

An outline map of the state of New Hampshire is centered on the page. A horizontal line extends from the left edge of the map to the left margin. A vertical line extends from the top edge of the map to the top margin. A grey rectangular box with a black border is superimposed over the center of the map, containing the title text. At the bottom center of the map, there is a small white rectangular box with a black border containing the text "2004 Edition".

**Presby Maze[®] Design and Installation
Manual New Hampshire State Attachment**

2004 Edition



State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

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January 21, 2004

Mr. David Presby, President
Presby Environmental, Inc.
Innovative Septic Technologies
P.O. Box 617
Sugar Hill, NH 03585

Subject: *The Presby Maze[®] Design and Installation Manual*, and "New Hampshire State Attachment," revised January 2004

Dear Mr. Presby:

This approval, originally issued in 1993 and since then subsequently updated, is based upon the use of the Presby Maze[®] as described in *The Presby Maze[®] Design and Installation Manual*, and "New Hampshire State Attachment," revised January 2004.

Specifically, we will allow the installation of the Presby Maze[®] as follows:

1. The Presby Maze[®] will be allowed up to a maximum 25% reduction in leach field size in commercial uses as described in the "New Hampshire State Attachment," revised January 2004. No further reduction will be given for commercial systems without a waiver
2. No reduction will be given for non-commercial systems without a waiver.
3. This revised Presby Maze[®] manual and its State attachment dated January 2004 supercede the previously approved handbook.

Sincerely,

William E. Evans, P.E.
Administrator
Subsurface systems Bureau

The Presby Maze[®] Design and Installation Manual

New Hampshire State Attachment

Purpose The purpose of this attachment is to provide information specific to the State of New Hampshire for use in the design and installation of septic tanks and septic tank systems using the Presby Maze[®].

Presby Environmental, Inc., standards All tank and tank systems using the Presby Maze[®] must be designed and installed in compliance with the procedures and specifications described in *The Presby Maze[®] Design and Installation Manual*.

State standards take precedence While the Presby Environmental, Inc., standards form the basis for designing and installing Enviro-Septic[®] products, the information in this State attachment takes precedence in the event of conflicts.

This attachment is to be used in conjunction with the New Hampshire Department of Environmental Services Env-Ws 1000 rules and other state or local regulations regarding septic systems.

In this attachment This attachment contains State specific information on the following subjects.

| Subject | Page |
|----------------------------|-------------|
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| Tank Sizing | 3 |
| Leach Area Reductions | 6 |

Technical Support Presby Environmental, Inc., provides technical support to all individuals using our products. For questions about our products or the information contained in this manual, please contact us at 1-800-473-5298.

State Specific Information

Design flow volume

Design flow volumes are calculated using Env-Ws 1008.03.

Tank cleaning requirements

The primary septic tank should be cleaned as required by Env-Ws 1023.01. All septic tanks should be inspected in accordance with Env-Ws 1023.01.

Reference: See Section H in the “Presby Maze[®] Design and Installation Manual” for tank cleaning requirements.

Residential tank sizing

The tank sizing tables in this attachment supercede Env-Ws 1010.01. If a garbage disposal is installed, increase the tank size by 50%. If raw sewage is pumped, tank size is doubled.

Non-residential tank sizing

The tank sizing tables in this attachment supercede Env-Ws 1010.02. If a garbage disposal is installed, increase the tank size by 50%. If raw sewage is pumped, tank size is doubled.

Grease trap capacity

Grease trap capacities are calculated using Env-Ws 1012. When using a Presby Maze[®] in a grease trap, increase tank size by 50%.

Wastewater strength

If wastewater strength is above average, tank sizing should be increased. For specific information, call Presby Environmental, Inc.

Tank Sizing

Introduction Presby Maze[®] tank sizing is determined by the number of bedrooms or the design flow in gallons per day.

Residential and Non-Commercial To determine the required Presby Maze[®] tank size for residential and non-commercial systems with a single tank, use Table A below. Remember to round up to the next largest available tank size.

