Twelve Inch Air Gap for Septic Tanks special

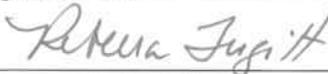
device approval is in process of getting Director of Health sign-off. ODH legal is reviewing OAC Rule 3701-29-08 for aerobic type treatment systems to determine if ODH can implement a review process for ATU manufacturers solely seeking approval for the BOD<sub>5</sub>/TSS sizing reduction with components currently certified in compliance with ANSI/NSF Standard 40. Data and information on subsurface sand filter (SSSF) to leaching and subsurface constructed wetlands to leaching was still being gathered including review of a draft OEPA guidance document on constructed wetlands.

TAC report requirements related to Am. Sub. H.B. 119: Provisions in Am. Sub. H.B. 119, states that the TAC shall by “January 1, 2008, provide the household sewage and small flow on-site sewage treatment system study commission created by Am. Sub. H.B. 119 of the 127<sup>th</sup> general assembly with a list of available alternative systems and the estimated cost of each system” and that the TAC chair shall prepare and submit an annual report to the General Assembly not later than ninety days after the end of the calendar year in accordance with ORC 3718.03(G). The TAC reports, and two ODH reports also required by Am. Sub. H.B. 119, were discussed. The TAC members asked for an update at the next meeting.

Annual selection of TAC chairperson, vice-chairperson, and secretary: Nominations and votes for the TAC officers were held. There was a motion for selection of Rebecca Fugitt to continue as chair by Stephen Hovancsek and seconded by Mike Price, with all TAC members present voting in favor of the motion. A motion for selection of Tim Gerber as vice-chairperson was made by Stephen Hovancsek and seconded by Mike Price, with all TAC members present voting in favor of the motion. Finally, there was a motion for selection of Mark Stump to continue as secretary by Ray Saporito and seconded by Stephen Hovancsek, with all TAC members present voting in favor of the motion.

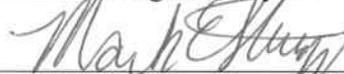
Next Meeting: Continuing with the second Tuesday of each month, the next TAC meeting was confirmed for October 9, 2007 at 10 AM. The meeting will be held in Building I at the Ohio Department of Natural Resources complex at 2045 Morse Road, Columbus, OH 43229.

Approved on 10-9-07



Rebecca Fugitt, TAC Chairperson

as signified by:



Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – October 9, 2007

Time: 10:00 AM to 2:55M

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (7 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representative: Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Academic: Dr. Mark Tumeo, Cleveland State University

EXCUSED:

AOHC Health Commissioners- Martin Tremmel, Union County

General Public – Stephen Hovancsek, retired PE/PS

Manufacturer Representative - Dick Bachelder, PSA, Inc

Resigned: Installer/Service Provider – Todd Supeck, Supeck Septic Services

Guests: Tom Ashton of American Manufacturing; Mike Felton of StreamKey Inc.;

George E. Johnson, Calvin Locker, Barry Meadows, James and Rene Dye of Ecological Tanks;

Trent Lydic and Chris Mandich of Jet; Steve Branz of Bord na Mona; Suzanne Dill of Geoflow;

Other ODH participants: Gene Phillips, Amy Wood, and Dusten Gurney

Agenda review: Introductions were made by all in attendance.

Meeting Minutes: The TAC members reviewed the September 11, 2007 meeting minutes. A motion was made by Dr. Tumeo and seconded by Ray Saporito for approval of the September 11, 2007 meeting minutes. TAC members present voted in favor of approving the minutes as submitted.

Resignation Noted: Rebecca Fugitt announced that Todd Supeck of Supeck Septic Services resigned his position on the board. Rebecca informed the committee that Todd represented the installer/service providers and that position is now appointed by the president of the Senate. The department will send a letter to the Senate President Harris regarding this resignation. ODH has requested that the Ohio On-Site Wastewater Association (OOWA) provide recommendations for replacement of this appointment.

Super Septic Tank Presentation: Pat Hanlon and Kevin Chaffee of Advanced Wastewater Solutions from Indiana were present to introduce their septic tank and its functions. Pat Hanlon described the various chambers/units within this one tank and how the effluent would move through the tank. Mr. Hanlon stated that with the reticulated form material as part of the package, the effluent produced is of pretreatment quality. (1st unit—conventional tank, 2<sup>nd</sup>-upflow filter, 3<sup>rd</sup>-reticulated foam filter to effluent filter at the outlet)

Kevin Chaffee informed the committee on the history of the unit and how it came about with trying to reduce hydrologic/organic loading into the soils. Mr. Chaffee showed slides of average hydrological/organic loading of a normal septic tank. The tank is being tested with effluent from the Sunman, Indiana waste stream and weekly grab samples of effluent exiting the tank were collected at various times.

The Up-flow Anaerobic Sludge Blanket (UASB) process was explained as part of the integral functioning of the tank and the decomposition of solids with additional effluent treatment. Mr. Hanlon and Mr. Chaffee stated that the Super Septic Tank produces higher quality effluent, anaerobic treatment, flow equalization and easy to maintain. The product was presented as a non-mechanical option for repairing a "failing" septic system.

Discussion from the TAC members: Due to lack of third party data, committee members asked about sampling results such as which labs did the results, the sampling protocol, how long was the sampling test, was it grab or composite samples?

