

**Advisory Opinion
From the
Technical Review Committee
For the
New England Interstate Regulatory Cooperation Project**

Product/Technology name:

Orenco Systems, Inc. (OSI) Screened Vault Technology

Vaults: OSI200, SV 1500 Series, SVT Series

Filters: F Series, FE Series, FT Series, FTI Series

Applicants name & address:

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NEI Category:

2 - System Modification

Date of Opinion:

October 29, 1997

Project Background:

The New England Interstate Water Pollution Control Commission (NEIWPCC) in cooperation with the New England Governors Conference (NEG), EPA Center for Environmental Industry and Technology (CEIT), EPA's National Small Flows Clearinghouse (NSFC) and the New England state environmental/health agencies responsible for the administration of on-site wastewater treatment systems are undertaking a 12 month pilot project for the regional voluntary evaluation of innovative/alternative on-site wastewater products/technologies. The goal of the project is to facilitate the technical evaluation of innovative/alternative on-site wastewater products/technologies on a regional basis. This should result in expediting acceptance of innovative/alternative on-site wastewater treatment products/technologies by utilizing a Technical Review Committee (the Committee) to conduct an independent evaluation of product/technology performance. The Committee made up of New England State regulators and advisors will assess each product/technology on its merits, backed by quality data, and render an Advisory Opinion. The benefit of the Committee is to assist regulators in carrying out their responsibilities for evaluating these technologies in a more efficient manner.

The Committee has defined three categories of On-site I/A technologies:

1. **Material Replacement**
2. **System Modification**
3. **Advanced Wastewater Treatment**

Applicant's Description of Product/Technology:

In a single compartment septic tank which has been correctly sized for its intended purpose, raw sewage enters at the inlet and naturally separates into three relatively distinct zones: a scum layer, a sludge layer, and clear layer. An OSI Screened Vault product is usually located in the septic tank at the end opposite the inlet. Particular care is taken to position the Screened Vault's inlet holes so that effluent may enter only from the relatively clear zone of the septic tank between the sludge and scum layers. As effluent may enter only from the relatively clear zone of the septic tank between the sludge and scum layers. As effluent surrounds and flows through its nominal 1/8 inch mesh screen, particles larger than 1/8 inch are trapped in the vault, so that the effluent discharged is substantially free of solids. OSI Screened Vault products may also be placed in multiple compartmented tanks or separate dosing/pump tanks.

The OSI Screened Vault product known as the OSI Effluent Filter replaces the outlet baffle in a septic tank. In most residential applications, the OSI Screened Pump Vault with a dosed or pressurized discharge eliminates the need for a separate pumping compartment or tank.

Technology Claims:

The above-mentioned applicant submitted the following Claims of product performance with the formal submittal. The applicant was seeking the Committee's validation of these claims as part of the product/technology's consideration for regional evaluation in the Advisory Opinion:

***Claim 1:** Use of the OSI Screened Vault Technology replaces the outlet baffle when used in a single or multiple chambered septic tank or dosing tank.*

***Claim 2:** Use of the OSI Screened Vault Technology does not adversely impact the operation and functioning of a properly sized, watertight septic tank.*

***Claim 3:** In pumping applications of approximately 35 gallons per minute or less, use of the OSI Screened Vault Technology can eliminate the need for a second pumping chamber or tank. Pumping rates are not limited in pumping applications where the Screened Vault product is located in multiple compartment septic tanks or separate dosing tanks.*

***Claim 4:** Use of the OSI Screened Vault Technology in a properly sized single or multiple chambered septic tank results in increased effluent quality. This is when compared to the conventional practice of using only an outlet baffle for gravity discharges and/or unscreened dosage coming from a dosing chamber following the septic tank.*

***Claim 5:** Use of the OSI Screened Vault Technology reduces typical domestic wastewater concentrations of total suspended solids down to an average of 30 mg/l.*

***Claim 6:** Use of the OSI Screened Vault Technology prevents solids larger than 1/8 inch from leaving the tank and eliminates requirements that effluent pumps be able to pass solids any larger than 1/8 inch.*

Technical Review Committee's Response to Claims:

The Technical Review Committee's opinion is based on the Committee's evaluation of available information on the product/technology and relates to the specific products, materials, and specifications stated in the Technology Claim(s) of performance.

The Committee agrees that the product/technology meets the above-stated performance Claims. The Committee reached this decision via a unanimous vote.

The applicant should request a determination from the committee for any modifications to the product/technology. The product/technology is also evaluated for the quality of the data, wastewater science, and the technology's apparent merit as an innovative/alternative on-site wastewater treatment technology.

General Observations/Concerns:

After thoroughly evaluating all of the available information, the Technical Review Committee has identified the following concerns that may affect the approval of said technology in a state:

1. *The performance of the OSI Screened Vault depends highly on the quality of design and installation. The applicant should insure that proper design applications are used.*
2. *In order to function properly, the product should be checked and maintained regularly*
3. *The Committee concurs with the benefits of septic tank effluent filters, or other solid retention devices, due to the protection afforded the leaching system.*

Recommendations:

Based on the Technical Review Committee's evaluation, the Committee recommends the following items to improve or insure product performance:

1. *The product should be designed, installed, and maintained in accordance with manufacturer's directions.*
2. *The Screened Vault should be checked annually initially to inspect and maintain all parts. Future inspections should be scheduled as deemed necessary (2-4 years).*

State Regulations:

A positive Advisory Opinion shall in no way be considered a substitute for compliance with individual state regulations. Every state's regulations are designed to reflect the concerns of that state. Information generated in this opinion is intended to alleviate the investigative work required by an individual state for the consideration of said technology for approval as an alternative/innovative technology. Before state approval of the technology, the technology must comply with all pertinent state regulations. The Technical Review Committee also recommends that each state have a control for insuring that the above-listed concerns are met, addressed, or closely monitored and tracked.