



CIVIL ENGINEERING ASSOCIATES, INC.

10 Mansfield View Lane
South Burlington, VT 05403

Phone: 802-864-2323
Fax: 802-864-2271
E-Mail: mail@cea-vt.com

June 2, 2011

Mr. Tom Mansfield, Zoning Administrator
Town of Charlotte Offices
PO Box 119
Charlotte, Vermont 05445

**Re: Roberts Residence Wastewater
1981 Greenbush Road, Charlotte
State Wastewater & Potable Water Supply Permit Application**

Dear Mr. Mansfield:

On behalf of Classic Homes and the Roberts family we are pleased to submit the Wastewater Disposal & Potable Water Supply Permit application for the abandonment of the existing on-site wastewater disposal system in favor of a new fully compliant wastewater disposal system for the house.

The wastewater disposal system design relies upon the installation of a new 1000 gallon concrete septic tank, filtrate treatment from a gravity flow based EcoFlo Biofilter and distribution in an in-ground conventional system.

The layout of the proposed in-ground system relies upon a 25-foot wide easement from the abutting property owner (Donahue's) which enables the system to be installed up to the edge of the property line. We have attached a copy of the easement agreement.

The supporting test pitting for the project identified the presence of a masonry block septic tank and the in-ground trenches. The proposed system improvements include the disconnection of the plumbing from the house to the old septic tank, the filling of the septic tank and capping of the lines from the septic tank. The proposed trenches are located uphill of the existing trenches where fully compliant separation distances to the seasonal high groundwater table will be provided.

The proposed wastewater disposal system is sized for a 4-bedroom home and the basis of design is outlined on the attached design plans.

Wastewater Management Division - Permit Application Wastewater System & Potable Water Supply



For Office Use Only:

Application#	PIN#	Date Complete Application Received
<input type="text"/>	<input type="text"/>	<input type="text"/>

Authority:

10 V.S.A. Chapter 64, the Environmental Protection Rules, Chapter 1, Wastewater System & Potable Water Supply Rules, and Chapter 21, Water Supply Rules, Appendix A. Part 11 - Small Scale Water Systems.

General Information:

The organization and/or content of this form may not be altered, however, the form is designed to expand to allow additional information to be entered. Changes in the organization and/or content of the form may result in an invalid application or permit.

In most cases a licensed designer will be required for your project and to help complete this application form. There are also line-by-line instructions available to assist with completing this form.

NOTE: We strongly suggest referring to the application instructions while completing this application form.

Part I Applicant (Landowner) & Project Contact Information

Section A - Applicant Details (if Landowner is an Individual or Individuals)

1 Last Name		2 First Name (and Middle Initial if appropriate)	
<input type="text" value="Roberts"/>		<input type="text" value="Marion W"/>	
3 Mailing Address Line 1		4 Mailing Address Line 2	
<input type="text" value="1981 Greenbush Road"/>		<input type="text"/>	
5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
<input type="text" value="Charlotte"/>	<input type="text" value="Vermont"/>	<input type="text" value="United States"/>	<input type="text" value="05445"/>
9 Email Address			10 Telephone
<input type="text"/>			<input type="text"/>

Section B - Applicant Details (if Landowner is other than an Individual or Individuals, e.g. Corporations, Homeowner's Associations, etc.)

1 Registered Legal Entity or Organization Name			2 Telephone
<input type="text"/>			<input type="text"/>
3 Mailing Address Line 1		4 Mailing Address Line 2	
<input type="text"/>		<input type="text"/>	
5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
<input type="text"/>	<input type="text"/>	<input type="text" value="United States"/>	<input type="text"/>

Certifying Official

The Certifying Official must be a person who has signatory authority for the legal entity or organization that is the Applicant. A copy of the document authorizing this person to act as a signatory authority must be attached to this application.

9 Certifying Official Last Name		10 Certifying Official First Name (and MI if appropriate)	
<input type="text"/>		<input type="text"/>	
11 Certifying Official Title			
<input type="text"/>			
12 Certifying Official Email Address			13 Telephone
<input type="text"/>			<input type="text"/>

Section C - Primary Contact Information (if other than Applicant)			
1 Last Name Wygman		2 First Name (and Middle Initial if appropriate) Justin	
3 Mailing Address Line 1 Classic Home		4 Mailing Address Line 2 3176 Greenbush Road	
5 Town/City Charlotte	6 State/Province VT	7 Country United States	8 Zip/Postal Code 05445
9 Email Address classicrestorationvt@comcast.net			10 Telephone 802-324-2451

Section D - Building/Business Owner Information			
1 Last Name NA		2 First Name (and Middle Initial if appropriate)	
3 Mailing Address Line 1		4 Mailing Address Line 2	
5 Town/City	6 State/Province	7 Country United States	8 Zip/Postal Code
9 Email Address			10 Telephone

Part II Certifying Designer(s) Information			
1 Designer Last Name Marshall		2 Designer First Name (and Middle Initial if appropriate) David	
3 Designer License# 06019	4 Company Name Civil Engineering Associates, Inc.		
5 Mailing Address Line 1 10 Mansfield View Lane		6 Mailing Address Line 2	
7 Town/City South Burlington	8 State/Province Vermont	9 Country United States	10 Zip/Postal Code 05403
11 Email Address dmarshall@cea-vt.com			12 Telephone 863-2323
13 Designer Role(s) (check all that apply)			
<input checked="" type="checkbox"/> Water Supply Designer <input checked="" type="checkbox"/> Wastewater Disposal System Designer			
<input type="button" value="Remove This Designer"/>			
<input type="button" value="Add Another Designer"/>			

Part III Property Location Information		
Section A - Property Parcel ID#(s) and Location(s)		
1 Please provide the property location information including Town or City Parcel ID#, Town/City, and Street or Road location in the table below:		
(a) Town/City Parcel ID#	(b) Town or City	(c) Street or Road Location
X 00004-1981	Charlotte	1981 Greenbush Road
<input type="button" value="Add Another Property"/>		

Section B - Center of Property GPS Coordinates

1 Enter the approximate center of property coordinates using GPS set for NAD83 or as derived from a map (map must be based on NAD83).

(a) Latitude (in decimal degrees to five decimal places, ex. 44.38181°) (b) Longitude (in decimal degrees to five decimal places, ex. -72.31392°)

N ° W (-) °

Part IV Project Information

Section A - General Project Information & Questions

1 Project Name (if applicable) 2 Total Acreage of Property

3 Business Name (if applicable)

4 Detailed Project Description

Abandonment of the existing wastewater disposal system and construction of a new 4-bedroom wastewater disposal system. Retain existing well. Install new 1000 gallon septic tank, Bio-Filter filtrate system, distribution box and two in-ground trenches. Basis of design is depicted on the plans.

5 Were all buildings or structures, campgrounds, and their associated potable water supplies and wastewater systems substantially completed before January 1, 2007 and all improved and unimproved lots in existence before January 1, 2007? Yes No

6 Does this application include subdividing the property? Yes No

7 Has anyone from the Wastewater Management Division's Regional Office been to the property? Yes No

If Yes, enter the staff person's name and the date of the visit.

(a) Name of Staff Person (b) Date of Visit

8 Will any construction occur within 50 feet of a wetland boundary, mapped or designated? Yes No

If Yes, contact the Wetlands Program of the Water Quality Division at (802) 241-3770.

