

Wastewater Management Section

List of Registered On-site Treatment and Distribution Products

As Established in Chapter 246-272A WAC

July 2022



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NOTE:

The presence of a product on this list does not constitute approval of marketing, advertising, or labeling practices employed by a manufacturer, nor is it an affirmation of manufacturer claims of product performance. Registration listing does not constitute endorsement of these products by the Washington State Department of Health. Information obtained from the sources listed is the sole responsibility of the manufacturer or other provider.

Links to external resources are provided as a public service, and do not imply endorsement by the Washington State Department of Health.

SECTION 1 – Introduction and Overview

Chapter 246-272A WAC establishes a process for proprietary on-site product registration with requirements for testing, testing protocols, performance thresholds levels, and application processes. This registration process replaces the previous requirement of having to be on the “List of Approved Systems and Products” (Approved List). When the Washington State Department of Health (DOH or “the department”) has determined that a product meets the registration requirements that are established in the rules, the product will be placed on the “List of Registered On-site Treatment and Distribution Products” (Registered List). This document is a revision to the initial edition of the “Registered List”.

Beginning March 16, 2007, product registration became a condition of approval for use of all proprietary treatment and distribution products, and local health jurisdictions may only permit products that are on the “Registered List”.

All types of sewage technologies must either have standards for use described in WAC 246-272A or departmental Recommended Standards and Guidance (RS&G) before the local health officer may permit them. Specific conditions for the use of each system technology or product are described in the RS&G documents relevant to the proprietary device. The most recently published edition of any RS&G can be obtained from our website on: <http://www.doh.wa.gov/CommunityandEnvironment/WastewaterManagement/FormsPublications.aspx>.

Product models, rated capacities, treatment processes, treatment levels, and dimensional descriptions information are included in the tables of this document. In addition, terms used in this document, which need definition or clarification, are provided in Section 4 - Glossary of terms. This information is provided to facilitate equipment selection and promote proper application of the technology.

We welcome suggestions to improve this document. If you identify an error or have an idea about how to improve the usefulness of this document, feel free to contact staff in the Wastewater Management Program at the Washington State Department of Health, Office of Environmental Health and Safety at (360) 236-3330.

Overview

Treatment components or distribution technologies, both proprietary and public domain (other than a sewage tank, or a gravel-filled drainfield fed either by a gravity or pressure distribution network), must be on the Department's "Registered List" before they may be permitted by the local health officer. Prior to placement on this list, the following must occur:

1. For all treatment components and distribution technologies other than sewage tanks, the Department of Health, with the assistance of the Technical Advisory Group (TAG), may develop guidance in the form of Recommended Standards and Guidance (RS&G) for a particular type of technology. Each RS&G may include application, design, installation, operation, monitoring and maintenance, and performance expectation information.
2. For proprietary treatment and distribution products, the manufacturer has submitted an application for registration containing the information required by WAC 246-272A. For proprietary treatment products, this information shall verify that the performance of the proprietary treatment product was tested according to the appropriate testing protocol and include the results of the testing.
3. The department will verify the information on the application and register the product if all the required information and data are included in the application.

Categories of Treatment Product and Treatment Levels

This document registers the category and treatment level that is met by a treatment product. Applicable terms to help understand this listing include:

Category 1 treatment product – a treatment component designed to treat sewage typical of a residential source when septic tank effluent is anticipated to be equal to or less than Treatment Level E (*See Table 1*).

Category 2 treatment product – a treatment component designed to treat high-strength sewage when septic tank effluent is anticipated to be greater than Treatment Level E. Examples of sources of high-strength sewage usually include restaurants, grocery stores, mini-marts, group homes, medical clinics, or residences.

Category 3 treatment product – a black water (human wastes) component of residential sewage. The primary examples are composting and incinerating toilets.

Treatment Level – one of six levels (A, B, C, D, E, & N) noted in Table 1 and used in WAC 246-272A to:

- (a) Identify treatment component performance demonstrated requirements specified in WAC 246-272A-0110, and

- (b) Match site conditions of vertical separation and soil type with treatment components. Treatment levels used in WAC 246-272A are not intended to be applied as field compliance standards. Their intended use is for establishing treatment product performance in a product testing setting under established protocols by qualified testing entities.

Table 1. Treatment Levels

Level	Parameters				
	CBOD ₅ (mg/L)	TSS (mg/L)	O&G (mg/L)	FC (#/100 ml)	TN (mg/L)
A	10	10	----	200	----
B	15	15	----	1,000	----
C	25	30	----	50,000	----
D	25	30	----	----	----
E	125	80	20	----	----
N	----	----	----	----	20

Note:

Values for Levels A - D are maximum 30-day values (averages for CBOD₅, TSS, and geometric mean for FC.) All 30-day averages throughout the test period must meet these values in order to be registered at these levels. Values for Levels E and N are derived from full test averages.

SECTION 2 – List of Manufacturers of Registered Proprietary On-site Products

This section presents the current list of manufacturers who have submitted proprietary treatment and/or proprietary distribution products for DOH review and were found to meet the registration requirements in WAC 246-272A. This list notes the manufacturer, the manufacturer's contact information, products' names/models that have been reviewed and registered by DOH, and product treatment processes or type. To determine what the specific products are registered for, see Section 3.

If a certain manufacturer or product is not listed, or if a listed manufacturer's specific model number is not included on the list, the product IS NOT APPROVED for use in Washington State and may not be permitted by the local health officer.

Disclaimer

The manufacturers' contact information is presented here for information purposes only. Product registration and listing does not constitute departmental approval of marketing, advertising or labeling practices employed by a manufacturer, nor does it constitute an endorsement of these products, nor a preference among the manufacturers.