Advanced Wastewater Solutions stated that they were only going to request approval for use as a septic tank in Ohio. The company was advised that the requirements for use of a tank in Ohio are a demonstration that the tank is watertight structurally sound to obtain approval.

Any company seeking a sizing reduction or fecal depth credit, must comply with the application requirements, and demonstrate through data collection how the standard has been achieved in accordance with the criteria established by the TAC, and the current rules or special device approvals.

Follow up presentation by Ecological Tanks: Cal Locker from Ecological Tanks informed the TAC members that he was formally withdrawing his submission of the Aqua Aire Unit, but continuing with the request for approval of the Aqua Safe Unit and treatment train.

Cal discussed his previous data submitted for the Aqua Safe Unit. Ecological Tanks is requesting approval of the 1,000 and 200 fecal depth credit and approval for use as a NPDES discharging system.

Cal provided additional data, using 9 systems in Ohio and showed that Cardinal Labs analyzed the results in the last month (since the last TAC meeting) and that 134 data samples had been collected and analyzed by a third party.

Further discussion was held by TAC members on the data presented, the quality and quantity of the data presented, and the timeline for approval or disapproval. Rebecca informed the TAC members that this application must be approved or disapproved by October 30, 2007 or it would be approved as submitted.

Dr. Tumeo made a motion stating "with much regret and disappointment with the process of review by the TAC committee to deny the application of the Aqua Aire Unit for the 200 fecal and 1,000 fecal due to data received prior to the October 9, 2007 meeting does not support the necessary parameters needed. The motion was seconded by Ray Saporito. Upon a roll call vote, all TAC members supported the motion to deny. Motion carried.

Mark Stump made a motion for approval of the Aqua Aire treatment train as submitted with the Disinfectant ultraviolet disinfection unit with re-aeration for use as an NPDES discharging system for discharge to all waters in Ohio except Lake Erie. The motion was seconded by Ray

Saporito. Roll call voted held, six voted for approval and one abstained. Motion for approval carried.

Follow up with the Jet Inc: Trent Lydic of Jet Inc. presented to the TAC committee members additional data from the 1500 BAT series media plant with the Salcor 3GUV and Re-aeration Device. Discussion was held on where the sampling ports were located in the treatment train. Discussion was held on how much data is needed for approval process including the quantity of data needed over a range of variable testing conditions.

Dr. Tumeo Motion made the motion to approve this Jet 1500 BAT series media unit with the Salcor 3GUV for the 10,000, 1,000 and 200 fecal reduction depth credit. The motion was seconded by Tim Gerber. Discussion then followed. Mike Price suggested that the TAC should wait until the end of the Jet's testing with NSF, and then come back for approval to the TAC due to these concerns. Dr. Tumeo expressed that the TAC should have a separate discussion to refine and clarify what is sufficient quantity and quality of data over what range of variables for products to obtain approval. Roll call vote held with 6 yes votes and 1 no vote. Motion carried.

A second motion was made by Mark Stump to approve the Jet 1500 BAT with Salcor 3GUV disinfection and a Re-aeration Device as meeting the requirements for the General NPDES permit discharge standards. The motion was seconded by Mark Tumeo. Discussion was held. Mike Price expressed concern over the lack of 26 weeks of data. Mark Tumeo stated that the TAC cannot set arbitrary limits and the legislature has charged the TAC to review and approve/disapprove products. Concern was also expressed about approving products without national standards. Ray Saporito expressed concern over stifling innovation but that standards and safeguards should also be applied as appropriate. He stated that the TAC should focus on who is doing the testing and do the test results cover the variability needed to assure performance. The motion was then modified to recognize that the system as approved would not be authorized to discharge to Lake Erie. A roll call vote was then held with 6 yes votes and 1 no vote. The motion carried.

Special Device for Drip Distribution: TAC members were updated by Mike Price on his meetings with Bob Mayer of American Manufacture. Suzanne Dill from Geoflow was present and had sent an email with written comments on the proposal. Those comments were handed out and read by the TAC committee. Suzanne provided additional comments and discussion followed on the uses of turbulent flow emitters and other state experiences.

Rebecca Fugitt talked further about the history of the Drip Distribution System and Experimental Guidelines that were done in 2002. Based on the experiences from that process, and many discussions with industry and drip designers in Ohio, these standards were used to form the basis for the 2007 rules regarding drip distribution and the allowance for a soil depth credit for timed micro-dosing of effluent that can be achieved using this technology. Rebecca also informed the TAC members that there are presently four drip companies awaiting approval once this policy/procedure/special device is approved by the TAC and the Director.

Mike Felton from StreamKey and Tom Ashton from American Manufacture discussed the history of drip as developed under the old experimental concurrence process, and the importance of using the drip assurance process. Ray Saporito indicated that many local health districts are not very familiar with drip technology and the assurance process was a critical component to ensure that proper designs and subsequent installations were made to prevent problems at site. There is an issue of capacity of knowledge by sanitarians on this technology.

The TAC decided to go through the document paragraph by paragraph as submitted to get comments. There was a general comment that the special device approval should include definitions.

The first three paragraphs had no comments from TAC members or guests.