Table A – Single Tank

| | |
|------------|-------|
| 1 bedroom | 1,150 |
| 2 bedroom | 1,150 |
| 3 bedroom | 1,438 |
| 4 bedroom | 1,725 |
| 5 bedroom | 2,013 |
| 6 bedroom | 2,300 |
| 7 bedroom | 2,588 |
| 8 bedroom | 2,875 |
| 9 bedroom | 3,163 |
| 10 bedroom | 3,450 |

Minimum required septic tank volume in gallons

Example: A six-bedroom system would require 2,300 gallons of total septic tank volume rounded up to 2,500 gallons.

To determine the required Presby Maze[®] tank size for residential and non-commercial systems with multiple tanks, use Table B below.

Table B – Multiple tanks

| | Primary Tank | Maze Tank |
|------------|--------------|-----------|
| 1 bedroom | 575 | 575 |
| 2 bedroom | 575 | 575 |
| 3 bedroom | 719 | 719 |
| 4 bedroom | 863 | 863 |
| 5 bedroom | 1,006 | 1,006 |
| 6 bedroom | 1,150 | 1,150 |
| 7 bedroom | 1,294 | 1,294 |
| 8 bedroom | 1,438 | 1,438 |
| 9 bedroom | 1,581 | 1,581 |
| 10 bedroom | 1,725 | 1,725 |

Minimum required septic tank volume in gallons

Example: A six-bedroom home requires 2-1,150 gallon tanks. Round up 1,150 and provide two 1,250 gallon tanks with a Presby Maze[®] installed in the secondary (final) tank only.

Continued

Tank Sizing, Continued

Single tank commercial systems

Single tank commercial systems, typically less than 1,500 GPD, may use a Presby Maze[®] installed in the primary tank. To determine the required Presby Maze[®] tank size use Table C below. Remember to round up to the next largest available tank size.

Table C – Single Tank Commercial System Sizing

| Time Periods of Flow | | | | |
|--------------------------|---------------------------|--------------------------|----------------------------|----------------------------|
| Total Design Flow Volume | Flow: 4 hrs. Primary Tank | Flow: 8 hrs Primary Tank | Flow: 16 hrs. Primary Tank | Flow: 24 hrs. Primary Tank |
| 500 | 1,566 | 1,350 | 1,242 | 1,080 |
| 750 | 2,350 | 2,026 | 1,864 | 1,620 |
| 1,000 | 3,132 | 2,700 | 2,484 | 2,160 |
| 1,250 | | 3,376 | 3,106 | 2,700 |
| 1,500 | | | | 3,240 |

Minimum required septic tank volume (gals.) with a Presby Maze[®]

Example: Design Flow Volume 1,000 GPD
 Time Period of Flow 16 hours
 Required septic tank volume 2,484 gals.
 Round up to 2,500 gallon tank with a Presby Maze[®]

Commercial: 500-5,000 gals.

To determine the required primary and Presby Maze[®] tank sizes for commercial systems of 500 to 5,000 gallons use Table D below. Remember to round up to the next largest available tank size.