List of Registered On-site Treatment and Distribution Products
Effective Date: July 2022

Manufacturers of Registered Category 1 Proprietary On-site <i>Treatment</i> Products			
Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
<p>Anua PO Box 77457 Greensboro, NC 27417</p> <p>Tel: (800) 787-2356 Tel: (336) 547-9338 Fax: (336) 547-8559 Web: www.anuainternational.com</p>	<p>Puraflo Peat Fiber Biofilter Wastewater Treatment System</p> <p>P150N 3A P150N 3B P150N 4A P150N 4B P150N 5A P150N 5B P150N 6A P150N 6B P150N 7B P150N 8B P150N 9B P150N 10B</p> <p>Type "A" models have weep holes. Type "B" models are closed bottomed.</p>	<p>450 450 600 600 750 750 900 900 1050 1200 1350 1500</p>	<p>Attached Growth Single-pass Packed Bed Filter</p>
<p>Bio-Microbics, Inc. 16002 West 110th Street Lenexa, KS 66219</p> <p>Tel: (800) 753-3278 Tel: (913) 422-0707 Fax: (913) 422-0808 E-mail: onsite@biomicrobics.com Web: www.biomicrobics.com</p>	<p>FAST Wastewater Treatment System*</p> <p>RetroFAST 0.375 MicroFAST 0.5 MicroFAST 0.625** MicroFAST 0.75 MicroFAST 0.9 MicroFAST 1.5 MicroFAST 3.0** MicroFAST 4.5** MicroFAST 9.0**</p> <p>*These models are also listed in Category 2.</p>	<p>375 500 625 750 900 1500 3000 4500 9000</p>	<p>Attached & Suspended Growth</p>

List of Registered On-site Treatment and Distribution Products

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Bio-Microbics, Inc. (continued)	**For Total Nitrogen reduction supplemental BOD may be applied in the form of MicroC™ when the influent BOD:TKN ratio is less than 4:1. For Total Nitrogen applications with or without the addition of MicroC™ the system design will require a review by Bio-Microbics, Inc.		
	FAST, Wastewater Treatment System with the Salcor 3G UV disinfection unit* MicroFAST 0.5 with the Salcor 3G MicroFAST 0.625 with the Salcor 3G – 2** MicroFAST 0.75 with the Salcor 3G - 2 MicroFAST 0.9 with the Salcor 3G - 2 MicroFAST 1.5 with the Salcor 3G - 3 MicroFAST 3.0 with the Salcor 3G – 6** MicroFAST 4.5 with the Salcor 3G – 7** MicroFAST 9.0 with the Salcor 3G – 7** *MicroFAST treated effluents are split to multiple Salcor 3G units proportionally so that each UV unit receives no more than 500 gpd. **For Total Nitrogen reduction supplemental BOD may be applied in the form of MicroC™ when the influent BOD:TKN ratio is less than 4:1. In model applications with or without the addition of MicroC™ the system design will require a review by Bio-Microbics, Inc.	500 625 750 900 1500 3000 4500 9000	Attached & Suspended Growth & UV Disinfection Treatment Sequence

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
	<p>FAST, Wastewater Treatment System with the Norweco AT 1500 UV disinfection unit*</p> <p>MicroFAST 0.5 MicroFAST 0.625 MicroFAST 0.75 MicroFAST 0.9 MicroFAST 1.5 MicroFAST 3.0</p> <p>*Required influent characteristics: 100 GPD – 4,320 GPD (3 gallons per minute) with 30 mg/L BOD and 30 mg/L TSS.</p> <p>**For Total Nitrogen reduction supplemental BOD may be applied in the form of MicroC™ when the influent BOD:TKN ratio is less than 4:1. In model applications with or without the addition of MicroC™ the system design will require a review by Bio-Microbics, Inc.</p>	<p>500 625 750 900 1500 3000</p>	<p>Attached & Suspended Growth & UV Disinfection Treatment Sequence</p>
	<p>BioBarrier MBR, Wastewater Treatment System</p> <p>MBR 0.5 MBR 1.0 MBR 1.5</p>	<p>500 1000 1500</p>	<p>Membrane Bioreactor</p>
	<p>BioBarrier MBR, Wastewater Treatment System</p> <p>MBR 0.5-N MBR 1.0-N MBR 1.5-N</p> <p>Requires a three-compartment tank w/ a mixing pump in the middle chamber.</p>	<p>500 1000 1500</p>	<p>Membrane Bioreactor with Nitrogen Reduction</p>

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Busse Green Technologies, Inc 1101 S Euclid Avenue Oak Park, IL 60304 Tel: (708) 204-3504 E-mail: info@busse-gt.com Web: www.busse-gt.com www.bussegt.com	Busse Wastewater Treatment System GT-400 GT-600 GT-800 GT-1000 GT-1200 *protection from freezing is required	400 600 800 1000 1200	Membrane Bioreactor
Clarus Environmental – Zoeller Family of Water Solutions 3649 Cane Run Road Louisville, KY 62025 Tel: (800) 928-7867 E-mail: wesc@zoeller.com Web: www.clarusenvironmental.com	Fusion Wastewater Treatment System ZF450 ZF600 ZF800	450 600 800	Attached & Suspended Growth
Clearstream Wastewater Systems, Inc. PO Box 7568 Beaumont, TX 77712-1500 Tel: (409) 755-1500 Email: governmentaffairs@clearstreamsystems.com	Clearstream Aerobic Treatment Units 500D/DC, 500DS/DSC, 500DST, 500DT, 500DC2, 500DC2P, 500DC3-500, 500DC3-7500 600D/DC, 600DT, 600DC2, 600DC3 1000DD, 1000DCD, 1000DTD	500 500 600 1000	Extended aeration mode of the Activated Sludge process

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Web: www.clearstreamsystems.com Clearstream Wastewater Systems, Inc. (continued)	Clearstream 500G Series Aerobic Treatment Units with CS 120 UV disinfection unit 500G/GC, 500GS/GSC., 500GST, 500GT, 500GC2, 500GC2P, 500GC3-500, 500GC3-750	500 500	Extended aeration mode of the Activated Sludge process and UV Disinfection Treatment Sequence
	Clearstream Aerobic Treatment Units 500G/GC, 500GS/GSC, 500GST, 500GT, 500GC2, 500GC2P, 500GC3-500, 500GC3-750 600G/GC, 600GT, 600GC2, 600GC3 1000GD, 1000GCD, 1000GTD	500 500 600 1000	Extended aeration mode of the Activated Sludge process
	Clearstream Aerobic Treatment Units 500DA/DAC, 500DAS/DASC, 500DAST, 500DAT, 500DAC2, 500DAC3-500, 500DAC3-750, 500DAU 600DA/DAC, 600DAT, 600DAC2, 600DAC3, 600DAU 800DA/DAC, 800DAT, 800DAC2	500 600 800	Extended aeration mode of the Activated Sludge process
Consolidated Treatment System, Inc. 1501 Commerce Center Drive Franklin, OH 45005 Tel: (937) 746-2727	Enviro-Guard Wastewater Treatment System ENV-0.75 with the Salcor 3G UV disinfection unit	750	Suspended Growth with Filtration Process & UV Disinfection Treatment Sequence