Condition section it was noted if ODH should audit or somehow follow up and spot check the companies that seek assurances to make sure the companies are following their own – procedures required under the assurance process.

VSD paragraph: It was commented that if a higher application rate was used, a soil depth credit would not be permitted and this should be clarified in the document.

Site Specifications—under the site and soil information paragraph, add “and color” to the end of the last sentence.

Design Criteria: Discussion was held on where the 25’ came from as a separation distance, It was discussed that this number came from the prior Sewage Advisory Committee that worked on the original drip standards..

Design Plans: This section should be re-worded to state that the depth placement of the drop lines may not exceed 1 foot unless extreme site conditions justify a greater depth, and the designer can demonstrate appropriate operation of the system.

Drip Distribution: Suzanne Dill from Geoflow inquired why only pressure compensating emitters were the only emitters allowed. Suzanne acknowledged that turbulent flow emitters would have to have criteria set and not to be used on every lot. Dr. Tumeo suggested that the manufacturers suggest some design limitations (based on soils, lot conditions such as slope, and subsequent loading rates) for the turbulent flow emitters that would be included in the criteria.

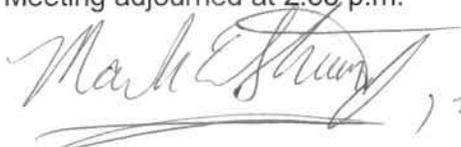
Due to time constraints, discussion on the drip distribution special device criteria was suspended until the next TAC meeting.

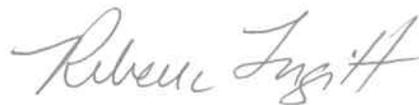
Rebecca then briefly discussed:

- The upcoming legislature report the TAC is required to produce, and the proposed content.
- Pending applications for TAC review
- Sewage Program updates—staffing, installer survey, educational meetings

The next TAC meeting is scheduled for November 13, and will be held at ODNR, Building I-1.

Meeting adjourned at 2:55 p.m.

 , secretary



STS Technical Advisory Committee  
MEETING MINUTES

Date: Tuesday November 13, 2007

Time: 10:00 AM

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance: (10 out of 10 were present)

Academic – Mark Tumeo, Cleveland State University

AOHC Health Commissioners – Ray Saporito, Ashtabula County & Marty Tremmel, Union County

General Public - Stephen Hovancsek, retired PE/PS

*Installer/Service Provider – position currently vacant*

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representatives – Dick Bachelder, PSA, Inc. & Mike Price, Norweco, Inc.

ODH Director of Health Representative & TAC Chair - Rebecca Fugitt

Guests: David Morgan and Mike Catanzaro of Delta Environmental Products, Wes Combs of Zoeller Pump Company, Dan Lark of Lake County Health Dept., Mike Felton of Streamkey Inc., Bob Mayer and of American Manufacturing, Dave Diehl of Diehl Technical, Charles Ray of Bord Na Mona, Trent Lydic of Jet Inc., Bennette Burks of 3-Engineering, LLC, Ryan Fickes of Pentair Water Pump, Zak Sherman of Infiltrator Systems Inc., Steven Miller of Soil and Environmental Consulting, and Rodney Ruskin of Geoflow.

Other ODH participants: Gene Phillips, Amy Wood, and Dusten Gurney

Agenda review:

- Introductions were made by all in attendance. The meeting agenda was approved by the TAC members.

Meeting minutes

- The October meeting minutes were proposed for approval. Ray Saporito made motion to approve the minutes, seconded by Mark Tumeo. All TAC members present voted in favor of approving minutes.

Presentations

1. Zoeller Pumps, Fusion Treatment Systems (ZF series 450, 600, 800). Presentation by Wes Combs, onsite sales manager. Qualification under NSF Standard 40 was completed this year for the ZF series. Test data was presented and questions fielded. Mark Tumeo requested temperatures and protocols from the Zoeller fecal data collection. Ray Saporito suggested better representation of

data. Mark Tumeo noted that the data represented does not match operating conditions in the field; only 10 pts of data and no temperature ranges. TAC discussed lack of range in variability the unit would face in the field. The influent into the system is from a Zoeller business office, not a household. Further discussion was conducted. The attainment of third party test data was stressed. Mike Price initiated motion for approval of BOD/TSS reduction and to deny the request of a fecal depth credit due to no third party data and issue with source of influent (that being non-residential and no data for the ZF 800). Dick Bachelder seconded the motion. A roll call vote was called by the TAC chair, and all TAC members present voted in favor of the motion.

2. Delta Environmental – DF Series ATU. Asking for NPDES approval with use of re-aeration device. Mike Catanzara and David Morgan of Delta presented the Dissolved Oxygen data. The data came from the Gulf Coast testing facility. The TAC requested information for the Delta NPDES system failsafe mechanism; Mike Catanzara said he could provide that information. Mike Price made a motion for NPDES approval; Mark Tumeo seconded the motion for waters other than Lake Erie, as requested by Delta. A roll call vote was called by the TAC chair, and all TAC members present voted in favor of the motion. Mark Tumeo wanted temperature data, Mike Catanzara said he would provide data. Note made on record that temperatures should accompany Dissolved Oxygen data.

