ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY
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Governor

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Notice of Proprietary Treatment Product Listing Pursuant to Arizona Administrative Code R18-9-A309(E) ADEQ LTF # 93438 (Revised 03/22/22)

1. Proprietary Treatment Product Name, Model, and Description

Product Name: Eljen Geotextile Sand Filter (GSF)

Models: A42 & B43 Modules (Pads)

Description: The Eljen Geotextile Sand Filter (GSF) is an assembly consisting of a proprietary GSF module(s), either A42 or B43, consisting of a Bio-Matt™ fabric and cuspated core (rigid plastic core of GSF module) for treatment of septic tank effluent. The GSF module is placed over a specific sand base to provide supplemental wastewater treatment before discharge to the native soil.

2. Manufacturer Information

Name: Eljen Corporation
Address: 90 Meadow Road
City/State/Zip: Windsor, CT 06095
Phone: (800) 444-1359
Fax: (860) 610-0427
Website: www.eljen.com

3. Recognized Treatment Performance

Parameter	Averaging Time	Parameter Value for Averaging Time
5-Day Biochemical Oxygen Demand (BOD_5), mg/l	30-day arithmetic mean	5
Total Suspended Solids (TSS), mg/l	30-day arithmetic mean	5
Total nitrogen as nitrogen(TN), mg/l	five-month arithmetic mean	40
Total coliform, colony forming units/100ml	95th percentile	1,000 ($Log_{10}3$)
Depth of specified sand below Modules	Measured in inches	12”

4. Product Applicability and Limitations for Use for a Recognized General Permit Technology

Applicability: This listing is for the A42 & B43 Module (Pad) Eljen GSF Geotextile Sand Filter treatment technology specified in A.AC. Rl8-9-E309(A)(l).

Limitations:

A. The product is subject to the requirements for materials and manufactured system components specified under A.A.C. R18-9-A312(F)(2) through (4).

B. The Eljen GSF Geotextile Sand Filter shall receive pretreated wastewater from a septic tank which conforms to A.A.C. R18-9-A314.

C. The Eljen GSF Geotextile Sand Filter shall be installed in either trench or bed configurations.

D. The design of the of the Eljen GSF treatment technology shall follow the selection criterion in R18-9-E309(A)(2), and the design, installation, and operation & maintenance details must conform to the requirements listed under R18-9-E309(D), (E) and (F).

E. An investigation shall be conducted under R18-9-A310 consisting of a surface characterization and a subsurface characterization, to accurately select the appropriate primary and reserve disposal areas; and to effectively design and install the selected facility. Surface limiting conditions specified under R18-9-A310(D) shall be assessed to determine if the facility may not be installed at the site given any identified site limitations.

F. The design of the Disposal Works that receives treated wastewater from the Eljen GSF must follow the procedures listed below:

a. The sand filter bed shall conform to the "Standard Specification for Concrete Aggregates C33-03 (2003)" per R18-9-E(309)(D)(2) with no more than 10.0 percent passing a #100 sieve and 5.0 Percent passing a #200 sieve;
b. The disposal system must also meet the applicable requirements in R18-9-A(309)(B), R18-9-A312 and R18-9-A314;

G. The daily design flow shall be calculated using the appropriate bedroom and fixture count under R18-9-A314(4).

H. Distribution of effluent to the treatment modules can be any of the following:

1. By gravity flow to a distribution box followed by gravity flow to the treatment modules.
2. By siphon or pump to a distribution box followed by gravity flow to the treatment modules.
3. By pressure distribution (no distribution box) to the treatment modules.

I. The design is divided into three components: Treatment Works, Disposal Works and Module Configuration Layout.

Treatment Works

1. The effluent from the septic tank shall only be applied initially to the treatment modules.
2. The treatment shall consist of the Eljen modules and 12 inches of sand filter on the side and below each module. The maximum loading rate shall not be exceeded for each module. The maximum loading rate for the A42 Module on the top surface shall not exceed 25 gallons per day per module;

the maximum loading rate for the B43 Module on the top surface shall not exceed 30 gallons per day per module.

3. The number of treatment modules required is determined by taking the daily design flow divided by the maximum loading rate for each module (specified above) rounded up to the nearest whole number.