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Fax: (937) 746-1446 E-mail: jeff@consolidatedtreatment.com Web: www.consolidatedtreatment.com Consolidated Treatment System, Inc. (continued)	Multi-Flo Wastewater Treatment System FTB-0.5 FTB-0.6 FTB-0.75 FTB-1.0 FTB-1.5	500 600 750 1000 1500	Suspended Growth with Filtration Process
	Nayadic Wastewater Treatment System M-6A-F/M-6 M-6A-C/M-6AC-F M-8A-F/M-8A M-1050-F/M-1050A M-1200-F/M-1200A M-2000-F/M-2000A	500 500 600 800 1000 1500	Suspended Growth
Delta Treatment Systems, LLC A wholly owned subsidiary of Infiltrator Water Technologies, LLC 4 Business Park Road / PO Box 768 Old Saybrook, CT 06475 Tel: (800) 221-4436 Fax: (800) 577-7000 E-mail: ssirico@infiltratorwater.com Web: www.deltatreatment.com	Whitewater DF Series Aerobic Treatment Units DF75 DF100 DF100A DF150	750 1000 1000 1500	Suspended Growth
	Whitewater DF Series Aerobic Treatment Units with the Salcor 3G UV disinfection unit DF50 with Salcor 3G DF60 with Salcor 3G	500 600	Suspended Growth & UV Disinfection Treatment Sequence

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Delta Treatment Systems (continued)	ECOPOD Fixed Film Wastewater Treatment System E50 E60	500 600	Attached Growth
	ECOPOD Fixed Film Wastewater Treatment System with the Salcor 3G UV disinfection unit E50 with Salcor 3G E60 with Salcor 3G	500 600	Attached Growth & UV Disinfection Treatment Sequence
	ECOPOD N Series Wastewater Treatment System E50NCA E50-N-IM1060 E60NCA E60-N-IM1060 E75NCA E75-N-IM1060 E100NCA E150NCA E200-NFF E250-NFF E300-NFF	500 500 600 600 750 750 1000 1500 2000 2500 3000	Attached Growth

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
	ECOPOD N Series Wastewater Treatment System with the Salcor 3G UV disinfection unit E50NCA E50-N-IM1060 E60NCA E60-N-IM1060 E75NCA E75-N-IM1060 E100NCA E150NCA E200-NFF E250-NFF E300-NFF	500 500 600 600 750 750 1000 1500 2000 2500 3000	Attached Growth and UV Disinfection Treatment Sequence
Ecological Tanks, Inc 2247 Highway 151 North Downsville, LA 71234 Tel: (800) 277-8179 Tel: (318) 644-0397 Fax: (618) 644-7257 E-mail: aquasafe@bayou.com Web: www.etiaquasafe.com	Aqua Safe Series AS500 AS600 AS750 AS1000 AS1500 AS500L AS600L AS800L AS1100L Aqua Safe AS600 + 4NR	500 600 750 1000 1500 500 600 800 1100 600	Suspended Growth Suspended Growth

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
	Aqua Safe AS600 + 4NR w/ Disinfector UV and Salcor 3G UV	600	Suspended Growth & UV Disinfection Treatment Sequence
	Aqua Aire Series AA500 AA600 AA750 AA800 AA1000 AA1200 AA1500	500 600 750 800 1000 1200 1500	Suspended Growth
Eljen Corporation 90 Meadow Rd Windsor, CT 06095 Tel: (800) 444-1359 Fax: (860) 610-0427 E-mail: jking@eljen.com Web: www.eljen.com	GSF A42	450 600 750 900 1050 1200 1350 1200 1350 1500	Single pass Attached Growth Geotextile Sand Filter
Enviro-Flo, Inc. 151 Custom Drive Flowood, MS 39232	NuWater** Model B-500 with Salcor 3G	500	Suspended Growth & UV Disinfection Treatment Sequence

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Tel: (877) 836-8476 Tel: (601) 939-2948 Fax: (601) 939-3526 E-mail: derrick@enviro-flo.net Web: www.enviro-flo.com **NOTE: This product was formerly named Bio-Robix.	Enviro-Flo Wastewater Treatment System E-500 E-550 E-600 E-750 E-1000	500 550 600 750 1000	Suspended Growth
	NuWater** BNR 500 BNR 600 BNR750 BNR850 BNR1000 BNR1500	500 600 750 850 1000 1500	Suspended Growth
	NuWater** BNR 500 with Salcor 3G UV BNR 600 with Salcor 3G UV	500 600	Suspended Growth & UV Disinfection Treatment Sequence
Fuji Clean, USA, LLC 41-2 Greenwood Road Brunswick, ME 04011 Tel: (207) 406-2927 Fax: (207) 406-2929 E-mail: info@fujicleanusa.com Web: www.fujicleanusa.com	CEN5 with Salcor 3G UV CEN7 with Salcor 3G UV CEN10 with Salcor 3G UV	450 630 900	Attached & Suspended Growth with UV Disinfection Treatment Sequence

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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Glendon BioFilter Technologies, Inc. PO Box 2585 Gig Harbor, WA 98335 Tel: (206) 819-8803 E-mail: paulv@glendon.com Web: www.glendon.com	Glendon BioFilter Treatment System M31* *Multiple units, in the same or a variety of sizes, may be used in parallel to accomplish daily design flows to 3,500 gpd.	120 (per each prefabricated basin)	Upflow Media Filtration
	Glendon BioFilter Treatment System M32* *Multiple units, in the same or a variety of sizes, may be used in parallel to accomplish daily design flows to 3,500 gpd.	120 (per each prefabricated basin)	Upflow Media Filtration