#### Discussion of drip distribution assurance – special device approval

- Rebecca Fugitt gave a summary of events/issues and an update since last meeting.
- The TAC began discussion on the Design Plan portion of proposed special device approval. This is where the TAC discussion left off at the October meeting.
- Mark Tumeo indicated 2-3 issues: pressure compensating emitters vs. turbulent flow, separate zones, and time dosing.
- After some extensive discussion, Mark Tumeo suggested that the drip experts in the audience each give a 5 minute exhortation on drip; what they are to lose/gain and support and why. Mike Price noted to not forget the cost argument.
- Rebecca Fugitt explained the ODH experimental concurrence versus the special device approval.
- The TAC discussed topic further and then opened up the floor for guest comments/exhortations.
- Dan Lark with Lake Co. was first, supporting the current assurance program. Lake County has a 2-3% problem rate with drip distribution systems and 95% are septic tank effluent systems. He discussed Lake County's success with prior drip assurance process.
- Mike Felton of Streamkey Inc. initiated a discussion on Local Health Departments having the option to not permit drip distribution systems in their jurisdiction under experimental concurrence vs. a special device approval. The question was raised regarding how local health departments would be kept accountable in administering the special device approval. Mike Felton re-iterated his letter to the TAC regarding drip distribution and explained how the assurances were modeled after national standards.

- Rebecca Fugitt announced the companies that have been granted drip assurance approval under the rescinded 2007 rules and companies that have applications turned in, but are awaiting approval under the special device approval. Rebecca stated that the proposed Drip Special Device Approval is modeled after former experimental and 2007 rules.
- There was discussion about the policy shift of the drip assurances and providing a stop gap in this interim rule period.
- Rod Ruskins of Geoflow spoke next. Discussed cost and risks of septic tank effluent to a drip distributions system. He suggested that two standards are needed; one for septic tank effluent and one for secondary treatment.
- Bob Mayer of American Manufacturing discussed flow meters, and pressure compensating emitters vs. non-pressure compensating (turbulent flow).
- Mark Tumeo questioned whether the savings in turbulent flow emitters is lost with added design factors/engineering cost. Bob Mayer continued to give explanation of drip factors such as flow meters. He presented the papers that have been recently written to support the proposed drip assurances - ASABE papers.
- Mark Tumeo urged again to consider what is being held up with extending the approval process of the drip special device approval and to communicate with the Sewage Study Commission what issues the TAC had in discussing the drip special device approval. Discussion continued on what to decide and what to communicate to the Sewage Study Commission. Recommendation was made to have two standards or special device approvals; one for septic tank effluent and one for pretreated effluent.
- Stephen Hovancsek made motion to approve the proposed drip special device approval. Mark Tumeo seconded the approval as amended by the TAC to grant local health departments the option to not administer this approval in their jurisdiction. Mark Tumeo made motion to work on an additional approval for secondary treated effluent. The TAC committed to work on a second special device approval for pretreated effluent by the immediate appointment of a task force. Mark Stump suggested this go into the TAC report to the Sewage Study Commission. Mike Price moved to amend the motion to immediately add the task force with Mark Tumeo as the lead. A roll call vote was called by the TAC chair; all but one TAC member voted in favor of the motion.
- Discussion resumed about the drip distribution standard task force. The following signed up to participate in the task force: TAC members Mark Tumeo, Stephen Hovancsek, Mike Price, and Rebecca Fugitt; industry or interested party members David Morgan of Delta Environmental Products, Dan Lark, R.S., Lake County Health Department, Trent Lydic of Jet Inc., Mike Felton of Streamkey, Tom Ashton and Bob Mayer of American Manufacturing, Zach Sherman of Infiltrator, Jeff Coomer of Consolidated Treatment, Rodney Ruskin of Geoflow, Bennette Burks of 3-Engineering LLC, and Charles Ray of Bord Na Mona. A teleconference will be scheduled for the first meeting.

### Study Commission Report

- Rebecca Fugitt announced that the first report, as outlined in Amended Substitute House bill 119 Section 3718.03 (F) (5), is due January 1, 2008. The second report is due 90 days after the end of the 2007 calendar year.
- Mark Stump suggested adding a section that discusses treatment vs. disposal and why a treatment level is necessary.
- Rebecca Fugitt said that the TAC report focuses on products and costs and the ODH report covers whole gamut.

### Ralph Benson and OOWA Installation Standards of Practice

- Ralph Benson distributed copies of the Ohio Onsite Wastewater Association document titled "Standards of Practice for Installations" to TAC member for their review and consideration. He asked that the TAC consider recommending the document to the Director of Health for inclusion in the ODH report to the Sewage Study Commission. Ralph also distributed copies of the Consortium of Institutes for Decentralized Wastewater Treatment document titled "Residential Onsite Treatment Systems: An Operation and Maintenance Service Provider Program" for review and consideration. He asked that the TAC give the same consideration to this document as he had requested for the Standards of Practice for Installations document, that is, recommendation to the Director of Health for inclusion in the OHD report to the Sewage Study Commission.
- Rebecca Fugitt suggested using the document in the TAC recommendations report. Mark Stump suggested to review for conflicts with the rules

### Pending Applications for TAC review

- Rebecca Fugitt announced that Hoot Systems received BOD/TSS approval.
- Van Wert County Health Department has applied for experimental concurrence to use Presby Enviro-Septic® system. Discussion followed whether or not to allow them to come before the TAC with a presentation to introduce their product. Marty Tremmel asked if TAC could review literature from Presby. Mark Tumeo suggested Presby come after an application is made for TAC review.