9 Will more than one acre be disturbed during the entire course of construction, including all lots and phases? Yes No

If Yes, contact the Stormwater Program of the Water Quality Division at (802) 241-4320.

10 Will there be any stream crossings by roads, utilities, or other construction? Yes No

If Yes, contact the River Corridor Mgmt. Program of the Water Quality Division at:
 Central & Northwest Vermont (802) 879-5631
 Southern Vermont (802) 786-5906
 Northeastern Vermont (802) 751-0129

11 Is the project located in a special flood hazard area as designated on the flood insurance maps prepared for a municipality by the Federal Emergency Management Agency? Yes No

If Yes, show the special flood hazard area limits on the site plan.

12 Act 250: Has the Applicant (Landowner) subdivided any other lots of any size within a five mile radius of this subdivision, or within the environmental district within the last five years? Yes No

If Yes, enter the town(s) and the associated number of lots in the table below:

(a) Town	(b) Number of Lots
X <input type="text"/>	<input type="text"/>

Add Another Town/Lot

13 Is there any prior Act 250 jurisdiction on the tract of land? Yes No

If Yes, enter the Act 250 permit number:

(a) Act 250 Permit Number

Section B - Project Deed Reference

1 Please provide the Town, Book, and Page reference for the current landowner's deed(s) to this property in the table below:

	(a) Town	(b) Book	(c) Page(s)
X	Charlotte		

Add Another Deed Reference

Section C - Project Plan Reference

1 Please provide the following information for all water supply and wastewater disposal system plans being submitted.

	(a) Sheet#	(b) Title	(c) Plan Date	(d) Plan Revision Date
X	C-1	Overall Site Plan	May 1, 2010	
X	C-2	Wastewater Disposal System Details	May 1, 2010	

Add Another Plan Reference

Section D - Existing Project Lot/Building Details

Please provide the existing project details. This section is used to describe what is existing for the project. For example, if you are subdividing an undeveloped 21-acre parcel, you would list the existing parcel. If you are revising the boundary lines of two commercial lots in an industrial park, and constructing an addition to an existing building you would list the existing lot numbers, existing acres, existing buildings, existing uses, construction date(s), prior permits, and answer the compliance questions.

1 Lot#	2 Lot Size (acres)	3 Existing Use of the Lot
1	1.4	Residential

4 Provide the following information for each building on the lot:

(a) Building ID	(b) Existing Use	(c) Date Construction of Building Substantially Complete	(d) Prior Permits	(e) In compliance with existing permits?
X House	Residential	01-01-1970	None	<input checked="" type="radio"/> Yes <input type="radio"/> No

Add Another Building

Remove This Lot

Add Another Lot

Section E - Proposed Project Lot/Building Details

This section is used to describe what you are proposing to do in this project. For example, if you were going to create 4 lots for construction of single family residences, you would list each lot, proposed acreage, proposed buildings, and proposed use.

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
1	1.4	Residential

4 Is the lot being created as part of a subdivision? Yes No

5 Are you requesting that the Blood, Marriage, or Civil Union special fee be applied to this lot? Yes No

6 If the lot is exempt, please indicate the specific exemption from the Wastewater System and Potable Water Supply Rules?

7 Provide the following information for each building on the lot:

(a) Building ID	(b) If building is exempt, indicate exemption	(c) Construction or increased flow?	(d) Proposed Use
X Existing House		<input checked="" type="checkbox"/>	Residential

Add Another Building

Remove This Lot

Add Another Lot

Part V Water Supply Information

Section A - Water Supply Screening Questions

- 1 Are you proposing a new water supply for this project? Yes No
 - 2 Are you proposing changes to an existing water supply for this project? Yes No
 - 3 Is there a connection to an existing water supply for the project? Yes No
- If you answered No to all three of the above questions, skip to Part VI. Otherwise, proceed with Part V.*

Section B - General Water Supply Questions

- 1 Does this project involve a failed water supply? Yes No
- 2 Will any of the proposed water sources serve 25 or more people or have 15 or more service connections? Yes No
If Yes, the applicant must contact the Water Supply Division at (802) 241-3400 for source, construction and operating
- 3 Are any of the existing or proposed water sources located within a special flood hazard area? Yes No
- 4 Are any of the existing or proposed water sources located within a floodway? Yes No
- 5 Are any of the proposed water sources located within 1 mile of a hazardous waste site as designated by the Waste Management Division and identified on the Agency mapping website? Yes No
If Yes, please submit additional information on the site. The Waste Management Division can be reached at (802) 241-3888.
- 6 Does this project require an approval letter from the Water Supply Division for the construction of a public water system, municipal water line extension over 500 feet, or hydrants or sprinkler systems? Yes No
If Yes, please submit a copy of the approval letter from the Water Supply Division.
- 7 Does the proposed or existing water supply(ies) use a water treatment device to obtain compliance with the quality requirements in the Water Supply Rule? Yes No
If Yes, please submit additional information regarding the constituent(s) that exceeds the standards and plans, details, and specifications of the treatment device.
- 8 Is any portion of the proposed water supply located in or near a Water Source Protection Area as designated by the Water Supply Division? Yes No
If in areas of known interference issues, please contact the Water Supply Division at (802) 241-3400.

Section C - Individual Water Supply Details

Please provide the following information for each of the existing and proposed water supply(ies) serving a building or structure, or campground on the property.

1 Water Supply Name/Identifier House well	2 Water Supply Owner (if not Applicant)
3 Water Source Type Non-Public Drilled Bedrock Well	4 Type of Change to Supply No Change

5 Lots/Buildings Served by this Water Supply System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's Supply	Design Flows (Gallons Per Day)			(g) Rule or Meter Based Flows
				(d) Existing	(e) Increase	(f) Total	
X	1	Ex. House	No Change	490	0	490	Rule-based
Add Another Lot/Building Served by this Supply				6	7	8	
				490	0	490	

- 9 Is this water supply located off-lot? Yes No
 - 10 Is this water supply shared? Yes No
- If the water supply is located off-lot or shared, submit a copy of the agreement to provide an easement prior to construction.*

11 Is a variance being requested for this water supply? Yes No

If Yes, please submit additional details related to the variance request.

Remove This Water Supply

Add Another Water Supply

Section D - Water Supply Design Flows Summary Table

1 If the project includes more than one water supply, please list each water supply system and provide the total water supply design flows for the project. **IMPORTANT:** Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table.

		Design Flows (Gallons Per Day)		
(a) Water Supply Name/Identifier	(b) Existing	(c) Increase	(d) Total	
<input checked="" type="checkbox"/> Ex. House Well	490	0	490	
Add Another Water Supply	2	3	4	
	490	0	490	

Part VI Wastewater Disposal System Information

Section A - Wastewater Disposal System Screening Questions

- 1 Are you proposing a new wastewater disposal system or replacement area for this project? Yes No
- 2 Are you proposing changes to an existing wastewater disposal system for this project? Yes No
- 3 Is there a connection to an existing wastewater disposal system for the project? Yes No

If you answered **No** to all three of the above questions, skip to Part VII. Otherwise, proceed with Part VI.