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<p>Lowridge Onsite Technologies, LLC PO Box 1179 Lake Stevens, WA 98258</p> <p>Tel: (877) 476-8823 E-mail: info@lowridgetech.com Web: www.lowridgetech.com</p>	<p>LOWeFLOW™ System with the Salcor 3G UV disinfection unit</p>	<p>500 600 1000 1500 2000 2500 3000 3500</p>	<p>Attached Growth Multi-pass Packed Bed Filter</p>
	<p>LOT-LF-500 – 1 UV Unit LOT-LF-600 – 2 UV Units LOT-LF-1000 – 2 UV Units LOT-LF-1500 – 3 UV Units LOT-LF-2000 – 4 UV Units LOT-LF-2500 – 5 UV Units LOT-LF-3000 – 6 UV Units LOT-LF-3500 – 7 UV Units</p>		
	<p>OSCAR-LOWeFLOW™ System</p>		
	<p>OSCAR™ only used in conjunction with LOWeFLOW™</p>		
	<p>OS-240-5 OS-300-5 OS-300-7 OS-360-5 OS-360-7 OS-450-5 OS-480-5 OS-480-7 OS-600-5 OS-600-7</p>	<p>240 360 480 600 1000 1500 2000 2500 3000 3500</p>	<p>Attached Growth Multipass Packed Bed Filter and Attached Growth Single-pass Sand Filter Treatment Sequence</p>
	<p>OSCAR-II Series</p>		
	<p>OSII-240 OSII-300 OSII-360 OSII-450 OSII-480 OSII-600</p>	<p>240 300 360 450 480 600</p>	<p>Treatment Vessel to Dosing Tank w/ headworks dosed into OSCAR Coils on 6" ASTM C-33 sand Treatment Sequence</p>
	<p>*Multiple OSCAR coil units, in the same or a combination of sizes, may be used in series and/or</p>		

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Lowridge Onsite Technologies, LLC (continued)	<p>parallel to accomplish daily design flows up to 3,500 gpd. Contact the manufacturer for specific design details.</p> <p>OSCAR-III Series OSIII – 240 OSIII – 300 OSIII – 360 OSIII – 450 OSIII – 480</p> <p>*Multiple OSCAR coil units, in the same or a combination of sizes, may be used in series and/or parallel to accomplish daily design flows up to 3,500 gpd. Contact the manufacturer for specific design details.</p> <p>OSCAR-in-a-Box Series OSB - 240 OSB - 300 OSB - 360 OSB - 450 OSB - 480 OSB - 600</p>	<p>240 300 360 450 480</p> <p>240 300 360 450 480 600</p>	<p>Treatment Vessel to Dosing Tank w/ headworks dosed into OSCAR Coils on 12” ASTM C-33 sand Treatment Sequence</p> <p>Treatment Vessel to Dosing Tank w/ headworks dosed into OSCAR Coils on 12” ASTM C-33 sand inside a PVC-lined containment vessel with underdrain-effluent collection to dispersal component.</p>

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
<p>Norweco, Inc. 220 Republic Street Norwalk, OH 44857-1196</p> <p>Tel: (419) 668-4471 Fax: (419) 663-5440 E-mail: customerservice@norweco.com Web: www.norweco.com</p>	<p>Singulair Wastewater Treatment System (960 series)</p> <p>Singulair 960-500 Singulair 960-500 Singulair 960-750 Singulair 960-750 Singulair 960-1000 Singulair 960-1250 Singulair 960-1500 Singulair 960LP-500 Singulair 960LP-500 Singulair 960LP-1000 Singulair 960-OP-500 Singulair 960-OP-500 Singulair 960-OP-1000</p>	<p>500 600 750 800 1000 1250 1500 500 600 1000 500 600 1000</p>	<p>Suspended Growth with Filtration Process</p>
	<p>Singulair Wastewater Treatment System (TNT series)</p> <p>Singulair TNT-500 Singulair TNT-500 Singulair TNT-750 Singulair TNT-750 Singulair TNT-1000 Singulair TNT-1250 Singulair TNT-1500 Singulair TNT-OP-500 Singulair TNT-OP-500 Singulair TNT-OP-1000</p>	<p>500 600 750 800 1000 1250 1500 500 600 1000</p>	<p>Suspended Growth with Filtration Process</p>

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Norweco, Inc. (continued)	Singulair Wastewater Treatment System TNT series with the Norweco AT1500 UV Unit Singulair TNT-500 – 1 UV Unit Singulair TNT-500 – 2 UV Units Singulair TNT-750 – 2 UV Units Singulair TNT-750 – 2 UV Units Singulair TNT-1000 – 2 UV Units Singulair TNT-1250 – 3 UV Units Singulair TNT-1500 – 3 UV Units Singulair TNT-OP-500 – 1 UV Unit Singulair TNT-OP-500 – 2 UV Units Singulair TNT-OP-1000 – 2 UV Units	 500 600 750 800 1000 1250 1500 500 600 1000	 Suspended Growth with Filtration Process & UV Disinfection Treatment Sequenc
	Hydro-Kinetic 600 FEU with Norweco AT 1500 UV disinfection unit	500	Activated Sludge, Anaerobic, Anoxic, Extended Aeration, Gravity Settling, and Filtration with UV Disinfection Treatment Sequence

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Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
<p>Orenco Systems Inc. 814 Airway Avenue Sutherlin, Oregon 97479</p> <p>Tel: (800) 230-9580 Tel: (541) 459-4449 Fax: (541) 459-2884 E-mail: jsoulia@orencosystems.com Web: www.orencosystems.com</p>	<p>AdvanTex® Wastewater Treatment System</p> <p>AX20RT (2 or 3 compartment recirculating tank)</p> <p>AX20</p> <p>AX25RT</p> <p>*AX20 – 2</p> <p>*AX20 – 3</p> <p>*AX20 – 4</p> <p>*AX100</p> <p>*AX100 – 2</p>	<p>500</p> <p>500</p> <p>625</p> <p>1000</p> <p>1500</p> <p>2000</p> <p>2500</p> <p>3500</p>	<p>Attached Growth Multipass Packed Bed Filter</p>
	<p>AdvanTex® AX Series with Orenco UV disinfection unit</p> <p>AX20RT (2 or 3 compartment recirculating tank)</p> <p>AX20 with Orenco UV unit</p> <p>AX25RT with Orenco UV unit</p> <p>*AX20 – 2 with Orenco UV units - 2</p> <p>*AX20 – 3 with Orenco UV units - 3</p> <p>*AX20 – 4 with Orenco UV units - 4</p> <p>*AX100 with Orenco UV units - 5</p> <p>*AX100 – 2 with Orenco UV units -7</p> <p>*System applications greater than 6 bedrooms and applications other than single family residential will require a design review by Orenco Systems, Inc.</p>	<p>500</p> <p>500</p> <p>625</p> <p>1000</p> <p>1500</p> <p>2000</p> <p>2500</p> <p>3500</p>	<p>Attached Growth Multipass Packed Bed Filter & UV Disinfection Treatment Sequence</p>