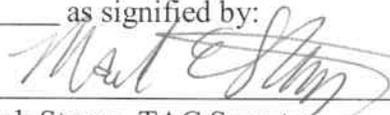
### ODH Sewage Program update

- ODH is reviewing applications to Tom Grigsby's position, and Jean Caudill's position will be posted soon.
- There was discussion regarding TAC positions and terms. All members' terms expire in 2008 except those appointed in 2007. ODH staff is recommending to the Director to re-appoint the same people that he has authority to appoint.
- Next TAC meeting is scheduled for December 11, 2007 in the ODNR assembly center.

Approved on 1-8-08

  
Rebecca Fugitt, TAC Chairperson

as signified by:

  
Mark Stump, TAC Secretary

**STS Technical Advisory Committee**  
**MEETING MINUTES**

Date: Tuesday – December 11, 2007

Time: 10:00 AM to 2:00M

Location: Ohio Department of Natural Resources, 2045 Morse Road, Columbus

TAC Members in Attendance (10 of 11 were present):

AOHC Health Commissioners – Ray Saporito, Ashtabula County, and Martin Tremmel, Union County

General Public – Stephen Hovancsek, retired PE/PS

ODNR Soil Scientist – Tim Gerber

OEHA Registered Sanitarian – Ralph Benson, Clermont County General Health District

OEPA DSW Engineer – Mark Stump

Manufacturer Representative: Mike Price, Norweco, Inc. and Dick Bachelder, PSA, Inc

Academic: Dr. Mark Tumeo, Cleveland State University via phone

ODH Director of Health Representative & TAC Chair – Rebecca Fugitt

Installer/Service Provider –Position vacant due to resignation

Guests: Tom Ashton of American Manufacturing; Steve Branz of Bord na Mona; Leslie Page of Jet Inc., David Diehl of Diehl Tek, Ron Suchecki of Hoot Systems, Steve Miller, soil scientist and David Presby of Presby Environmental Inc. Sean McGuigan and Mike Market from Presby

Other ODH participants: Gene Phillips, Amy Wood, and Dusten Gurney

Agenda review: Introductions were made by all in attendance.

Meeting Minutes: The TAC members reviewed the November 13, 2007 meeting minutes.

Ralph Benson had corrections to the minutes dealing with his presentation of the Ohio Onsite Wastewater Association document titled "Standards of Practice for Installations" to the TAC members for review and consideration. Ralph wanted to correct that the TAC members consider recommending this document to the Director of Health for inclusion into the ODH report to the Sewage Study Commission. Ralph also distributed copies of the Consortium of Institutes for Decentralized Wastewater Treatment document titled "Residential Onsite Treatment Systems: An Operation and Maintenance Service Provider Program" for review and consideration. He asked that the TAC give the same consideration to this document as he had requested for the Standards of Practice for Installations document, that is, recommendation to the Director of Health for inclusion in the OHD report to the Sewage Study Commission.

A motion was made by Stephen Hovancsek and seconded by Ray Saporito for approval of the November 13, 2007 meeting minutes as amended. TAC members present voted in favor of approving the minutes as submitted and amended.

**Presby Environmental Inc.:** Applied for BOD/TSS and 10,000 fecal /one soil depth credit.

David Presby of Presby Environmental Inc. from New Hampshire was present to introduce his product and its functions. Mr. Presby started out with his history in the on-site world and then

presented on the **Enviro-Septic Wastewater Treatment System** product. This product is a 12 inch tile which is corrugated and perforated and surrounded with different materials to help reduce particles from reaching the infiltrated surfaces. There are weir's located inside this tile to help trap Fats, Oils and Greases. This product is embedded into sand either by bed or trench configuration. This product is also vented having a high vent (usually the plumbing vent in the house) and a low vent located at the end of the system.

Mr. Presby went on to state that this product had been tested and all his data came from the following test sites .The University of New Hampshire in 2002 and was tested in Stokes Canada in 2003 with that study lasting two years. Testing was also done at Bureau de Normalisation du Quebec (BNQ) for a year. Testing done at BNQ conforms to NSF standards and BNQ has a reciprocal agreement with NSF. Mr. Presby stated this testing also shows testing in a cold climate situation.

Mr. Presby stressed that his product must have a vertical separation distance of one foot to seasonal water to be able to produce the results that were found in his studies.

#### Discussion from the TAC members:

Discussion was held on the Indiana soils table and loading chart and how that compares to the Tyler Table being used in Ohio. Mr. Presby was asked to look at the difference, and justify the loading rates proposed that differs from the loading rates used in the Tyler Table. Mr. Presby responded that he had over 400 systems installed in Indiana and has seen no problems with those rates.

Mark Tumeo questioned Mr. Presby on this fecal data points for he could only find 8 points and that was not enough data to make a decision on the fecal.

TAC members also discussed that this product was asking for two things: A sizing reduction based on the BOD/TSS data and asking for a reduced area foot print. The committee questioned the regulatory structure of granting approval of a product that did not use the Tyler table for its system configuration since this was a criteria for approval that the TAC has established.