Section B - General Wastewater Disposal System Questions

- 1 Does this project involve a failed wastewater disposal system? Yes No
- 2 Do any of the systems require a curtain or dewatering drain as part of the design? Yes No
- 3 Is a hydrogeologic study required for this project? Yes No
- 4 If the project has a soil-based wastewater disposal system with design flows that exceed 1,000 GPD, is this project located in a Class A Watershed? Yes No NA

If Yes, indicate the Class A Watershed in which the system(s) is located:

(a) Class A Watershed Name

- 5 Are there any existing or proposed floor drains as part of this project? Yes No

If Yes, indicate where the floor drains will discharge:

(a) Floor Drain Discharge Point

- 6 If the project utilizes an Innovative/Alternative System or Product, has the applicant received a copy of the Wastewater Management Division's approval letter? Yes No NA

- 7 Is any portion of the proposed wastewater disposal system located in or near a Water Source Protection Area as designated by the Water Supply Division? Yes No

If Yes, contact the Water Supply Division at (802) 241-3400.

Section C - Individual Wastewater Disposal System Details

Please provide the following information for each of the existing and proposed wastewater disposal systems serving a building or structure, or campground on the property.

1 Wastewater Disposal System Name/Identifier Ex. House New System				2 Wastewater Disposal System Owner (if not Applicant)			
3 Wastewater Disposal System Type In-ground				4 Type of Change to System New System			
5 Lots/Buildings Served by this Wastewater Disposal System							
				Design Flows (Gallons Per Day)			
(a) Lot#	(b) Building ID	(c) Type of Change to the Building's System	(d) Existing	(e) Increase	(f) Infiltration	(g) Total	(h) Rule or Meter Based Flows
X 1	Ex. House	Connection to New System	0	490	0	490	Rule-based
Add Another Lot/Building Served by this System			6	7	8	9	
			0	490	0	490	
10 Is this wastewater disposal system located off-lot?							<input type="radio"/> Yes <input checked="" type="radio"/> No
11 Is this wastewater disposal system shared?							<input type="radio"/> Yes <input checked="" type="radio"/> No
<i>If the wastewater disposal system is located off-lot or shared, submit a copy of the agreement to provide an easement prior to initiation of construction.</i>							
12 Is a variance being requested for this wastewater disposal system?							<input type="radio"/> Yes <input checked="" type="radio"/> No
<i>If Yes, please submit additional details related to the variance request.</i>							
13 If this wastewater disposal system type is a connection to an Indirect Discharge System, please provide the Indirect Discharge System ID number. Indirect Discharge System ID Number <input type="text"/>							
14 If this wastewater disposal system type is a connection to a municipal system, please select the town. Town <input type="text"/>							
15 If this wastewater disposal system is a soil-based system, please select the design approach used. Design Approach Used <input type="text" value="Prescriptive"/>							
16 For soil-based systems, please check all that apply. <input type="checkbox"/> Storage and Dose <input checked="" type="checkbox"/> Filtrate							
17 If this is an Innovative/Alternative soil-based system, please select the system use type. Innovative/Alternative System Use Type <input type="text" value="General"/>							
18 If this is an Innovative/Alternative soil-based system, please select the Innovative/Alternative system or product. Innovative/Alternative System or Product <input type="text" value="EcoFlo Bio-Filter"/>							
<input type="button" value="Remove This Wastewater System"/>							
<input type="button" value="Add Another Wastewater System"/>							

Section D - Wastewater Disposal Systems Design Flows Summary Table

1 If the project includes more than one wastewater disposal system, please list each system on this page and provide the total wastewater disposal design flows for the project. **IMPORTANT:** Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table.

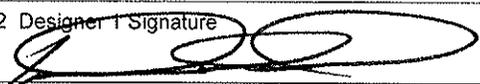
		Design Flows (Gallons Per Day)			
(a) Wastewater Disposal System Name/Identifier		(b) Existing	(c) Increase	(d) Infiltration	(e) Total
<input checked="" type="checkbox"/>	Ex. House New System	0	490	0	490
Add Another Wastewater System		2	3	4	5
		0	490	0	490

Part VII Application Fees

1 Fee Amount

2 Fee Calculation Details

As administered by the Town of Charlotte @ \$500 per building = \$500

Part VIII Designer Certification & Copyright License		
Section A - Certifying Designer 1 Certification & Copyright License		
<p>"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.</p> <p>As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."</p>		
<p>1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section A, Line 13.</p> <p><input checked="" type="checkbox"/> Water Supply Designer</p> <p><input checked="" type="checkbox"/> Wastewater Disposal System Designer</p>		
<p>1 Designer 1 Name</p> <p>David S. Marshall</p>	<p>2 Designer 1 Signature</p> 	<p>3 Signature Date</p> <p>6-2-11</p>
Section B - Certifying Designer 2 Certification & Copyright License		
<p>"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.</p> <p>As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."</p>		
<p>1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section B, Line 13.</p> <p><input type="checkbox"/> Water Supply Designer</p> <p><input type="checkbox"/> Wastewater Disposal System Designer</p>		
<p>1 Designer 2 Name</p> <p></p>	<p>2 Designer 2 Signature</p> <p></p>	<p>3 Signature Date</p> <p></p>

Part IX Applicant(s) Signature & Acknowledgements

In order to insure compliance with the requirements of the regulations administered by the Department of Environmental Conservation, Wastewater Management Division, it may be necessary to visit the property. As this would involve a Department employee entering private property, we request your approval to do so.

1 If we do visit your property, do you have any special instructions?

"As landowner of the property for which I am requesting a permit from the Department of Environmental Conservation, I understand that by signing this application I am granting permission for the Department employees to enter the property, during normal working hours, to insure compliance of the property with the applicable rules of the Department.

I also understand that I am not allowed to commence any site work or construction on this project without written approval from the Department of Environmental Conservation.

If my project utilizes an Innovative/Alternative System or Product, I have received a copy of the Wastewater Management Division's approval letter and agree to abide by the conditions of the approval.

I also certify that to the best of my knowledge and belief the information submitted above is true, accurate and complete."

X	2 Print Applicant Name	3 Applicant Signature	4 Signature Date
	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>	<div style="border: 1px solid black; height: 20px;"></div>

Add Applicant Signature Block

***Landowners Written Acknowledgement of the
Innovative Approval Letter #2002-02-R2 (2008 Renewal)***

June 2, 2011

This letter is to certify that the applicant has received a copy of the Innovative/Alternative System Approval #2002-02 R1 letter amended 06/11/08 by Roger Thompson, Jr., Regional Office Programs Manager for the State of Vermont. The applicant has also received a copy of the Premier Tech Biofilter maintenance agreement.

I, _____, have received a copy of the Innovative/Alternative System Approval #2002-02 R2 letter, and a copy of the EcoFlo Biofilter maintenance agreement from Civil Engineering Associates, Inc. and recognize that an executed agreement must be in place prior to construction. The inspection Professional Engineer will certify that this requirement has been met as part of the construction certification.

Name

Date

Congratulations on your purchase of an Ecoflo® Biofilter system from Premier Tech Aqua (PTA). With the Ecoflo® Biofilter system, you have wisely chosen to protect your health and the environment. This manual contains the operating instructions, usage and maintenance guidelines and warranties for the Ecoflo® Biofilter. For additional information, please contact our Customer Service Department at 1 800 632-6356 or visit our website at PREMIERTECHAQUA.COM.