List of Registered On-site Treatment and Distribution Products
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Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Orenco Systems Inc. (continued)	AdvanTex® AX-MAX Series (with discharge pump assembly) AX-MAX075-14 AX-MAX125-21 AX-MAX175-28	1,875 3,125 3,500	Attached Growth Multipass Packed Bed Filter
	AdvanTex AX-MAX Series with Orenco UV disinfection units (without discharge pump assembly) AX-MAX075-14 with Orenco UV units - 4 AX-MAX125-21 with Orenco UV units - 7 AX-MAX175-28 with Orenco UV units - 7	1,875 3,125 3,500	Attached Growth Multipass Packed Bed Filter & UV Disinfection Treatment Sequence
SeptiTech A subsidiary of Bio-Microbics, Inc 69 Holland Street Lewiston, ME 04240 Tel: (207) 333-6940 Fax: (207) 333-6944 E-mail: info@septitech.com Web: www.septitech.com	SeptiTech Treatment System STAAR 0.5 STAAR 0.75 STAAR 1.0 STAAR 1.2 STAAR 1.5	440 660 880 1200 1500	Trickling Filter

List of Registered On-site Treatment and Distribution Products
 Effective Date: July 2022

Manufacturers of Registered Category 1 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
SeptiTech (continued)	SeptiTech Treatment System with nitrogen reduction STAAR 0.5D STAAR 0.75D STAAR 1.0D STAAR 1.2D STAAR 1.5D	440 660 880 1200 1500	Trickling Filter
Spec Industries, Inc 3078 Tarpon Drive #201 Las Vegas, NV 89120 Tel: (702) 558-4444 Fax: (702) 558-4563 E-mail: RogerO@specind.biz Web: www.specind.biz	Alternating Intermittent Recirculating Reactor AIRR 714	490	Attached growth Multipass Packed Bed Filter

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Manufacturers of Registered Category 2 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (gpd)	Treatment Process
Aqua Test Inc. PO Box 1116 Black Diamond, WA 98010 Tel: 1-800-221-3159 Tel: (425) 432-9360 Fax: (425) 413-9431 E-mail: office@aquatestinc.com Web: www.aquatestinc.com	NIBBLER Wastewater Treatment Process NIBBLER SBP & NIBBLER CBP	200 (when O&G is ≤50 mg/L) 137.5 (when O&G is >50 mg/L)	Attached & Suspended Growth
	NIBBLER Jr.	500	Attached & Suspended Growth
Bio-Microbics, Inc. 16002 West 110 th Street Lenexa, KS 66219 Tel: (800) 753-3278 Tel: (913) 422-0707 Fax: (913) 422-0808 E-mail: onsite@biomicrobics.com Web: www.biomicrobics.com	FAST Wastewater Treatment System MicroFAST 0.5 MicroFAST 0.75 MicroFAST 0.9 MicroFAST 1.5 MicroFAST 3.0 MicroFAST 4.5 MicroFAST 9.0 These models are also used in Category 1. Models designed to treat high-strength sewage with the O&G influent level to the MicroFAST < 50 mg/L. Models may be used in non-single family residential designs when the design is reviewed by Bio-Microbics Inc. and documentation of the review is provided.	500 750 900 1500 3000 4500 9000	Attached & Suspended Growth

List of Registered On-site Treatment and Distribution Products
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Manufacturers of Registered Category 3 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (persons or uses/day)	Treatment Process
Clivus Multrum, Inc. 15 Union Street Lawrence, MA 01840 Tel: (800) 425-4887 Fax: (978) 557-9658 E-mail: brian@clivusmultrum.com Web: www.clivusmultrum.com	Clivus Multrum Composting Toilet M1 M2 M3 M10 M12 M15 M18 M22 M28 M32 M35 M54ADA Outback	10-uses/day 15 uses/day 40 uses/day 60 uses/day 80 uses/day 100 uses/day 120 uses/day 80 uses/day 120 uses/day 110 uses/day 180 uses/day 60 uses/day 20 uses/day	Composting Toilet
Research Products / Blankenship 2639 Andjon Drive Dallas, TX 75220 Tel: (800) 527-5551 Tel: (214) 358-4238 Fax: (214) 350-7919 E-mail: sales@incinolet.com Web: www.incinolet.com	Incinolet Electric Incinerating Toilet CF TR WB	4-person 8-person 4/8-person	Incinerating Toilet

List of Registered On-site Treatment and Distribution Products
 Effective Date: July 2022

Manufacturers of Registered Category 3 Proprietary On-site *Treatment* Products

Manufacturer/Contact Information	Product Name/Model	Rated Capacity (persons or uses/day)	Treatment Process
Sun-Mar Corporation 5370 South Service Road Burlington, Ontario, Canada L7L 5L1 Tel: (800) 461-2461 Tel: (905) 332-1314 Fax: (905) 332-1315 E-mail: joelocicero@sun-mar.com Web: www.sun-mar.com	Sun-Mar Composting Toilet Excel Centrex 2000 A/F Centrex 2000 A/F AC/DC Centrex 3000 A/F Centrex 3000 A/F AC/DC Compact Spacesaver Sun-Mar Mobile Excel NE	3-person residential 4-person residential 3-person residential 5-person residential 4-person-residential 1-person residential 1-person residential 1-person residential 2-person residential	Composting Toilet

List of Registered On-site Treatment and Distribution Products
 Effective Date: July 2022

Manufacturers of Registered Proprietary On-site *Distribution* Products

Manufacturer/Contact Information	Product Name/Model	Type of Distribution Product
<p>Geoflow, Inc. 506 Tamal Plaza Corte Madera, CA 94925</p> <p>Tel: (800) 828-3388 Tel: (415) 927-6000 Fax: (415) 927-0120 E-mail: krf@geoflow.com Web: www.geoflow.com</p>	<p>Wasteflow Pressure Compensating WFPC16-2:9,12,18,24 WFPC16-4:9,12,18,24 WFPCas16-2:9,12,18,24 WFPCas16-4:9,12,18,24</p> <p>Wasteflow Classic WFCL16-4:9,12,18,24</p>	<p>Dripline</p>
<p>Infiltrator Water Technologies, LLC 4 Business Park Road PO Box 768 Old Saybrook, CT 06475</p> <p>Tel: (800) 221-4436 Tel: (860) 577-7100 Fax: (860) 577-7001 E-mail: info@infiltratorsystems.net Web: www.infiltratorwater.com</p>	<p>Infiltrator Chamber Leach Field System</p> <p>Standard ARC 36 ARC 36HC ARC 36 LP ARC 24 14" High Capacity 11" Standard Bio 2 Bio 3 High Capacity Equalizer 36 Equalizer 24 Quick4 Standard Quick4 High Capacity Quick4 Equalizer 36 Quick4 Equalizer 24 Quick4 Plus Standard Quick4 Plus Standard Low Profile</p>	<p>Gravelless Chamber</p>

