

Orenco Systems[®], Inc.

Changing the Way the World Does Wastewater[®]

Environmental Profile

**Orenco[®] Effluent Sewers
For Collection & Conveyance of Wastewater**



Environmental Profile

Orenco® Effluent Sewers - Manufactured by Orenco Systems®, Inc.

Background

Many developers, engineers, and municipalities want to choose products for construction projects that reduce their impact on the environment. Wastewater projects are no exception. The need for environmentally sound sewer systems is especially great in environmentally sensitive areas. Orenco's Effluent Sewers are an environmentally sustainable solution for unsewered communities, new subdivisions, fringe development, and municipalities with inadequate or maxed-out sewer infrastructure.

Product

Orenco Effluent Sewers are a cost-effective, decentralized way to meet sewerage needs. With an Orenco Effluent Sewer, raw sewage flows from the house or business to a watertight underground tank, where it is pretreated. Solids remain in the user's underground tank. Only the filtered liquid is discharged (by either pump or gravity) to shallow, small-diameter collection lines that follow the contour of the land.

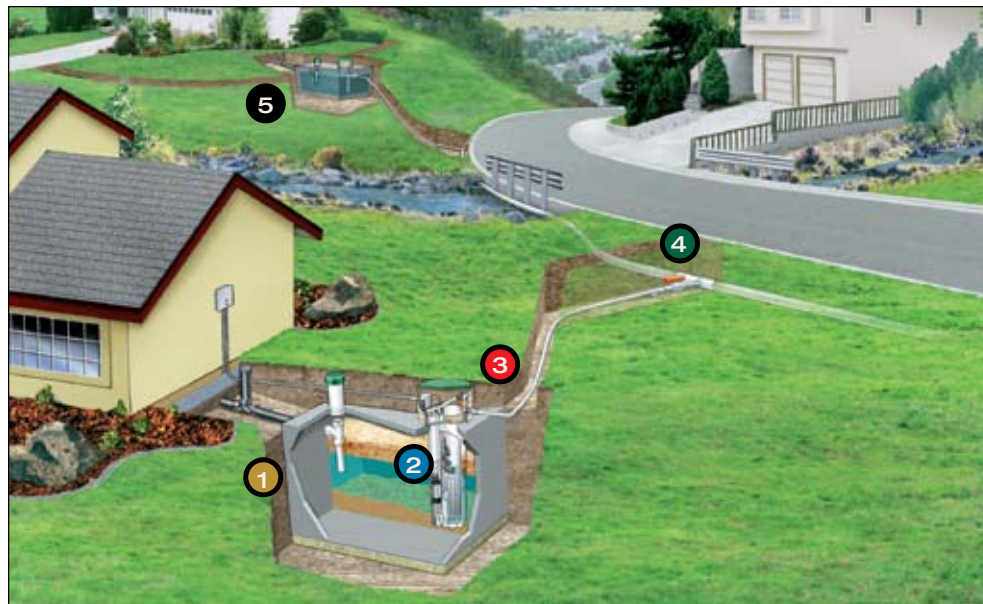
Energy Efficiency

Passive primary treatment: Unlike gravity sewers, Orenco Effluent Sewers provide natural, primary treatment inside the underground tank, with no power requirement. Since partially treated and filtered effluent rather than full-strength sewage is transported to downstream municipal treatment plants, less power is needed for secondary treatment.

Energy-efficient collection: Orenco's low-horsepower (1/2 hp), high-head effluent pumps typically run for just a few minutes per day, resulting in a more energy efficient method of transporting wastewater than gravity lift stations, grinder pump systems, or vacuum sewers.

Watertight construction: Orenco Effluent Sewers do not suffer from the inflow and infiltration common to gravity sewers, eliminating unnecessary power usage to convey and treat extra liquid.

This illustration shows how an Orenco Effluent Sewer works. The filtered effluent can flow to an existing gravity sewer or to a low-cost, low-maintenance treatment system, such as a lagoon, sand filter, or textile filter. After treatment and disinfection, the effluent is ideal for re-use.



1

Watertight tanks provide primary treatment, so only liquids are conveyed to the treatment plant.

2

Our patented Biotube® Pump Vault filters out solids, and our lightweight, non-corroding pumps last more than 25 years.

3

One-inch (25-mm) diameter service lines can be easily installed with a trencher.

4

Small-diameter main lines follow the contour of the ground, saving excavation costs. No expensive manholes or lift stations are required.

5

Filtered effluent is conveyed by gravity from homes at higher elevations, so no pump is typically required.

