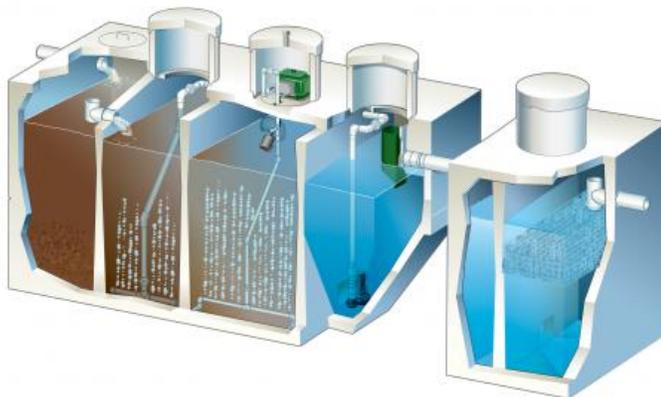
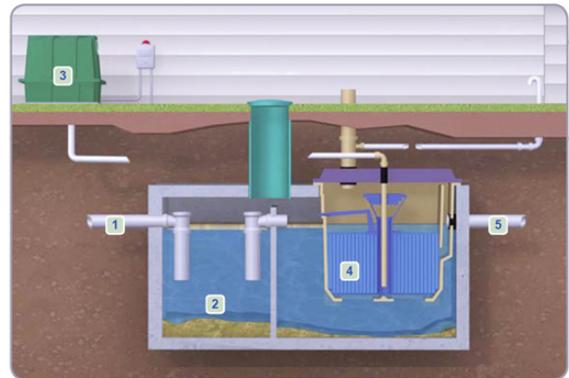




2013 ANNUAL REPORT of the

Sewage Treatment Systems Technical Advisory Committee



January 2014

Executive Summary

Section 3718.03 of the Ohio Revised Code (ORC) creates the Sewage Treatment Systems (STS) Technical Advisory Committee (TAC), outlines its membership, identifies individuals granted the authority to appoint committee members, and provides guidelines concerning the committee's responsibilities and procedures. Paragraph (G) of ORC 3718.03 requires the chairperson of the committee to prepare an annual report concerning the activities of the committee and submit the report to the Ohio General Assembly. The purpose of this report is to fulfill that requirement.

TAC scheduled monthly meetings to review product applications received in 2013. During 2013, TAC reviewed five sewage treatment systems (STS) or components from five manufacturers. Of the five reviews, two were requests to modify previous approvals and three were new requests for approval of STS or components. One of the modification requests was a renewal of an expired product approval. TAC also continued discussion of a previous request to modify the special device approval for fines-free distribution products to allow for a change in configuration.

The systems and components recommended for approval in 2013 by TAC have provided for the use of soil absorption system area sizing reductions, soil depth credits to reduce the thickness of soil required below a soil absorption system, and approval for constantly meeting the effluent quality standards outlined in the Ohio Environmental Protection Agency's (Ohio EPA) National Pollutant Discharge Elimination System (NPDES) General Permits for household STS.

Other activities and actions of the committee included revision of the Guidelines and Protocols for ORC 3718 Review, discussion of sand-lined soil absorption systems, and work toward the development of technical standards for the use of spray irrigation for treated wastewater.

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.

Sewage Treatment Systems Technical Advisory Committee Membership and Meetings

The Sewage Treatment Systems Technical Advisory Committee (TAC) membership and appointment authority is outlined in Section 3718.03 of the Ohio Revised Code. The members of TAC during 2013 were:

| 2013 TAC Member | Company | Representing | Appointed By |
|---------------------------|--|---------------------------|---------------------|
| Rebecca Fugitt, MS, RS | Ohio Department of Health | Director of Health | Director of Health |
| Mark Stump | Ohio Environmental Protection Agency | Engineer, Ohio EPA | Governor |
| * | | Academia | Governor |
| * | | Ohio Township Association | Governor |
| Linda Aller, RS | Bennett and Williams Environmental Consultants, Inc. | Public Member | Governor |
| Matt Deaton | Ohio Department of Natural Resources, Division of Soil and Water Resources | Soil Scientist, ODNR | Governor |
| Dan Lark | Lake County General Health District | OEHA Sanitarian | House |
| Zak Sherman | Infiltrator Systems, Inc. | Manufacturer | House |
| Raymond Saporito, MPH, RS | Ashtabula County Combined Health District | AOHC Health Commissioner | House |
| Walt Sandefur, PE | Sandefur Consulting | Professional Engineer | House |
| Charles Patterson, RS | Clark County Combined Health District | AOHC Health Commissioner | Senate |
| Joseph Keiser, PE | | Designer | Senate |
| Mark Fehring | Fehring Services | System Installer | Senate |
| Scott Hetrick | Norweco, Inc. | Manufacturer | Senate |

*The Academia and Ohio Township Association positions were not filled in 2013.

TAC scheduled monthly meetings to review products in 2013. When no products were scheduled for review, the meeting was canceled. TAC held eight regular monthly meetings in 2013. Regular scheduled meetings for January, May, August and September were canceled because there were no product applications or product modification requests received for review.

A complete record of the meeting summaries for each monthly meeting and the recommended approvals that were made may be found on the Ohio Department of Health (ODH) website at: <http://www.odh.ohio.gov/odhPrograms/eh/sewage/tac1.aspx>.