Due to the all the information presented to the TAC committee, they ask Mr. Presby to provide them with more data on the fecal and then produce a summary sheet of all the data that would supplement what was presented. TAC members also requested that Presby Environmental provided scientific justification and calculations supporting the loading rates for their product that differs from the Tyler Table.

- A motion was made by Stephen Hovancsek to request that Rebecca Fugitt provide correspondence to Presby Environmental Inc., on what they will need to submit prior to the next meeting to allow the TAC members to review the additional information so they could act on any motion to approve or deny this product. Mike Price seconded the motion. TAC members present voted in favor of approving the motion as submitted.

#### Hoot Aerobic System: Applied for 10,000 fecal/one foot credit requirements

Ron Suchecki from Hoot Aerobic System gave his presentation to the TAC committee. He started out stating his Unit Hoot H Series was the first unit to get the Administrative approval for BOD/TSS meeting the NSF 40 standards.

Building on that approval Mr. Suchecki presented his data from Baylor University showing that his unit can achieve the standards of less than 10,000 fecal to gain the one foot credit. His data came from Baylor University which is one of the NSF testing sites.

Discussion was held by TAC members on the data presented. The committee asked that Mr. Suchecki provide them with a signed cover sheet verifying the data was from this testing site and also need the geometric mean of the fecal data.

- Ray Saporito made a motion for approval of the Hoot H Series as submitted with the additional documentation of the Baylor signature and geometric means for the one foot credit that it was seeking. The motion was seconded by Stephan Hovancsek. Roll call voted held and motion for approval carried.

**Special Device for Drip Distribution:** TAC members were updated by Rebecca Fugitt on the conference call for that was held on December 7, 2007 for TAC workgroup members to discuss modifications to the drip distribution special device approval. During conference call , several key issues were discussed. Mark Tumeo agreed to make proposed modifications to the special device approval and provide this draft to the workgroup members and possible further discussion at the January, 2008 TAC meeting.

**TAC/ODH Reports:**

Rebecca briefly discussed

- The upcoming legislature report from ODH and the contents of the report. Rebecca mentioned socioeconomic factors that were being evaluated and benchmarks of affordability set by U.S. EPA that were being used for comparison. TAC members will be forwarded a copy of the report upon its completion.
- The upcoming report the TAC is required to provide to the study commission, and the proposed content. TAC members should expect a draft for review in the near future.
- ODH recommendations on the TAC committee that is appointed by the governor's office. ODH has recommended the current appointments of Mark Tumeo, Mark Stump, Tim Gerber and Stephen Hovancsek be continued..
- Letter sent to Senator Harris about the appointment of a person to the vacancy on the TAC committee that would fill the service provider/installer position. OOWA was to provide their recommendations to Senator Harris.
- Pending applications for TAC review
- Sewage Program updates—staffing

The next TAC meeting is scheduled for January 8, and will be held at ODNR, Assembly Center West, Building E.

Meeting adjourned at 2:00 p.m.

Approved on 1-8-08 as signified by:



Rebecca Fugitt, TAC Chairperson



Mark Stump, TAC Secretary

**SEWAGE TREATMENT SYTSEMS  
TECHNICAL ADVISORY COMMITTEE  
2007 ANNUAL REPORT**

**APPENDIX 4**

**RESOLUTION**  
**07-05-081**

WHEREAS, the Technical Advisory Committee (TAC) acting under the authority of the Ohio Revised Code (ORC) §3718.03 and §3718.04 may recommend household sewage treatment systems (HSTS) and small flow on-site sewage treatment systems (SFOSTS) to the Director of the Ohio Department of Health. And;

WHEREAS, OAC §3701-29-18 establishes a mechanism for sewage treatment system(s) and/or such component(s) to be qualified for approval subject to a recommendation by the Technical Advisory Committee (TAC);

NOW THEREFORE BE IT RESOLVED, the Technical Advisory Committee (TAC), after giving due thought and proper consideration, hereby, recommends approval of the following pretreatment components, and related operation and maintenance as identified per the attached, and;

BE IT FURTHER RESOLVED, the Ohio Department of Health has also recommended approval of the following pretreatment components, and related operation and maintenance per the attached.

The effective date of this action shall be May 8, 2007.

This RESOLUTION moved by Dr. Mark Tumeo and seconded by Mr. Stephen Hovancsek

this 8<sup>th</sup> day of May, 2007.

Upon roll call, the Technical Advisory Committee (TAC) members vote as follows:

<u>Mr. Dick Bachelder</u>	<u>ABSENT</u>	<u>Ray Saporito</u>	<u>Yes</u>
<u>Ralph Benson</u>	<u>Yes</u>	<u>Mark Stump</u>	<u>Yes</u>
<u>Rebecca Fugitt</u>	<u>Yes</u>	<u>Todd Supek</u>	<u>Yes</u>
<u>Tim Gerber</u>	<u>Yes</u>	<u>Mr. Martin Tremmel</u>	<u>Yes</u>
<u>Stephen Hovancsek</u>	<u>Yes</u>	<u>Dr. Mark Tumeo</u>	<u>Yes</u>
<u>Mike Price</u>	<u>Yes</u>		

**OHIO DEPARTMENT OF HEALTH  
Pretreatment Component Approvals  
and  
Operation & Maintenance (O&M) Information  
May 8, 2007**

The Ohio Department of Health (ODH) approval process is intended to ensure pretreatment component reliability and effluent quality is achieved and maintained in accordance with the standards and provisions of Ohio Administrative Code (OAC) Chapter 3701-29 [Sewage Treatment System (STS) Rules]. Specific effluent quality standards and related information can be found in the STS rules and the HSTS General NPDES Permit as applicable. Refer to product information from the manufacturer when pretreatment components are listed for nutrient reduction or high strength waste reduction.