Disposal Works

1. An initial and primary disposal area soil absorption rate (SAR) must be calculated via an appropriate site investigation method under R18-9-A310(E) or (F). This SAR may then be adjusted under R18-9-A312(D)(3) for the specific treatment performance criteria assigned to the adjusted SAR (SARa). The disposal area shall then be computed as follows:
   a. Divide the design flow by the SARa to determine the disposal works square footage requirement.
   b. If the required square footage of the disposal works is less than or equal to the area required under the treatment works, then no additional disposal area is required.
   c. If the required square footage of the disposal works is greater than the area required under the treatment works, then extend the width of the trench(s) to a point where the product of the length and the width times the number of trenches will equal the square footage requirement. If a bed is to be used, extend the width and length of the bed to a point where the product will equal the square footage requirement. In all cases, the edge of any treatment module will be at least 12 inches from the sidewall of the trench or bed. Furthermore, in all cases, the treatment modules will be distributed proportionally along the length of the trench(s) or along the width and length of the bed. See also the information under Module Configuration Layout for limitations on the length and width of the trench or bed configurations.

Module Configuration Layout

1. Dimensional Limits
   a. Maximum trench length – 115 feet.
   b. Maximum trench width – 8 feet; bottom is level immediately under the module and extending 1 foot on either side of the module, extensions after may be sloped.
   c. When the trench width exceeds 8 feet, it becomes a bed.
   d. Maximum length of pipe in a lateral after the distribution box and running longitudinally down the treatment modules and spanning any separations between the treatment modules in a bed configuration – 113 feet.
2. In a bed configuration, the module configuration layout shall be as follows:
   a. The spacing between edges of each adjacent module shall be a minimum of 24 inches.
   b. The spacing between the edge of the module and the bed excavation wall shall be a minimum of 12 inches.
   c. The maximum longitudinal spacing between treatment modules (from edge to edge) is 10 feet.
3. In a trench configuration, the configuration layout shall be as follows:
   a. The spacing between edges of each trench shall be at least two times the distance between the bottom of the distribution pipe and the bottom of the sand bed or 5 feet, whichever is greater.
   b. The spacing between edges of the module and the bed excavation wall shall be a minimum of 12 inches.
   c. The maximum longitudinal spacing between treatment modules (from edge to edge) is10 feet.

J. If a seasonal high-water table is identified at the site, the requirements of R18-9-A312(E)(2) will apply, which may include conducting a hydraulic analysis showing that the soil is sufficiently permeable to conduct wastewater downward and laterally without surfacing for the site conditions.

K. If portions of the installation will be located above natural soil grade:

1. Definition of "above natural soil grade" – any system where 50% of the length of the Eljen GSF distribution pipe is above natural soil grade.
2. A minimum of 12 inches of sand, located below the Eljen GSF, may also be located above the natural soil grade.
3. The natural soil grade surface shall be scarified where the sand will be placed.
4. The effluent from the pretreatment device may be applied to the treatment modules by pressure distribution or by gravity, pump or siphon to a distribution box followed by gravity discharge to the treatment modules. See below for more details if a pump or siphon is used.

L. The effluent from the septic tank may be delivered with a pump or siphon to a distribution box followed by gravity discharge to the treatment modules. The discharge of a pump or siphon to a distribution box followed by gravity discharge to the treatment modules has been determined to be equal to that of a pump and pressure distribution to the treatment modules (no distribution box used) as specified in R18-9-E304. An A312G submittal will be required to obtain approval of the design details to use a pump or siphon to a distribution box followed by gravity discharge to the treatment modules. In addition, the A312G will be used in conjunction with a type 4.09 general permit application to gain approval to use this method of discharge to the treatment modules instead of using a pressurized discharge to the treatment modules.

M. If the installation of a pressure distribution system will occur, then the Notice of Intent to Discharge and other submittal documentation shall include the required materials listed in R18-9-E304. Pressure dosing of the Eljen GSF, if used, shall be governed by the requirement of the R18-9-E304 general permit and the dosing requirements of R18-9-E309(D)(1)(b).

N. This listing is for treatment of wastewater that meets the definition of typical sewage as defined in R18-9-101(42).

O. This listing EXCLUDES appurtenances which are considered to be "other manufactured materials and components" such as an alarm, control panel, control, switch, timer, wiring, other electrical devices, and installation components; which are subject to both the manufacturer specifications and any more restrictive requirement in 18 A.A.C. 9, Article 3.

P. The use of a disinfection device under R18-9-E320 in conjunction with this product is not allowed.

Q. Arizona Administrative Code (A.A.C.) Title 18 Chapter 9 Article 3 shall prevail over the manufacturer's specifications.