Water Reuse

If the effluent is not transported to an existing treatment facility, it lends itself well to subsurface irrigation or dispersal. This recharges the local aquifer and replenishes water resources.

Low Construction Impact

Minimized digging reduces onsite dust and soil erosion. Effluent collection using small diameter pipe and pressurized flow allows for a shallow pipe burial depth, enabling the use of small, fuel-efficient excavation equipment and lessening site disturbance. Directional drilling can also be used for minimal above-ground impacts.

Better Land Use

Reduced footprint: Orenco Effluent Sewers enable developers to cluster homes more closely together than is possible with individual septic systems, allowing for a higher ratio of open space to development, which promotes biodiversity.

Modular construction: The modular nature of an Orenco Effluent Sewer system allows large projects to add treatment capacity as needed and avoid unnecessary infrastructure. This approach to wastewater treatment saves economic resources and limits the environmental impact of installation.

Small-scale facilities: With an Orenco Effluent Sewer, large-scale treatment facilities become unnecessary. Because solids are treated at each individual lot, effluent can be treated on a neighborhood-scale, avoiding noise, odor, and visual impacts from buildings, aeration tanks, and parking lots.

Public Health

Biosolids control: Effluent collection allows for excellent biosolids control, with a passive reduction in overall biosolids of 70%. If homeowners or other users abuse their system, detrimental materials remain in their onsite interceptor tank, thereby minimizing environmental exposure through the effluent sewer system.

Reduced pollution: Orenco Effluent Sewers do not utilize manholes and lift stations that can become overflow points during floods and times of heavy surface water runoff. Untreated sewage is kept out of the environment.

LEED Profile — Orenco® Effluent Sewers

Background

The Leadership in Energy and Environmental Design (LEED) Green Building Certification (GBC) for new commercial buildings and major renovations is an important accreditation for today's environmentally aware designers and builders. With increasing interest in environmental sustainability and efficiency, more designers and builders are seeking LEED Certification for their projects. Orenco's Effluent Sewers can help you gain LEED GBC.

Energy & Atmosphere

EA Credit 1: Optimized Energy Performance: Passive primary treatment take place inside each property's interceptor tank, reducing power requirements at a downstream municipal treatment plant.

EA Credit 1: Optimized Energy Performance: Orenco's low-horsepower (1/2 hp), high-head effluent pumps run for just minutes per day, resulting in a far more energyefficient method of treating wastewater than is provided by grinder pumps and gravity systems with lift stations.

EA Credit 1: Optimized Energy Performance: Orenco Effluent Sewers are completely watertight, so they do not suffer the inflow and infiltration common to gravity sewers, eliminating unnecessary power usage to convey and treat extra liquid.

Water Efficiency

WE Credit 1: Water Efficient Landscaping: An Orenco Effluent Sewer coupled with an AdvanTex® Treatment System can provide recycled water for subsurface irrigation.

WE Credit 2: Innovative Wastewater Technologies: An Orenco Effluent Sewer coupled with an AdvanTex Treatment System and soil dispersal can recharge the local aquifer.

Sustainable Sites

SS Prerequisite 1: Construction Activity Pollution Prevention: Orenco Effluent Sewers use small pipe and pressurized flow, which allows for shallower burial depth than gravity collection allows. This lessens site disturbance and enables the use of small, fuel-efficient excavation equipment. Minimizing digging reduces potential erosion and airborne dust.

SS Credit 5.2: Maximize Open Space: Effluent Sewers enable developers to cluster homes more closely together than is possible with individual septic systems, allowing for a higher ratio of open space to development footprint, which promotes biodiversity.

Materials & Resources

MR Credit 4: Recycled Content: High Density Polyethylene (HDPE) piping with recycled content can be used for collection lines.

Innovation & Design

ID Credit 1: Innovation in Design: Orenco Effluent Sewers can be a key feature in designs exceeding performance standards set by the "LEED for New Construction Green Building Rating System," and also in areas of innovative performance not specifically addressed by LEED.

Company

Orenco Systems®, Inc. has been designing, manufacturing, and distributing leading-edge wastewater equipment since 1981. Most of the company's 200-plus employees work out of a 26-acre (10 ha) headquarters site in Sutherlin, Oregon that includes sales, manufacturing, engineering, and research facilities. More than 125 distributors sell Orenco's product lines throughout the U.S., Canada, Australia, New Zealand, and parts of Europe.

Contact

Orenco Systems® Inc., 800-348-9843. For more information, go to www.orenco.com. For information on the environmental advantages of our products, go to www.orenco.com/systems/green.cfm.



Orenco Systems®
Incorporated

*Changing the Way the
World Does Wastewater®*

800-348-9843
www.orenco.com