**The owner of a pretreatment component is required to maintain an operation and maintenance (O&M) service contract.** The O&M and monitoring of the entire STS shall be conducted at least annually, or more often as required by the manufacturer of any component of the STS, and shall be conducted by a registered service provider in accordance with STS rules.

**Owners and designers should consider the following for pretreatment component selection and STS design:**

- O&M requirements and availability of qualified service providers
- Manufacturer requirements for use of related components or replacement parts
- Effects of seasonal use, wastewater quality and quantity, or other factors that may impact performance
- Benefits of additional treatment or flow control in advance of the pretreatment component based on manufacturer recommendations or waste characteristics (i.e. trash trap, septic tank, dosing tank)
- Any added design features for required sampling capacity after pretreatment component and before and after any disinfection unit.

**Owners and designers are encouraged to contact manufacturers or suppliers to obtain detailed product information.**

Pretreatment components are subject to ODH review for compliance with the conditions of approval and compliance with law and rules. A review may be conducted when [there is evidence of noncompliance with approval conditions or for other reasons deemed necessary to assure compliance. Upon review, if there is a determination of noncompliance, a pretreatment component may be removed from the approved list](#) in accordance with Chapter 119 of the Ohio Revised Code.

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K	≤ 1K	≤ 200	≤ 20			
Bord na Mona Env. Products US P.O. Box 77457 Greensboro, NC 27417 800-787-2356  <b>Puraflo Peat Biofilter</b>	2-20-07		X	X						<a href="#">Puraflo O&amp;M</a>
Consolidated Treatment Systems, Inc. 1501 Commerce Center Drive Franklin, OH 45005 937-746-2727  <b>Enviro-Guard ENV Model</b>	2-26-07		X							<a href="#">Env-Grd O&amp;M</a>
<b>Enviro-Guard ENV Model + Salcor 3G UV Disinfection</b>	2-26-07		X	X	X	X				<a href="#">Env-Grd NPDES</a>
<b>Enviro-Guard ENV Model + Salcor 3G UV Disinfection</b>	3-23-07	X	X	X	X	X				<a href="#">Multi-Flo O&amp;M</a>
<b>Enviro-Guard ENV Model + Salcor 3G UV Disinfection + Re- Aeration Device</b>	2-26-07		X							<a href="#">Navadic O&amp;M</a>
<b>Multi-Flo FTB Models</b>	2-26-07		X							
<b>Nayadic M Models</b>										

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K	≤ 1K	≤ 200	≤ 20			
Ecological Tanks, Inc. 2247 Hwy. 151 North Downsville, LA 71234 318-644-0397  <b>Aqua Aire – AA Models</b>	3-7-07		X							<a href="#">Aqua Aire O&amp;M</a>
Delta Environmental Products P.O. Box 969 Denham Springs, LA 70726 800-219-9183  <b>DF Series Aerobic            Treatment Unit (ATU)</b>  <b>DF Series ATU + Salcor            3G UV Disinfection</b>	4-9-07  4-9-07		X  X	  X	  X	  X				<a href="#">Delta O&amp;M</a>
Jet, Inc. 750 Alpha Drive Cleveland, OH 44143 440-461-2000  <b>1500 Series BAT Media            Plants</b>	3-6-07		X							<a href="#">Jet BAT O&amp;M</a>

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K	≤ 1K	≤ 200	≤ 20			
NORWECO, Inc. 220 Republic Street Norwalk, OH 44857 419-668-4471										<a href="#">Singulair O&amp;M</a>
<b>Singulair Models 960 or TNT</b>	3-7-07		X	X						<a href="#">Singulair UV</a>
<b>Singulair Models 960 or TNT + UV Disinfection</b>	3-7-07		X	X	X	X				
<b>Singulair Model TNT</b>	3-7-07		X	X			X			
Orenco Systems, Inc. 814 Airway Avenue Sutherlin, OR 97470 800-348-9843										
<b>AdvanTex AX20</b>	2-27-07		X							<a href="#">AX20 O&amp;M</a>
<b>AdvanTex AX20 + Salcor 3G UV Disinfection</b>	2-27-07		X	X	X	X	X			<a href="#">Salcor O&amp;M</a>
<b>AdvanTex AX20 + Salcor 3G UV + Pump Discharge</b>	2-27-07	X	X	X	X	X	X			<a href="#">AX20 NPDES</a>