Sewage Treatment Systems and Components Reviewed by TAC

ORC 3718 Review includes an evaluation of detailed system and component information including: product specific technical information, any limitations on use, performance information supporting manufacturer, installation material, and operation and maintenance information including estimates of operation costs and expected service life. In reviewing performance information, the TAC studies raw data and statistical analyses of the sample data (mean and standard deviation for normally distributed data and geometric mean and geometric standard deviation for microbial data) to determine the operational range of the product and its relationship to the documented performance standards. TAC reviews the environmental conditions of the collected data and related confidence intervals to determine if sufficient sample points have been submitted to conclude that the submitted data can be used to predict the products operation in the range of environmental conditions the product will be exposed to across the state of Ohio.

TAC reviewed five sewage treatment systems (STS) or components from five manufacturers. Of the five reviews, two were requests to modify previous approvals and three were new requests for approval of STS or components. One of the modification requests was also a renewal of an expired product approval.

The systems and components recommended for approval in 2013 by TAC have provided for the use of soil absorption system area sizing reductions, soil depth credits to reduce the thickness of soil required below a soil absorption system, and approval for constantly meeting the effluent quality standards outlined in the Ohio EPA's NPDES General Permits for household STS.

2013 TAC Product Review Summary

| Manufacturer | Product | Application Date | TAC Meeting | Approval Date (ODH Director) | Notes |
|------------------|--|---|---|---|--|
| Eljen, Inc. | Eljen A-42 & B-43 Geotextile Sand Filter | 8/14/2012 (multiple extensions had been requested and granted) | 9/11/2012 11/13/2012 2/12/2013* *Additional information required prior to approval | 8/19/2013 (multiple extensions had been requested and granted) | Requested new product approval for meeting: 1) BOD ₅ /TSS standard (all configurations) 2) 10,000 cfu/100mL fecal coliform standard for demand-dosed and time-dosed configurations |
| Bio-Microbics | MicroFAST 0.625; | 2/21/2013 | 3/12/2013 | 4/16/2013 | Requested approval for use of MicroFAST 0.625 model as option for all previous MicroFAST approvals |
| Bio-Microbics | MicroFAST (all models) | 2/21/2013 | 3/12/2013 4/9/2013 | 5/7/2013 | Requested modification of previous approval for meeting 10,000 cfu/100mL fecal coliform standard without UV disinfection |
| Ecological Tanks | Aqua Safe Advanced Treatment System with UV, re-aeration and telemetry or pump lock-out failsafe | 5/31/2013 | 6/11/2013 | 6/21/2013 | Request to renew previous approval for meeting Ohio EPA NPDES general permit effluent quality limits for household sewage treatment systems, which had been given a five year expiration term. The manufacturer requested that the renewed approval be modified to exclude an expiration date. |
| Norweco, Inc. | Hydro-Kinetic Model 600 FEU | 6/11/2013 | 7/9/2013 | 8/19/2013 | Requested new product approval for meeting: 1) BOD ₅ /TSS standard; 2) 10,000 cfu/100 mL fecal coliform std; 3) 1,000 cfu/100 mL std (w/UV); 4) 200 cfu/100 mL std (w/UV); 5) 20 cfu/100 mL std (w/UV) |
| Norweco, Inc. | Hydro-Kinetic Model 600 FEU with UV, re-aeration and failsafe | 6/11/2013 | 7/9/2013 12/10/2013 | 12/26/2013 | Requested new product approval for meeting Ohio EPA NPDES General Permit effluent quality limits for household sewage treatment systems |
| Enviro-Flo, Inc. | NuWater Aerobic Treatment System Models B-500 to B-1500 | 10/7/2013 | 11/12/2013 | 12/11/2013 | Requested new product approval for meeting: 1) BOD/TSS standard; 2) 10,000 cfu/100 mL fecal coliform std (w/UV) 3) 1,000 cfu/100 mL std (w/UV) |
| Enviro-Flo, Inc. | NuWater Aerobic Treatment System Models B-500 to B-1500 | 10/7/2013 | 11/12/2013 | N/A | Requested new product approval for meeting 200 cfu/100 mL standard with UV disinfection. Request withdrawn by manufacturer. |

Other TAC Activities and Actions

Other activities and actions of the committee included revision of the Guidelines and Protocols for ORC 3718 Review, discussion of sand-lined soil absorption systems, and work toward the development of technical standards for the use of spray irrigation for treated wastewater.

Spray Irrigation Study

Section 3718.06 (B) of the Revised Code establishes the STS Innovation Fund to fund new STS technology pilot projects through grants or other agreements. The law requires the director to deposit ten percent of the state portion of permit fees into the fund for installation and evaluation of STS new technology. The statute requires that the director “consult with the sewage treatment system technical advisory committee” in the selection of pilot projects for funding.”

At the April 9, 2013 TAC meeting, Dr. Karen Mancl of The Ohio State University submitted a proposal for a second phase of a study to research the quantity and quality of runoff from spray irrigation systems in Ohio. While studies on runoff from spray irrigation of treated wastewater have been completed in Virginia and Tennessee, winter conditions in these states are different from Ohio. Conducting a replicated, controlled field study may address the concerns of polluted runoff of this non-discharging wastewater management option in Ohio.

The initial study was conducted January 21, 2013 through May 1, 2013. The project was not in operation for the full winter season due to unforeseen circumstances that delayed the start of the study. A final report on the initial study was provided to the Ohio Department of Health on August 31, 2013. Dr. Mancl proposed to continue the study for a second phase that would collect data on the spray irrigation system for the entire winter season. After some discussion, TAC formally recommended funding of a second phase of the spray irrigation study to be conducted by The Ohio State University as outlined.

During 2013, ODH entered into a contract with the Ohio State University and the spray irrigation system was put back into operation. Spray irrigation and subsequent sampling began December 1, 2013 and will continue through April 2014. Dr. Mancl will continue to provide monthly reports on the status of the project.