R. This Product Listing Notice supersedes prior product listing actions and any prior approved supporting documents.

S. ADEQ approves the Eljen Geotextile Sand Filter Arizona Design & Installation Manual, dated February 2022, for this proprietary product. In addition, it should be noted that the Arizona Administrative Code (AAC)

states the following: "if manufactured components are used, an applicant shall design, install, and operate the on-site wastewater treatment facility following the manufacturer's specifications" as per R18-9-A312(F)(2).

5. Alternative Criteria and Exceptions for Use under the Recognized General Permit Technology

Alternative:	None
Exception:	1. When the wastewater does not meet the definition of typical sewage as defined in R18-9-101(42), a Manufacturer's Design Review Report shall be submitted for review and approval along with the Notice of Intent to Discharge. This Design Review Report shall specify component capacities, control settings, and supplemental installation & operational practices. 2. The 24-hour emergency storage requirement per R18-9-A312(B)(4)(e) may be waived by providing redundant pumps and emergency back-up power when a pumping option is chosen as part of the treatment facility design.

6. Documents Used as the Basis for this Proprietary Treatment Product Listing Notice

Application for Treatment Product Listing Documents relied upon:	2/04/19
3rd Party Test data:	The recognized treatment performance for this proprietary product was acknowledged in the Product Listing approval dated 6/24/10. ADEQ's listing of this product was based solely on the testing and reporting of treatment performance results reported from the following documents: Application Received by ADEQ in Oct, 2007 & Revised March , 2008; FINAL Onsite Wastewater Technology Testing Report, Eljen™ Geotextile Sand Filter Timed Pressure Dosed Mode, March 2008; FINAL Onsite Wastewater Technology Testing Report, Eljen™ Geotextile Sand Filter Eljen™ Demand Dosed Mode, March 2008 FINAL Onsite Wastewater Technology Testing Report, Eljen™ Geotextile Sand Filter Eljen™ Gravity Mode , November 2008; Letters from George Heufelder, Director of MASSTC; August 8, 2008; February 23, 2009; May 11, 2009 Letter from Sharon Steiner, Business Unit Manager, Wastewater Treatment Unit Program, NSF international, July 31, 2008
Eljen Design and Installation Manual March 2018:	Arizona Design and Installation Manual February 2022
Eljen GSF Installation Video:	http://eljen.com/
Manufacturer's Specifications:	http://eljen.com/
Manufacturer's Design Calculations & Drawings:	02/01/19
Eljen's Owner's Manual:	2/01/19

7. Terms and Conditions for this Proprietary Treatment Product Listing Notice

A. This Notice of Proprietary Treatment Product Listing shall remain in effect until any of the following occurs:
   i. Applicable provisions of the Arizona Administrative Code, Title 18, Chapter 9, Article 3 are revised;
   ii. Documents used for the basis of this listing are altered or modified;
   iii. Manufacturer claims which are relied upon for this listing are later determined to contain an error or omission;
   iv. The manufacturer requests termination of this listing;
   v. A listing error or omission is identified; or
   vi. The manufacturer and ADEQ mutually agree to reissue this notification to incorporate correction or update for any reason.

B. This Notice of Proprietary Treatment Product Listing does not apply when the:
   i. Listed proprietary treatment product is modified or operated in a manner that conflicts with Arizona law or the documents used for the basis of this listing action in Section 6.
   ii. Listed proprietary treatment products are used in a manner that cannot achieve the performance in Section 3 above.

C. This Notice of Proprietary Treatment Product Listing applies solely to the product specified in Section 1 above.

D. The manufacturer is responsible for notifying ADEQ of changes to the contact information at the following address:
   Attention: Product Listing Supervisor
   Engineering Review Desk,
   1110 West Washington Street
   Phoenix, AZ 85007.

E. The listing by ADEQ of any proprietary product or service is not an endorsement by ADEQ or the State of Arizona. ADEQ does not endorse, represent, guarantee, warranty or defend the use of any product which is authorized for use pursuant to A.A.C. R18-9-A309(E). Product providers are a direct source unrelated to ADEQ or the State of Arizona. Use of any listed product is at the user's risk and the State assumes no liability.

Signature:	Naveen Savarirayan Naveen Savarirayan, Manager	**Date Signed:**	Mar 22, 2022
Title:	Groundwater Protection Value Stream Manager		

ADEQ FILE # 20220092
LTF # 93438
Reviewer: LAL

Signature:

Email: Ivers.Matthew@azdeq.gov