Operating Principle

Onsite wastewater treatment systems must respect applicable local rules and regulations. These systems are specifically designed to treat residential wastewater to such a level that treated effluent can be safely returned to the environment. Typically, an onsite wastewater treatment system is composed of 2 to 3 main treatment steps depending on site constraints: primary treatment, treatment system and if required tertiary treatment or polishing.

Primary treatment

The septic tank is the primary treatment. It clarifies wastewater by letting suspended solids settle to the bottom and retaining floating matter to prevent premature clogging of the treatment system. It is strongly recommended that the septic tank be equipped with an effluent filter. Every septic tank and effluent filter shall be installed according to the local regulations.

For more information on the operation, operating guidelines, maintenance and warranties of PTA's septic tanks and effluent filters, please refer to these products' Owner's Manuals.

Treatment system

When the primary treatment is completed, the wastewater from the septic tank flows into the Ecoflo® Biofilter. Once in the biofilter, the water flows into a tipping bucket that spreads it alternately on the distribution plates installed on both sides of the central support. The wastewater then trickles through the natural filtering media. The treated effluent can then be discharged to the environment through an appropriate dispersal/disposal mean according to local regulations.

The Ecoflo® Biofilter's operating principle allows the system to be used continuously or intermittently without requiring any special precaution (**see Operating Guidelines**) or having any impact on the quality of the treatment. No action is required from the owner to start the system.

The number of Ecoflo® Biofilters is determined by the number of bedrooms in a home or, for any other type of building, by the total domestic wastewater flow per day. The model selection depends on the available surface area, the topography of the lot, as well as the type, permeability and depth of the natural soil on the site.

Tertiary treatment/polishing

When required, the Ecoflo® Biofilter can be combined with a PTA disinfection filter (FDI) or UV disinfection unit (DiUV) to reduce pathogen concentrations.

For more information on the operation, operating guidelines, maintenance, and warranties of PTA's FDI or DiUV, please refer to these products' Owner's Manuals.

Ecoflo® Biofilter Models

Each of the Ecoflo® Biofilter model has different characteristics. The number of the Ecoflo® Biofilter model provides these differences, for example: **STB-570PR**.

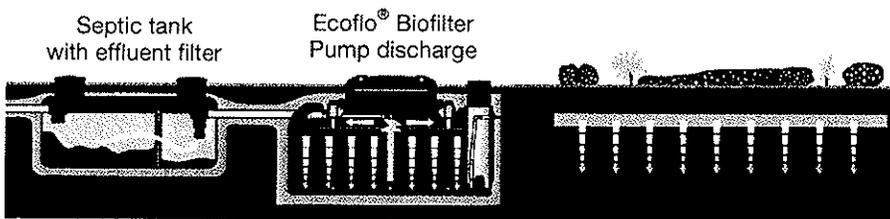
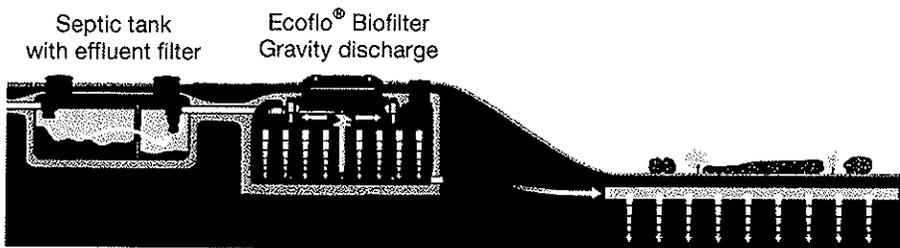
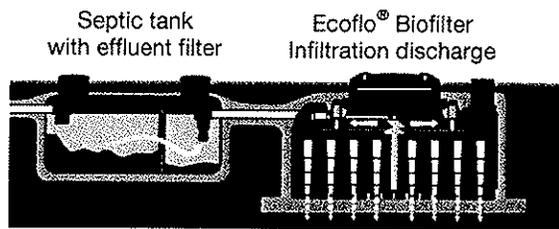
STB refers to the discharge method	ST = Open bottom (infiltration discharge) STB = Watertight bottom (gravity or pump discharge)
570 refers to the capacity ¹	500 = Nominal filtering media surface of 5.0 m ² (54 ft ²) 570 = Nominal filtering media surface of 5.7 m ² (61 ft ²) 650 = Nominal filtering media surface of 6.5 m ² (70 ft ²) 750 = Nominal filtering media surface of 7.5 m ² (81 ft ²)
P refers to the shell	Not mentioned = Fiberglass B = Concrete P = Polyethylene
R refers to the pump	Not mentioned = No pump R = With pump

¹ Consult local regulations to know more about the daily design flow for each Ecoflo® model

As such, the **STB-570PR** model refers to a polyethylene, watertight bottom Ecoflo® Biofilter with 5.7 m² (61 ft²) of filtering media surface and an integrated pump.

Installation Diagrams

NOTE: The installation diagrams below show Ecoflo® Biofilters with polyethylene shells.



Operating Guidelines

Type of wastewater that can be treated by an Ecoflo® Biofilter:

Domestic wastewater (for example: wastewater from isolated dwellings)

It is **NOT RECOMMENDED** to discharge any of the following substances into the septic system:

- Water softener backwash
- Oil and grease (motor oil, cooking oil, etc.)
- Wax and resins
- Paints and solvents
- Petroleum products
- Any kind of pesticide
- Any kind of septic tank additive
- Toxic substances
- Anything not easily biodegradable (for example, coffee beans, cigarette butts, sanitary napkins, tampons, condoms, cotton swab, etc.)



AND

- **NEVER** open or go inside the septic tank or the Ecoflo® Biofilter.
- **Keep** all lids of the septic system accessible at all times. **NEVER** cover them with mulch, dirt or any permanent structure.
- **Make** sure all lids of the septic system are at least 50 mm (2") above the surface of the landscaped lot.
- **NEVER** install a riser on a polyethylene or fiberglass open bottom Ecoflo® Biofilter access.
- **NEVER** install more than ONE (1) RISER on a concrete or fiberglass watertight bottom Ecoflo® Biofilter access. Use only PTA products. For the fiberglass watertight bottom Ecoflo® Biofilter, also use the four (4) polystyrene foam provided by PTA.
- **NEVER** plant trees within 6 m (20') of the Ecoflo® Biofilter lid and within 2 m (6'6") of the absorption bed.
- **NEVER** connect a drain pipe, roof gutter, sump pump or air conditioner drain to the septic system.
- **NEVER** discharge water from a spa or a pool backwash into any of the components of your septic system.
- **NEVER** discharge wastewater from a recreation vehicle (camping trailer, caravan, etc.) into any of the components of your septic system.
- **NEVER** use automatic toilet bowl cleaners.
- **DO NOT** let anything accumulate on top of the septic system (for example, blown snow). The overload can damage your system.

By respecting these guidelines, you contribute to the proper functioning of your septic system and help prolong the life of your Ecoflo® Biofilter's filtering media.

Owner's responsibility

The owner must respect all existing laws and regulations enforced concerning the effluent quality and its discharge into the environment. The owner of the wastewater treatment system is responsible for its installation, use and maintenance.

Keep heavy objects off your septic system

Never drive a vehicle or place objects weighing more than 225 kg (500 lb) within 5 m (16'5") of the lid of your Ecoflo® Biofilter. If you are planning to do some landscaping or any other type of work, **make sure you advise those involved** so they do not damage your septic system. **Do not let snow (shovelled or blown) accumulate on top of the septic system.** The overload could damage it. Mark or indicate the location of your system's components.