List of Registered On-site Treatment and Distribution Products
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Manufacturers of Registered Proprietary On-site *Distribution* Products

Manufacturer/Contact Information	Product Name/Model	Type of Distribution Product
Infiltrator Water Technologies, LLC Continued	Engineered Aggregate Systems 1003-H 1003-T 1203-H 1003-H-GEO 1003-T-GEO 1203-H-GEO FTSG 103H-1 FTSG 103T-1 FTSG 123H-1	Gravel Substitute
Netafim 5470 E. Home Avenue Fresno, CA 93727 Tel: (888)-638-2346 Tel: (585) 615-6440 E-mail: mai.thao@netafimusa.com Web: www.netafimusa.com	Bioline Dripperline* 0.4 GPH Dripper 0.6 GPH Dripper 0.9 GPH Dripper *"Techfilter" disk filter with root inhibitor implanted into replaceable disk cartridge is optional.	Dripline

SECTION 3 – List of Registered On-site Treatment and Distribution Products

The following pages present the current list of registered treatment and distribution products by product type, under the categories and allowances provided in WAC 246-272A. The list includes lists of the following:

- Treatment products
 - Categories 1, 2, & 3
 - Treatment levels met as verified by test results using the protocol required by WAC 246-272A
 - Both proprietary and public domain
- Proprietary distribution technologies
 - Gravelless Distribution Products
 - Subsurface Dripline Products

To locate the contact information for a product, find the product in the alphabetical list of manufacturers in Section 2. Unless this list contains specific model numbers, all models listed in Section 2 can be assumed to meet the applicable requirements for listing in this section.

If a certain product is not listed, or if a listed manufacturer's specific model number is not included on the list, the product IS NOT APPROVED for use in Washington State and may not be permitted by the local health officer.

Disclaimer

Product registration and listing does not constitute departmental approval of marketing, advertising, or labeling practices employed by a manufacturer, nor does it constitute an endorsement of these products, nor a preference among the manufacturers.

Registered On-site *Treatment* Products

Category 1

Proprietary Product Name / Model	TLA	TLB	TLC	TLD	TLE	TLN
AdvanTex AX-MAX075-14, AX-MAX125-21, AX-MAX175-28 with Orenco UV Units	✓	✓				✓
AdvanTex AX20RT, AX20, AX25RT, AX20-2, AX20-3, AX20-4, AX100, AX100-2			✓	✓		✓
AdvanTex AX-MAX, AX-MAX075-14, AX-MAX125-21, AX-MAX175-28			✓	✓		✓
AIRR 714				✓	✓	
Aqua Aire Series AA500, AA600, AA750, AA800, AA1000, AA1200, AA1500				✓		
Aqua Safe AS600 + 4RN				✓	✓	
Aqua Safe AS600 + 4RN w/ Disinfectant UV and Salcor 3G UV		✓				
Aqua Safe Series AS500, AS600, AS750, AS1000, AS1500, AS500L, AS600L, AS800L, and AS1100L				✓	✓	
BioBarrier MBR 0.5, 1.0, and 1.5	✓	✓	✓	✓		
BioBarrier MBR 0.5-N, 1.0-N, and 1.5-N	✓	✓	✓	✓		✓
Busse MBR GT400, GT500, GT800, GT1000, & GT1200	✓	✓	✓	✓		
Clearstream 500 G Series Aerobic Treatment Units with CS 120 UV disinfection unit 500G/GC, 500GS/GSC, 500GST, 500GT, 500GC2, 500GC2P, 500GC3-500, 500GC3-750	✓					
Clearstream Aerobic Treatment Units 500D/DC, 500DS/DSC, 500DST, 500DC2, 500DC2P, 500DC3-500, 500DC3-750, 600D/DC, 600DT, 600DC2, 600DC3, 1000DD, 1000DCD, 1000DTD		✓				✓
Clearstream Aerobic Treatment Units 500G/GC, 500GS/GSC, 500GST, 500GT, 500GC2, 500GC2P, 500GC3-500, 500GC3-750, 600G/GC, 600GT, 600GC2, 600GC3, 1000GD, 1000GCD, 1000GTD			✓			
Clearstream Aerobic Treatment Units 500DA/DAC, 500DAS/DASC, 500DAST, 500DAT, 500DAC2, 500DAC3-500, 500DAC3-750, 500DAU, 600DA/DAC, 600DAT, 600DAC2, 600DAC3, 600DAU, 800DA/DAC, 800DAT, 800DAC2		✓				
ECOPOD E50 and E60 with Salcor 3G UV		✓				
ECOPOD E50, E60				✓	✓	
ECOPOD E50NCA, E60NCA, E75NCA, E100NCA, E150NCA, E200-NFF, E250-NFF, E300-NFF, E50-N-IM1060, E60-N-IM1060, E75-N-IM1060			✓	✓		
ECOPOD E50NCA, E60NCA, E75NCA, E100NCA, E150NCA, E200-NFF, E250-NFF, E300-NFF, E50-N-IM1060, E60-N-IM1060, E75-N-IM1060 with Salcor 3G UV	✓	✓				