Table D – Commercial Tank Sizing: 500 – 5,000 gallons

| Total Design GPD Flow | Time Periods of Flow | | | | | | | |
|-----------------------|----------------------|-----------|--------------|-----------|---------------|-----------|---------------|-----------|
| | Flow: 4 hrs. | | Flow: 8 hrs | | Flow: 16 hrs. | | Flow: 24 hrs. | |
| | Primary Tank | Maze Tank | Primary Tank | Maze Tank | Primary Tank | Maze Tank | Primary Tank | Maze Tank |
| 500 | 522 | 783 | 518 | 608 | 518 | 518 | 522 | 378 |
| 750 | 783 | 1,175 | 776 | 912 | 777 | 777 | 783 | 567 |
| 1,000 | 1044 | 1,566 | 1,035 | 1,215 | 1,035 | 1,035 | 1,044 | 756 |
| 1,250 | 1305 | 1,958 | 1,294 | 1,519 | 1,294 | 1,294 | 1,305 | 945 |
| 1,500 | 1566 | 2,349 | 1,553 | 1,823 | 1,553 | 1,553 | 1,566 | 1,134 |
| 2,000 | 1827 | 2,741 | 1,811 | 2,127 | 1,811 | 1,811 | 1,827 | 1,323 |
| 2,500 | 2088 | 3,132 | 2,070 | 2,430 | 2,070 | 2,070 | 2,088 | 1,512 |
| 3,000 | 2349 | 3,524 | 2,329 | 2,734 | 2,329 | 2,329 | 2,349 | 1,701 |
| 3,500 | 2610 | 3,915 | 2,588 | 3,038 | 2,588 | 2,588 | 2,610 | 1,890 |
| 4,000 | 2871 | 4,307 | 2,846 | 3,342 | 2,846 | 2,846 | 2,871 | 2,079 |
| 4,500 | 3132 | 4,698 | 3,105 | 3,645 | 3,105 | 3,105 | 3,132 | 2,268 |
| 5,000 | 3393 | 5,090 | 3,364 | 3,949 | 3,364 | 3,364 | 3,393 | 2,457 |

Minimum required primary and Presby Maze[®] tank volume in gallons

Continued

Tank Sizing, Continued

Commercial: 5,500-10,000 gals. To determine the required primary and Presby Maze[®] tank sizes for commercial systems of 5,500 to 30,000 gallons use Table D below. Remember to round up to the next largest tank size.

Table D – Commercial Tank Sizing: 5,500 – 30,000 gallons

| Total Design GPD Flow | Time Periods of Flow | | | | | | | |
|-----------------------|----------------------|-----------|--------------|-----------|---------------|-----------|---------------|-----------|
| | Flow: 4 hrs. | | Flow: 8 hrs | | Flow: 16 hrs. | | Flow: 24 hrs. | |
| | Primary Tank | Maze Tank | Primary Tank | Maze Tank | Primary Tank | Maze Tank | Primary Tank | Maze Tank |
| 5,500 | 3,593 | 5,390 | 3,562 | 4,182 | 3,562 | 3,562 | 3,593 | 2,602 |
| 6,000 | 3,850 | 5,774 | 3,817 | 4,480 | 3,817 | 3,817 | 3,850 | 4,788 |
| 6,500 | 4,106 | 6,160 | 4,071 | 4,779 | 4,071 | 4,071 | 4,106 | 2,974 |
| 7,000 | 4,363 | 6,545 | 4,325 | 5,078 | 4,325 | 4,325 | 4,363 | 3,160 |
| 7,500 | 4,620 | 6,929 | 4,580 | 5,376 | 4,580 | 4,580 | 4,620 | 3,345 |
| 8,000 | 4,876 | 7,315 | 4,834 | 5,675 | 4,834 | 4,834 | 4,876 | 3,531 |
| 8,500 | 5,133 | 7,700 | 5,089 | 5,974 | 5,089 | 5,089 | 5,133 | 3,717 |
| 9,000 | 5,390 | 8,084 | 5,343 | 6,273 | 5,343 | 5,343 | 5,390 | 3,903 |
| 9,500 | 5,646 | 8,470 | 5,598 | 6,571 | 5,598 | 5,598 | 5,646 | 4,089 |
| 10,000 | 5,903 | 8,854 | 5,852 | 6,870 | 5,852 | 5,852 | 5,903 | 4,275 |
| 11,000 | 6,308 | 9,461 | 6,253 | 7,341 | 6,253 | 6,253 | 6,308 | 4,568 |
| 12,000 | 6,812 | 10,218 | 6,753 | 7,928 | 6,753 | 6,753 | 6,812 | 4,933 |
| 13,000 | 7,317 | 10,975 | 7,254 | 8,515 | 7,254 | 7,254 | 7,317 | 5,298 |
| 14,000 | 7,821 | 11,732 | 7,754 | 9,102 | 7,754 | 7,754 | 7,821 | 5,664 |
| 15,000 | 8,326 | 12,489 | 8,254 | 9,690 | 8,254 | 8,254 | 8,326 | 6,029 |
| 16,000 | 8,830 | 13,246 | 8,754 | 10,277 | 8,754 | 8,754 | 8,830 | 6,395 |
| 17,000 | 9,335 | 14,003 | 9,255 | 10,864 | 9,255 | 9,255 | 9,335 | 6,760 |
| 18,000 | 9,840 | 14,759 | 9,755 | 11,451 | 9,755 | 9,755 | 9,840 | 7,125 |
| 19,000 | 10,344 | 15,517 | 10,255 | 12,039 | 10,255 | 10,255 | 10,344 | 7,491 |
| 20,000 | 10,849 | 16,273 | 10,755 | 12,626 | 10,755 | 10,755 | 10,849 | 7,856 |
| 21,000 | 11,158 | 16,736 | 11,062 | 12,985 | 11,062 | 11,062 | 11,158 | 8,080 |
| 22,000 | 11,654 | 17,480 | 11,553 | 13,563 | 11,553 | 11,553 | 11,654 | 8,439 |
| 23,000 | 12,150 | 18,224 | 12,045 | 14,139 | 12,045 | 12,045 | 12,150 | 8,798 |
| 24,000 | 12,646 | 18,968 | 12,536 | 14,717 | 12,536 | 12,536 | 12,646 | 9,157 |
| 25,000 | 13,141 | 19,712 | 13,028 | 15,294 | 13,028 | 13,028 | 13,141 | 9,516 |
| 26,000 | 13,637 | 20,456 | 13,520 | 15,871 | 13,520 | 13,520 | 13,637 | 9,875 |
| 27,000 | 14,133 | 21,200 | 14,011 | 16,448 | 14,011 | 14,011 | 14,133 | 10,235 |
| 28,000 | 14,629 | 21,944 | 14,503 | 17,025 | 14,503 | 14,503 | 14,629 | 10,594 |
| 29,000 | 15,125 | 22,687 | 14,995 | 17,602 | 14,995 | 14,995 | 15,125 | 10,953 |
| 30,000 | 15,621 | 23,431 | 15,486 | 18,180 | 15,486 | 15,486 | 15,621 | 11,312 |