About your home

Your home must be equipped with an air vent that is in proper working order and all plumbing must comply with the applicable standards of the building code in your location. Every septic tank must be ventilated by an air duct with a diameter of at least 100 mm (4") or be connected to the air vent of the isolated dwelling being served. Premier Tech Aqua strongly recommends using a pipe with a diameter of 100 mm (4") for the air vent.

Any change in the use of your home or any modification to your Ecoflo® Biofilter must be authorized by the local authorities, and Premier Tech Aqua must be advised. If this requirement is not fully met, the warranty for your Ecoflo® Biofilter will be null and void.

Maintenance

Septic tank

Empty your septic tank regularly. This helps to keep your septic system in proper working conditions. Every septic tank and effluent filter shall be inspected and maintained as prescribed by local regulations.

If your home is equipped with a garbage disposal or a sewage pump, we strongly recommend emptying your septic tank more frequently. Using this kind of equipment increases the amount of sludge in the septic tank.

To have a complete record of the maintenance done on your septic system, we recommend you to keep the proof of maintenance (invoice) with this Owner's Manual.

IMPORTANT: Septic tanks can be emptied in several ways that can be classified into two categories: **complete emptying and selective emptying**. Complete emptying, which is the category usually used, consists of completely pumping the contents of the septic tank. It's easy to check if the work was properly done because the septic tank will be completely empty when the vacuum truck leaves the site. Selective emptying is divided into two sub-categories: with a filter (or recycled) or without a filter. The method with a filter requires a truck that has been adapted for this type of emptying, that is, one that separates and retains the solids from the wastewater. The mechanically clarified water is then returned to the septic tank. The selective method without a filter allows the solids to settle while in the truck before the water is returned to the septic tank. As such, in an effort to ensure the Ecoflo® Biofilter continues to perform optimally, it is **very important that you ensure that the water that is returned to the septic tank has been properly clarified and does not contain or contains very few suspended solids**. We also recommend you to call one of the members of the PT Aqua network of local partners. He could assist and verify if the work is done according to your specific needs to best protect your Ecoflo® system.

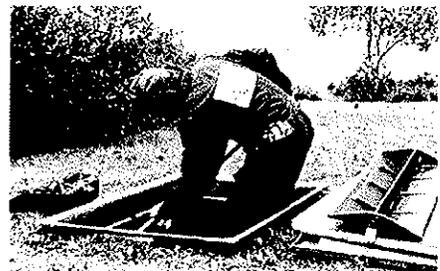
Effluent filter

Under normal usage conditions, as described in this manual, Premier Tech Aqua's effluent filter, the EFT-080 (or any other equivalent certified model) should operate efficiently for many years. It must be cleaned every time the septic tank is emptied, as established or recommended by local authorities.

Ecoflo® Biofilter

The owner of a biofiltration system shall follow the manufacturer's recommendations regarding the maintenance of the system. For that purpose, he must at all times have a valid contract with the manufacturer or its local representative and, depending on the local regulations, a copy of the contract may have to be filed to the authorities.

Annual maintenance is important to ensure optimal performance of your Ecoflo® Biofilter and essential to maintain its warranty. Therefore, your Biofilter must be serviced annually for the duration of its useful life. According to local regulations, more than 1 visit per year may be required.



The maintenance of your Ecoflo® Biofilter shall be carried out by one of our duly trained service provider. This service includes a visual inspection of all components and a verification of the operation, as well as maintenance of the filtering media. **For maintenance purposes and to replace the filtering media, you must ensure that your system's lid is easily accessible.** Never cover or bury the lid of the Ecoflo® Biofilter. After each inspection, a maintenance record shall be provided. Keep it with this manual in a safe place.

At the end of its eight (8) year life span, the filtering media is analyzed by one of our authorized agents. If the filtering media has not been abused and usage guidelines have been respected, the filtering media might not have to be replaced and can be used for an additional year. **However, your Ecoflo® Biofilter's filtering media must be replaced before the system's treatment capacity and performance begins to deteriorate.** The filtering media is easily pumped out using a truck adapted to pump septic tank sludge. The new filtering media is then installed by an authorized agent or the pumper.

To know more about the maintenance of your Ecoflo® Biofilter, refer to your Maintenance Agreement. If you need help or more information, please call our Customer Service Department at **1 800 632-6356** or visit our website at **PREMIERTECHAQUA.COM**.

Ecoflo® Biofilter with Pump

Some Ecoflo® Biofilters are equipped with a pumping station that directs the treated effluent to an appropriate disposal mean according to local regulations. The electro-mechanical components are included in this system. Here are some of the details.

Visual and audio alarm system

The pumping station is equipped with a high-water-level float connected to an alarm system. This alarm system must be installed inside the residence (home) so it can be heard when it is activated. The following information describes how this system works.

A red indicator lights up when the water level in the Ecoflo® Biofilter is unusually high. If an alarm is activated, contact **Premier Tech Aqua's** After-Sales Service Department because the incident has to be checked. To silence the alarm, press the **"SILENCE"** button.

The **"TEST"** button lets you check if the alarm system is working properly. During a test, the red indicator should light up and an audio alarm should be heard.

In the event of a power failure, the alarm system continues to function on an emergency 9-volt alkaline battery (not supplied). Using a rechargeable battery is not recommended.

NOTE: Replace the emergency battery every 12 months, each time the alarm is activated or whenever there is a power failure. If the battery is weak, the system will beep once every minute. When this occurs, replace the battery immediately.

To replace the 9-volt battery:

- Disconnect the alarm box and remove it from the wall (the battery must be inserted on the side of the box).
- Open the cover of the 9-volt battery compartment and replace the battery with a 9-volt alkaline battery.
- Close the cover, reinstall the box on the wall and reconnect it.
- If the alarm is activated, press the **"RESET/TEST"** button to initialize it.

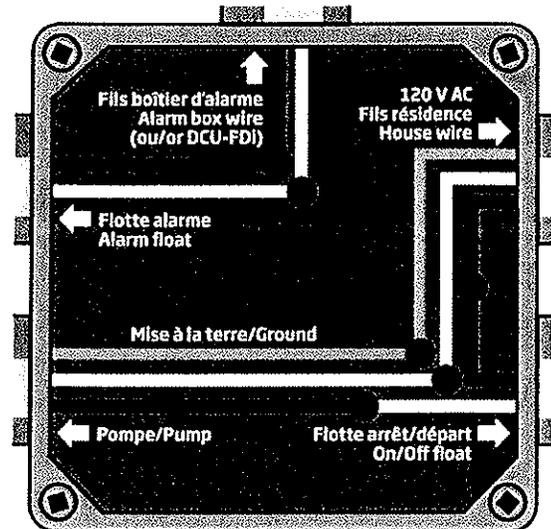


Alarm box for the pumping station

Electrical connections

All electrical connections must be done by a **certified electrician** and using seal connectors is mandatory. Premier Tech Aqua recommends installing the power box on top of the pumping station's insulating board to avoid problems with humidity.

Use two (2) separate circuit-breakers, one to operate the pump and the other to connect the alarm box. Do not connect anything else to these circuit-breakers (for example, a household appliance). They must be used exclusively for the pump and the alarm box.



What to do in case of...