List of Registered On-site Treatment and Distribution Products
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Proprietary Product Name / Model	TLA	TLB	TLC	TLD	TLE	TLN
Eljen GSF/A42			✓			
Enviro-Flo E-500, E-550, E-600, E-750, & E-1000				✓	✓	
Enviro-Guard ENV-0.75 with Salcor 3G UV	✓	✓				
Fuji Clean CEN5, CEN7, CEN10 with Salcor 3G UV	✓	✓				
Fusion ZF450, ZF600, ZF800				✓	✓	
Glendon BioFilter M31	✓	✓	✓			
Glendon BioFilter M32	✓	✓	✓			
Hydro-Kinetic 600 FEU with Norweco AT 1500 UV	✓	✓				✓
LOWeFLOW™ System with OSCAR™		✓	✓	✓		
LOWeFLOW™ System with the Salcor 3G UV LOT-LF-500, 600, 1000, 1500, 2000, 2500, 3000, 3500		✓		✓		
MicroFAST 0.5, 0.625, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0				✓	✓	✓
MicroFAST 0.5, 0.625, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0 with Salcor 3G UV	✓	✓				✓
MicroFAST 0.5, 0.625, 0.75, 0.9, 1.5, 3.0 with Norweco AT 1500 UV	✓	✓				✓
Multi-Flo FTB-0.5, FTB-0.6, FTB-0.75, FTB-1.0, FTB-1.5				✓	✓	
Nayadic M-6A-F/M-6, M-6A-C/M-6AC-F, M-8A-F/M-8A, M-1050-F/M-1050A, M-1200-F/M-1200A, M-2000-F/M-2000A				✓	✓	
NuWater B-500 with Salcor 3G UV		✓				
NuWater BNR-500, BNR-600		✓	✓	✓		
NuWater BNR-500, BNR-600 with Salcor 3G UV	✓	✓				
OSCAR-II Series: OSII-240, OSII-300, OSII-360, OSII-450, OSII-480, OSII-600			✓			
OSCAR-III Series OSIII – 240, OSIII – 300, OSIII – 360, OSIII – 450, OSIII - 480		✓	✓			
OSCAR-in-a-Box™		✓	✓			
Puraflo Peat Fiber Biofilter P150N 3A, P150N 4A, P150N 5A, and P150N 6A					✓	
Puraflo Peat Fiber Biofilter P150N 3B, P150N 4B, P150N 5B, P150N 6B, P150N 7B, P150N 8B, P150N 9B, and P150N 10B			✓	✓	✓	
RetroFAST 0.375					✓	✓
SeptiTech STAAR 0.5,0.75,1.0,1.2,1.5				✓	✓	
SeptiTech STAAR: 0.5D,0.75D,1.0D,1.2D,1.5D					✓	✓
Singular 960-500, 960-750, 960-1000, 960-1250, 960-1500, 960LP-500, 960LP-1000, 960-OP-500, 960-OP-1000				✓	✓	

List of Registered On-site Treatment and Distribution Products
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Proprietary Product Name / Model	TLA	TLB	TLC	TLD	TLE	TLN
Singulair TNT-500, TNT-750, TNT-1000, TNT-1250, TNT-1500, TNT-OP-500, TNT-OP-1000				✓	✓	
Singulair TNT-500, TNT-750, TNT-1000, TNT-1250, TNT-1500, TNT-OP-500, TNT-OP-1000 with Norweco AT1500 UV Unit	✓	✓				
Whitewater DF50 and DF60 with Salcor 3G UV	✓	✓				
Whitewater DF75, DF100, DF100A, DF150				✓	✓	

List of Registered On-site Treatment and Distribution Products
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Category 1

<u>Public Domain</u> Technology Name*	T/A	T/B	T/C	T/D	T/E	T/N
Intermittent Sand Filter System		✓	✓	✓		
Mound System		✓	✓			
Recirculating Gravel Filter System			✓	✓		50% of Total N
Recirculating Gravel Filter System w/VWDB			✓	✓		✓
Sand Lined Trenches/ Bed System		✓	✓			
Stratified Sand Filter System	✓	✓	✓	✓		

* Listed treatment technologies meet levels of treatment performance when constructed and used according to their respective departmental recommended standards and guidance documents.

Category 2

<u>Proprietary</u> Product Name / Model	T/E	High Strength Commercial	High Strength Residential	Treatment Capacity (pounds per day for CBOD₅)
NIBBLER SBP & NIBBLER CBP	✓	✓	✓	0.81
NIBBLER Jr.	✓		✓	1.0
MicroFAST 0.5	✓		✓	1.0
MicroFAST 0.75	✓		✓	1.5
MicroFAST 0.9	✓		✓	2.0
MicroFAST 1.5	✓		✓	3.2
MicroFAST 3.0	✓		✓	6.4
MicroFAST 4.5	✓		✓	9.5
MicroFAST 9.0	✓		✓	17.0

Registered On-site *Treatment* Products (cont'd)

Category 3

Incinerating Toilets		
Product Name / Model	Rated Capacity (persons)	Voltage (V)
Incinolet Electric Incinerating Toilet		
Incinolet CF	4-person	120
Incinolet TR	8-person	240
Incinolet WB	4/8-person	120/240

Category 3

Composting Toilets		
Product Name / Model	Rated Capacity (persons or uses/day)	Voltage (V)
Clivus Multrum Composting Toilet		
M1	10-uses/day	115 or 12
M2	15-uses/day	115 or 12
M3	40-uses/day	115 or 12
M10	60-uses/day	115 or 12
M12	80-uses/day	115 or 12
M15	100-uses/day	115 or 12
M18	120-uses/day	115 or 12
M22	80-uses/day	115 or 12
M28	120-uses/day	115 or 12
M32	110-uses/day	115 or 12
M35	180-uses/day	115 or 12
M54ADA	60-uses/day	12 or 115
Outback	0-20 uses/day	110 or 12
Sun-Mar Composting Toilet		
Excel	3-person residential	115
Centrex 2000 A/F	4-person residential	115
Centrex 2000 A/F AC/DC	3-person residential	115 & 12
Centrex 3000 A/F	5-person residential	115

Composting Toilets

Product Name / Model	Rated Capacity (persons or uses/day)	Voltage (V)
Centrex 3000 A/F AC/DC	4-person-residential	115 & 12
Compact	1-person residential	115
Spacesaver	1-person residential	115
Sun-Mar Mobile	1-person residential	12 & 115
Excel NE	2-person residential	Non-electric