Minimum required primary and Presby Maze[®] tank volume in gallons

Note: For systems with design flows over 30,000 gallons, contact Presby Environmental, Inc.

Leach Area Reductions

Introduction The State of New Hampshire allows leach area size reductions for some commercial and small commercial septic tank systems using the Presby Maze.

Enviro-Septic[®] system reductions Commercial Systems
In commercial systems using the Presby Maze[®] with the Enviro-Septic[®] leaching system, a reduction of 25% in leach area is allowed.

Simple formula: Multiply the original linear pipe footage by 75% to determine the total linear footage required when using the maze.

Reference: Use the Quick Reference Guide in your Enviro-Septic[®] State Attachment to determine original linear pipe footage.

Residential and Non-Commercial Systems
Residential and non-commercial Enviro-Septic[®] leaching systems are **not** allowed a leach area reduction without a waiver.

Other system reductions In commercial systems using the Presby Maze[®] a 15% reduction in leach area size is allowed for chambered systems such as concrete chambers, Infiltrators, Bio-diffusers, Contactors, and the Geo-Flow leaching system.

Note: The Presby Maze[®] can be used with stone bed and Elgin-In-Drain systems, but no reduction in leach area size is allowed.

Enviro-Septic[®] U.S. Patent Nos. 6,461,078; 5,954,451; 6,290,429 with other patents pending. Canadian Patent Nos. 2185087; 2187126 with other patents pending. Simple-Septic[®] U.S. Patent No. 5,606,786. Presby Maze[®] U.S. Patent No. 5,429,752. Enviro-Septic[®], Simple-Septic[®], and Presby Maze[®] are registered trademarks of Presby Environmental, Inc. Multi-Level[™], is a trademark of Presby Environmental, Inc. © 2004 Presby Environmental, Inc. All rights reserved. Publication date: January 2004.