Flooding

Certain sites are prone to flooding or to rises in groundwater levels. This can lead to a malfunction in your septic system or alter the performance of your Ecoflo® Biofilter. If this happens, contact Premier Tech Aqua's After-Sales Service Department.

Backflow

Backflow rarely occurs. But if it does happen, the septic tank is usually the cause. Your septic tank installer or septic tank pumper can generally take care of the situation.

Odours

All septic systems are apt to generate gases and odours. The position of the air vent, as well as other factors unrelated to the Ecoflo® Biofilter itself, can prevent septic gases from dispersing properly and lead to odours. If this happens, contact Premier Tech Aqua After-Sales Service Department to help resolved the problem.

IF YOU HAVE ANY QUESTIONS OR COMMENTS, DO NOT HESITATE TO
CONTACT OUR CUSTOMER SERVICE DEPARTMENT AT
1 800 632-6356



☎ 1 800 632-6356
☎ 418 862-6642
✉ pta@premiertech.com
PREMIERTECHAQUA.COM

The information contained in this document is based upon the latest information available at the time of publication and is designed to provide you with a general introduction to our products. We make no warranties or representations as to its accuracy. We are continually updating and improving our products and reserve the right to amend, discontinue, alter or change specifications and prices without prior notice. Ecoflo® is a brand of Premier Tech Ltd. The Ecoflo® Biofilter is protected under patents: Canada 2 149 202, 2 022 097 and 2 499 637. USA 5 618 414, 5 206 205, 7 097 758 and 7 790 035 and Europe 0 836 585 and 1 539 325.

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Certificate of Warranty for Ecoflo® Biofilters

1. PREAMBLE

Premier Tech Technologies Ltd. (hereinafter called "Premier Tech") is proud to provide its customers with an exclusive wastewater treatment system guaranteed by an innovative Warranty.

For the application and interpretation of this Warranty, "Customer" shall mean the person who has purchased an Ecoflo® Biofilter (hereinafter called "Initial Purchaser"), for a residential installation, as well as any subsequent purchaser (hereinafter called "Subsequent Purchaser(s)"), in accordance with the provisions of Section 8 of this Warranty. "Successor(s)" shall mean any other person entitled to exercise the same rights as the Customer under the law.

2. NATURE OF THE WARRANTY

2.1. Ecoflo® Biofilter

Premier Tech warrants to the Customer that the filtering media of the Ecoflo® Biofilter shall function properly for a period of eight (8) years from the date of purchase by the Initial Purchaser (proof of purchase required).

Except as provided in Sections 2.2 and 2.3 below, Premier Tech also warrants all the Ecoflo® Biofilter components against any manufacturing defect for a period of ten (10) years from the date of purchase by the Initial Purchaser (proof of purchase required).

2.2. Concrete

Premier Tech does not offer any additional Warranty on the shell of the concrete Ecoflo® Biofilter. Accordingly, Customer shall rely on the local concrete manufacturer's Warranty policy.

2.3. Pump, floats and alarm box

The pump, floats and alarm box included with the Ecoflo® Biofilter are guaranteed for two (2) years (parts and labour), from the date of purchase by the Initial Purchaser (proof of purchase required).

Premier Tech's conventional Warranty is expressly limited to the text of this Certificate and valid provided the Ecoflo® Biofilter was installed in accordance with applicable regulations and with the manufacturer's recommendations.

3. NOTICE

For this Warranty to be valid, the Customer must notify Premier Tech in writing immediately upon the appearance of any indication of an anomaly or irregularity in the Ecoflo® Biofilter.

Such notice shall be mailed to Premier Tech's Head Office at 1, avenue Premier, Rivière-du-Loup, Québec, G5R 6C1, CANADA or by facsimile at (418) 862-6642.

Upon receipt of this notice, Premier Tech shall examine the situation and, if necessary, take appropriate corrective measures in accordance with the terms of this Warranty.

4. GENERAL EXCLUSIONS

The following damages or problems are excluded from the Warranty:

(a) Any damage or problem caused by a fortuitous event or "force majeure," such as, without limiting the generality of the foregoing, an earthquake, a flood, frost, hurricane, landslide, explosion or dynamiting;

(b) Any damage or problem caused by the fault or act of a third party including, without limiting the generality of the foregoing, the execution of landscaping work;

(c) Any damage or problem arising from a defective installation carried out by a person trained by Premier Tech, or any installation, modification, correction or addition carried out by a person not trained by Premier Tech;

(d) Any damage or problem arising from any installation, modification, correction or addition to the treatment system carried out after installation of the Ecoflo® Biofilter without prior written approval from Premier Tech;

(e) Any damage or problem caused by the use of a septic tank that does not comply with the applicable regulations and/or with Premier Tech's specifications, as described in the Owner's Manual;

(f) Any damage or problem, if it is shown that the usage of the Ecoflo® Biofilter was not in accordance with the instructions and guidelines described in the Owner's Manual;

(g) Any damage or problem, if the maintenance of the Ecoflo® Biofilter was not carried out by a person authorized by Premier Tech, in accordance with the Maintenance Agreement;

(h) Any damage or problem caused by an omission or act of the Customer or the Customer's Successors including, without limiting the generality of the foregoing, refusal to allow access to the system for maintenance;

(i) Any damage or problem, if it is found that the Customer or the Customer's Successors have modified or changed the use of the property serviced by the Ecoflo® Biofilter resulting in the alteration of the nature or quality of wastewater being treated and/or that constitutes a violation of the applicable regulations;

(j) Any damage or problem caused by and/or resulting from the work carried out to access to the Ecoflo® Biofilter, including, without limiting the generality of the foregoing, excavation, snow removal or demolition;

(k) Any damage or problem resulting from condition of the site or of the soil and not reported or not properly reported to Premier Tech by the Customer or the person undertaking the site investigation.

5. PARTICULAR EXCLUSIONS

It is further expressly understood that the Customer may not carry out or cause to be carried out any repair or verification of the Ecoflo® Biofilter sold to him, or attempt to carry out any work or to apply any corrective measures whatsoever to said work, before notifying Premier Tech in accordance with the provisions of Section 3 of this Warranty and before Premier Tech has visited the site, within a reasonable time following receipt of said notice, to assess the situation.

If the Customer carries out or causes to be carried out repairs, or attempts to repair or to apply corrective measures of any kind whatsoever to the Ecoflo® Biofilter sold to him without prior authorization by Premier Tech, this Warranty shall be considered null and void and Premier Tech shall be considered completely discharged from any and all of its obligations under this Warranty.

Certificate of Warranty for Ecoflo® Biofilters

6. INDEMNITIES AND DAMAGES

Subject to the application of the provisions and exclusions provided for in this Warranty, Premier Tech's liability and obligations regarding any corrective measure carried out or any attempt to correct an indicated problem shall be limited to replacing the filtering media and/or one or several components of the Ecoflo® Biofilter and to supplying the required labour, if applicable.

7. LIMITATION OF LIABILITY

Premier Tech's compensation or indemnification obligation shall be limited to the provisions of Section 6 of this Certificate of Warranty and Premier Tech shall not be held liable for any other damage or loss that may have been suffered or incurred by the Customer or any third party in connection with the Ecoflo® Biofilter.