Registered On-site *Distribution* Products

Gravelless Chamber Products					
Product / Model	Unit Size Outside Dimensions W / L / H (inches)	Void Space per unit (cu. ft)	Void Space per linear foot (cu. ft)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)
Infiltrator Chamber Leach Field System					
Standard	34" x 75" x 12"	10.3	1.65	17.69	2.83
ARC 36	33.75" x 60" x 13"	8.5	1.7	14.38	2.88
ARC 36HC	33.75" x 60" x 16"	10.5	2.09	14.38	2.88
ARC 36 LP	33.8" x 60" x 8"	5.80	1.16	14.08	2.82
ARC 24	22.5" x 60" x 12"	5.02	1.0	9.38	1.88
14" High Capacity	34" x 76" x 14"	14.0	2.25	17.9	2.8
11" Standard	34" 76" x 11"	8.5	1.36	17.9	2.8
Bio 2	15.38" x 86.9" x 12.38"	5.0	0.7	9.0	1.3
Bio 3	22" x 86.9" x 12.38"	8.6	1.2	13.2	1.8
High Capacity	34" x 75" x 16"	16.3	2.61	17.69	2.83
Equalizer 36	22" x 100" x 13"	8.42	1.00	15.24	1.83
Equalizer 24	15" x 100" x 11"	4.45	0.54	10.41	1.25
Quick4 Standard	34" x 48" x 12"	5.82	1.46	11.32	2.83
Quick4 Plus Standard	34" x 48" x 12"	6.20	1.55	11.32	2.83
Quick4 Plus Standard Low Profile (LP)	34" x 48" x 8"	4.28	1.07	11.32	2.83
Quick4 Plus All-In- One Endcap	18" x 13" x 8"	0.68	NA	1.6	NA
Quick4 Plus All-In- One Endcap	18" x 10" x 8"	0.60	NA	1.3	NA
Quick4 Plus Endcap	18" x 4" x 8"	0.14	NA	0.6	NA
Quick4 Standard MultiPort End Cap	34" x 16" x 12"	1.22 (average per unit)	NA	2.43 (average per unit)	NA
Quick4 HiCap	34" x 48" x 16"	8.30	2.08	11.32	2.83
Quick4 HiCap MultiPort End Cap	34" x 19" x 16"	1.93 (average per unit)	NA	3.00 (average per unit)	NA
Quick4 EQ36	22" x 48" x 12"	4.30	1.08	7.32	1.83
Quick4 EQ36 MultiPort End Cap	22" x 16" x 12"	0.74 (average per unit)	NA	1.65 (average per unit)	NA
Quick4 EQ24	16" x 48" x 11"	2.78	0.70	5.32	1.33

List of Registered On-site Treatment and Distribution Products
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Gravelless Chamber Products

Product / Model	Unit Size Outside Dimensions W / L / H (inches)	Void Space per unit (cu. ft)	Void Space per linear foot (cu. ft)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)
Quick4 EQ24 MultiPort End Cap	16" x 14" x 12"	0.52 (average per unit)	NA	1.20 (average per unit)	NA
Prinsco Gravelless Chamber					
Pro4/36	34" x 48" x 12"	6.88	1.72	11.32	2.83
Pro4/36 Endcap	29" x 16" x 12"	0.93	NA	1.69	NA

Geocomposite Drainfield

Product / Model	Unit Size W / L / H (inches)	Void Space per foot ³ of media (cu. ft)	Void Space per arrangement of units (cu. ft)	Void Space per linear foot of trench (cu. ft)	Infiltrative Surface per arrangement units (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)
Eljen GSF Geotextile Sand Filter System						
GSF/A42 module	24" x 48" x 7"	0.52	4.2	1.1	8	2

Registered On-site *Distribution* Products (cont'd)

Gravel Substitute Products						
Product / Model	Unit Size W / L / H (inches)	Void Space per foot³ of media (cu. ft)	Void Space per arrangement of units (cu. ft)	Void Space per linear foot of trench (cu. ft)	Infiltrative Surface per arrangement of units (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)
Infiltrator Engineered Aggregate Systems						
1003-H	30" x 120" x 10" Horizontal arrangement of three 10" diameter "tubes" in a 30" wide trench.	0.4	7.2	0.72	25	2.5
1003-T	24" x 120" x 10" Triangular arrangement of three 10" diameter "tubes" in 24" wide trench.	0.4	7.2	0.72	20	2.0
1203-H	36" x 120" x 12" Horizontal arrangement of three 12" diameter "tubes" in a 36" wide trench.	0.4	10.1	1.01	30	3.0
1003-H-GEO	30" x 120" x 10" Horizontal arrangement of three 10" diameter "tubes" with geotextile in a 36" wide trench.	0.4	7.2	0.72	25	2.5
1003-T-GEO	24" x 120" x 10" Triangular arrangement of three 24" diameter "tubes" in a 24" wide trench	0.4	7.2	0.72	20	2.0
1203-H-GEO	36" x 120" x 12" Horizontal arrangement of three 12" diameter "tubes" with geotextile in a 36" wide trench.	0.4	10.1	1.01	30	3.0

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Gravel Substitute Products

Product / Model	Unit Size W / L / H (inches)	Void Space per foot³ of media (cu. ft)	Void Space per arrangement of units (cu. ft)	Void Space per linear foot of trench (cu. ft)	Infiltrative Surface per arrangement of units (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)
FTSG103 H-1	30" x 120" x 10" Horizontal arrangement of three 12" diameter "tubes" with geotextile in a 36" wide trench.	0.4	7.2	0.72	25	2.5
FTSG103 T-1	24" x 120" x 10" Triangular arrangement of three 10" diameter "tubes" with geotextile in a 24" wide trench.	0.4	7.2	0.72	20	2.5
FTSG123 H-1	36" x 120" x 12" Horizontal arrangement of three 12" diameter "tubes" in a 36" wide trench.	0.4	10.1	1.01	30	3.0

Registered On-site *Distribution* Products (cont'd)

Subsurface Dripline Products				
Product Name / Model	Pipe I.D. (inches)	Emitter Discharge Rate (GPH)	Emitter Spacing (inches)	Emitter Type
**Geoflow WasteFlow PC 0.6 GPH	0.55	0.6	24, 18, 12, & 6	Pressure compensating
Geoflow WasteFlow PC 1.02 GPH	0.55	1.02	24, 18, 12, & 6	Pressure compensating
Geoflow Wasteflow Classic	0.55	1.3 at 20 PSI	24, 18, 12, & 9	Non-compensating (requires pressure regulator)
Netafim Bioline Dripperline 0.4 GPH	0.57	0.42	24, 18, 12	Pressure compensating
Netafim Bioline Dripperline 0.6 GPH	0.57	0.62	24, 18, 12	Pressure compensating
Netafim Bioline Dripperline 0.9 GPH	0.57	0.92	24, 18, 12	Pressure compensating

** Geoflow WasteFlow PC 0.55GPH now 0.6 GPH

Difference per emitter is 0.1 gph or 0.002 gpm or 0.017 gallons over 10 mins.

Difference for a 500 ft coil at 24inch spacing is 0.42 gpm.