Manufacturers & Products	Date of Approval	NPDES	BOD <sub>5</sub> /TSS	Fecal Coliform				Nutrient	High Strength Waste	O&M (PDF)
				≤ 10K	≤ 1K	≤ 200	≤ 20			
Quanics, Inc. P.O. Box 1520 Crestwood, KY 40014 877-782-6427  <b>SCAT Biofilters (AeroCell            media or Bio-COIR            media)</b>	4-10-07		X					X		<a href="#">SCAT O&amp;M</a>
SeptiTech, Inc. 70 Commercial Street, Suite 3 Lewiston, ME 04240 207-333-6940  <b>SeptiTech (in specified            plastic or concrete septic            tank)</b>	4-3-07		X					X		<a href="#">SeptiTech O&amp;M</a>

**RESOLUTION**  
**07-05-082**

WHEREAS, the Technical Advisory Committee (TAC) acting under the authority of the Ohio Revised Code (ORC) §3718.03 and §3718.04 may recommend household sewage treatment systems (HSTS) and small flow on-site sewage treatment systems (SFOSTS) to the Director of the Ohio Department of Health. And;

WHEREAS, OAC §3701-29-18 establishes a mechanism for sewage treatment system(s) and/or such component(s) to be qualified for approval subject to a recommendation by the Technical Advisory Committee (TAC);

NOW THEREFORE BE IT RESOLVED, the Technical Advisory Committee (TAC), after giving due thought and proper consideration, hereby, recommends approval of alternative aggregate, chamber and gravelless products for sewage treatment systems as identified:

Advanced Drainage Systems - SB2, Multi-Pipe, BioDiffuser;  
Baughman Tile - Big O Sock Filter;  
Crumpler Plastic Pipe - No Rock Pipe;  
Eljen - InDrain, Xpandable Chamber;  
Hancor - Gravelless Pipe, Cultec Contactor, EnviroChamber;  
Haviland Drainage - Gravelless Pipe;  
Infiltrator Systems - Equalizers, Quick4 Equalizers;  
Prinsco - Goldline Gravelless Pipe;  
Ring Industrial – EZflow pipe;  
Ruck Systems - Ruck-A-Fins; and;

BE IT FURTHER RESOLVED, the Ohio Department of Health has also recommended approval per the attached.

The effective date of this action shall be May 8, 2007.

This RESOLUTION moved by Dr. Mark Tumeo and seconded by Mr. Steven Hovancsek this 8<sup>th</sup> day of May, 2007.

Upon roll call, the Technical Advisory Committee (TAC) members vote as follows:

<u>Mr. Dick Bachelder</u>	<u>ABSENT</u>	<u>Ray Saporito</u>	<u>Yes</u>
<u>Ralph Benson</u>	<u>Yes</u>	<u>Mark Stump</u>	<u>Yes</u>
<u>Rebecca Fugitt</u>	<u>Yes</u>	<u>Todd Supek</u>	<u>Yes</u>
<u>Tim Gerber</u>	<u>Yes</u>	<u>Mr. Martin Tremmel</u>	<u>Yes</u>
<u>Stephen Hovancsek</u>	<u>Yes</u>	<u>Dr. Mark Tumeo</u>	<u>Yes</u>
<u>Mike Price</u>	<u>Yes</u>		

**RESOLUTION**  
**07-05-083**

WHEREAS, the Technical Advisory Committee (TAC) acting under the authority of the Ohio Revised Code (ORC) §3718.03 and §3718.04 may recommend household sewage treatment systems (HSTS) and small flow on-site sewage treatment systems (SFOSTS) to the Director of the Ohio Department of Health. And;

WHEREAS, OAC §3701-29-18 establishes WHEREAS, OAC §3701-29-18 establishes a mechanism for sewage treatment system(s) and/or such component(s) to be qualified for approval subject to a recommendation by the Technical Advisory Committee (TAC);

NOW THEREFORE BE IT RESOLVED, the Technical Advisory Committee (TAC), after giving due thought and proper consideration, hereby, recommends to the Director and staff of the Ohio Department of Health to carefully review and consider implementation of stepwise or other creative approaches allowing for the incremental repair and/or alteration of existing systems that are experiencing initial signs or other evidence of failure, with the goal of abating the nuisance in a cost effective manner for the homeowner, and;

BE IT FURTHER RESOLVED, the Ohio Department of Health provide regular updates and reporting to the Technical Advisory Committee (TAC), as to the progress and implementation of any such interventions associated with achieving this goal as defined above.

The effective date of this action shall be May 8, 2007.

This RESOLUTION moved by Dr. Mark Tumeo and seconded by Mr. Ray Saporito this 8<sup>th</sup> day of May, 2007.

Upon roll call, the Technical Advisory Committee (TAC) members vote as follows:

<u>Mr. Dick Bachelder</u>	<u>ABSENT</u>	<u>Ray Saporito</u>	<u>Yes</u>
<u>Ralph Benson</u>	<u>Yes</u>	<u>Mark Stump</u>	<u>Yes</u>
<u>Rebecca Fugitt</u>	<u>Yes</u>	<u>Todd Supek</u>	<u>Yes</u>
<u>Tim Gerber</u>	<u>Yes</u>	<u>Mr. Martin Tremmel</u>	<u>Yes</u>
<u>Stephen Hovancsek</u>	<u>Yes</u>	<u>Dr. Mark Tumeo</u>	<u>Yes</u>
<u>Mike Price</u>	<u>Yes</u>		