8. TRANSFER OF OWNERSHIP

In the event of transfer of ownership, sale, assignment or disposal in any way whatsoever of the Customer's property to a third party, this Warranty shall continue to apply if and only if the Subsequent Purchaser or the Successor confirms, by forwarding the attached "Notice of New Property Owner" to Premier Tech within a reasonable delay, that he/she is the new owner of the property, he/she understands and is aware of the content of this Certificate of Warranty and accepts its terms and conditions.

The person who proceeds with the transfer, sale, assignment or disposal of any way whatsoever of the property undertakes to hand over to the Subsequent Purchaser or the Successor the Certificate of Warranty provided upon completion of the work, as well as the Owner's Manual and, if applicable, the Maintenance and Environmental Monitoring Program for the Ecoflo® Biofilter. Failure to abide by the terms and conditions of Section 8 of this Certificate of Warranty may, at Premier Tech's discretion, render it invalid or to be rejected.

9. INSPECTION

The Customer and/or the Customer's Successors shall allow Premier Tech or its duly authorized representatives to carry out all necessary monitoring and inspections, as required, for implementation of this Warranty.

If the Customer and/or the Customer's Successors notify Premier Tech of an alleged defect or malfunction of the Ecoflo® Biofilter and that, after inspection, it is found that no such defect or malfunction exists, or, that such defect or malfunction is excluded from or does not apply to the Warranty, a minimum charge of \$150.00 plus direct expenses shall be paid by the Customer and/or the Customer's Successors for the cost of the inspection.

10. INTERPRETATION

The terms and conditions of this Warranty shall be interpreted according to and governed by the provisions of this Warranty and the legislation in effect in the Province of Quebec.

11. PRIORITY OF THE CERTIFICATE OF WARRANTY

This Warranty supersedes any contract or understanding, written or verbal, entered into between the Customer and Premier Tech. In the event of contradiction between this Warranty and any other documents and/or contracts entered into between the Customer and Premier Tech, this Warranty shall prevail.

12. PURCHASERS AND SUCCESSORS

Subject to the provisions of this Warranty and especially those of Section 8, this Warranty shall continue to be valid for Subsequent Purchasers and Successors and shall continue to have full effect until the end of the agreed Warranty period provided for in Section 2 of this Certificate.

Notice of New Property Owner

Send a copy to Premier Tech Aqua.

Name of previous owner: _____

I, the undersigned, _____ hereby declare that I have acquired the property located at

Civic Number	Street	City	Province or State
--------------	--------	------	-------------------

_____ () _____

ZIP or Postal Code	Phone number
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I have read and I understand the Warranty provided by Premier Tech Technologies Ltd for the Ecoflo® Biofilter. I wish to benefit from this Warranty for the remaining period, if any, and from the date of the transfer of ownership, that is, _____. I accept to be bound by this Warranty and by any and all of the sections, undertakings and conditions set forth therein. I have had the opportunity to examine the Ecoflo® Biofilter and declare myself satisfied with it at the time of this transfer. I ask Premier Tech Technologies Ltd. to take note of this transfer of ownership.

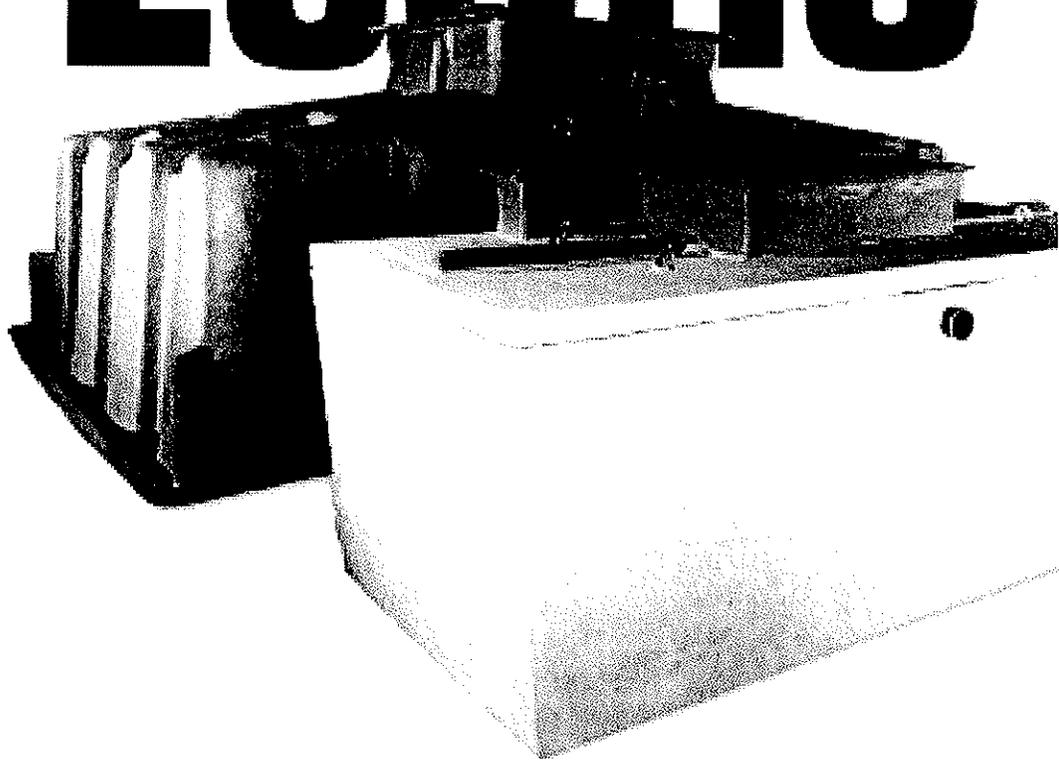
Signature: _____ Date: _____

Name of new owner: _____
(please print)

Language preference: English French New owner's e-mail address: _____

**Owner's responsibilities
regarding the warranty**

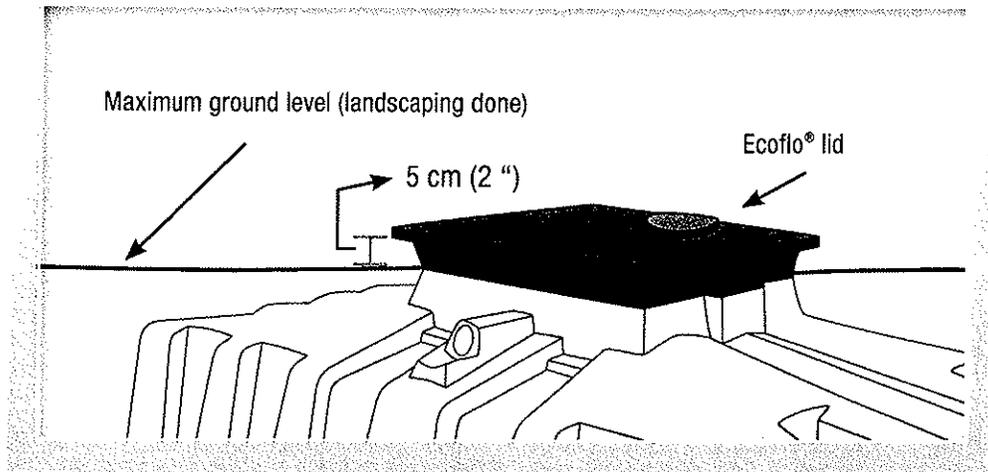
Ecoflo[®]



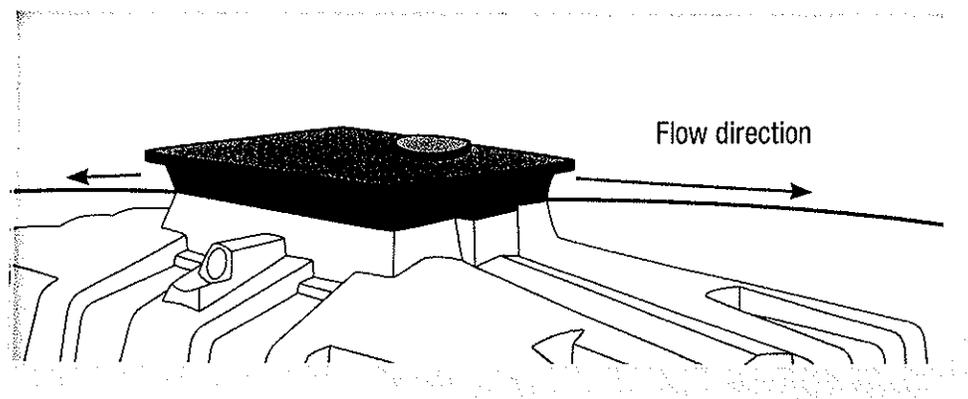
P **PREMIER TECH**
AQUA

The lid

Make sure that the Ecoflo® lid is at least **5 cm (2")** above **ground level** (grass included). This measure will help prevent water infiltration and make system maintenance easier.

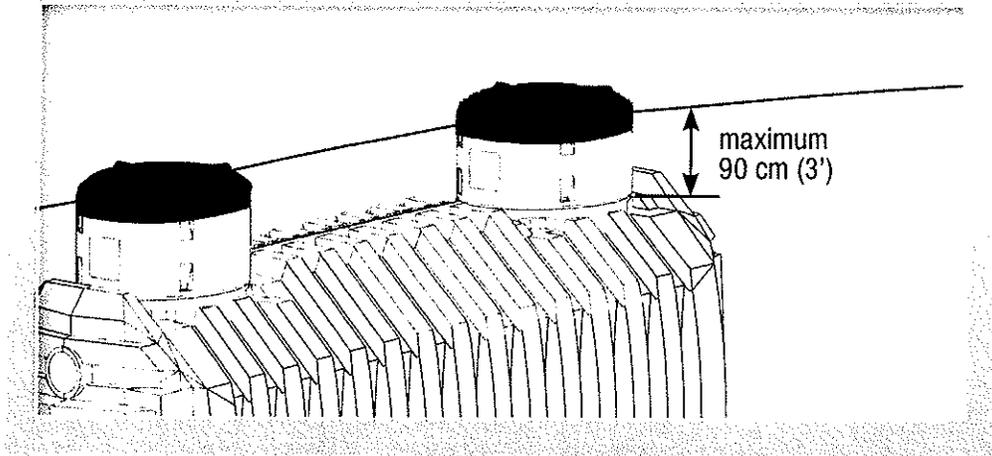


Make sure that the soil surrounding the lid **allows surface run off** to easily flow away from the lid.

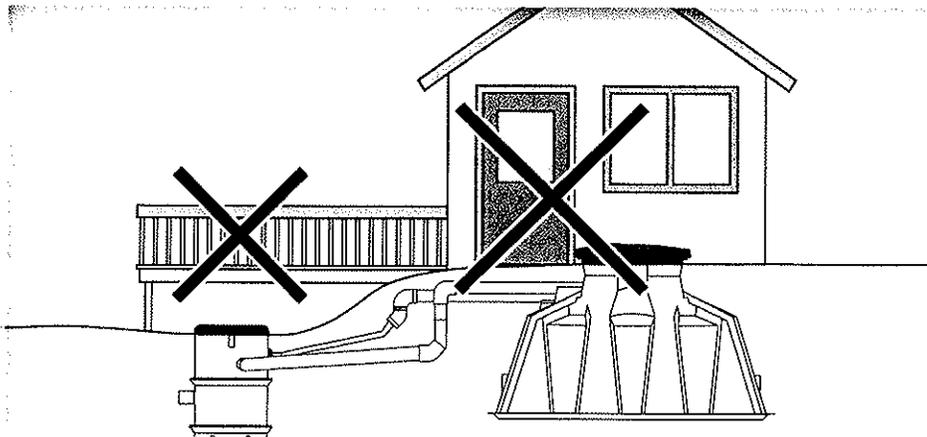


The lid

The backfill on top of your septic tank should not exceed 90 cm (3').

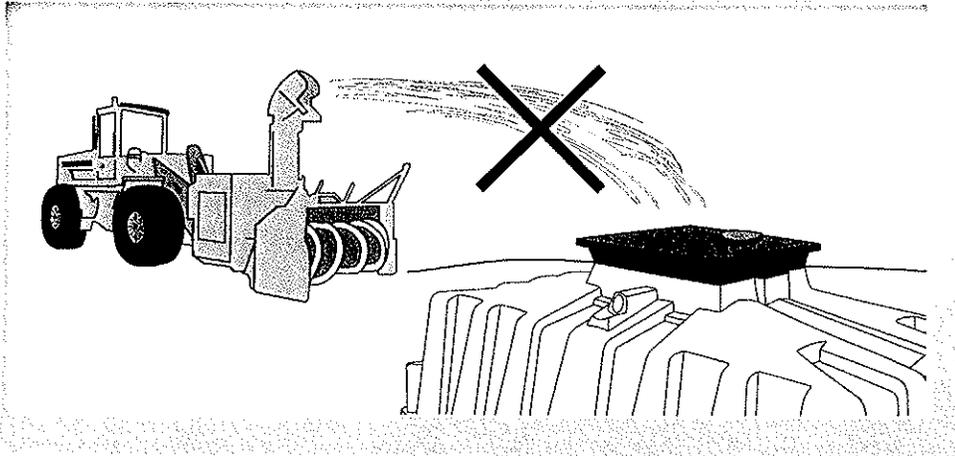


Keep all lids of the septic system accessible at all times. Avoid covering them with mulch, dirt or any structure (such as a garden shed, play structure, or deck).



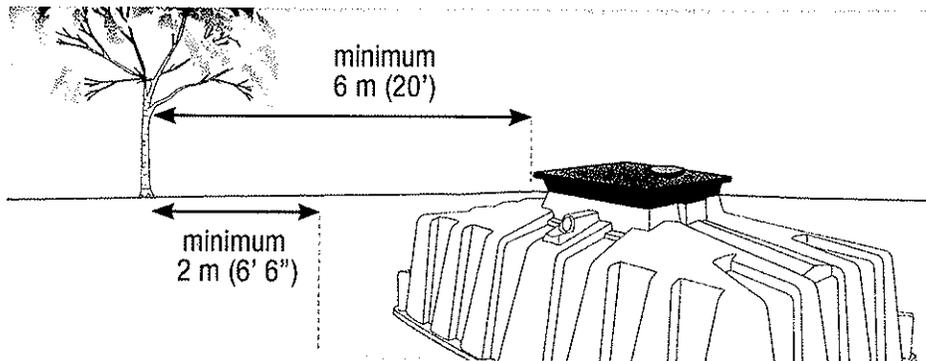
The lid

Do not blow or shovel snow on your septic system.



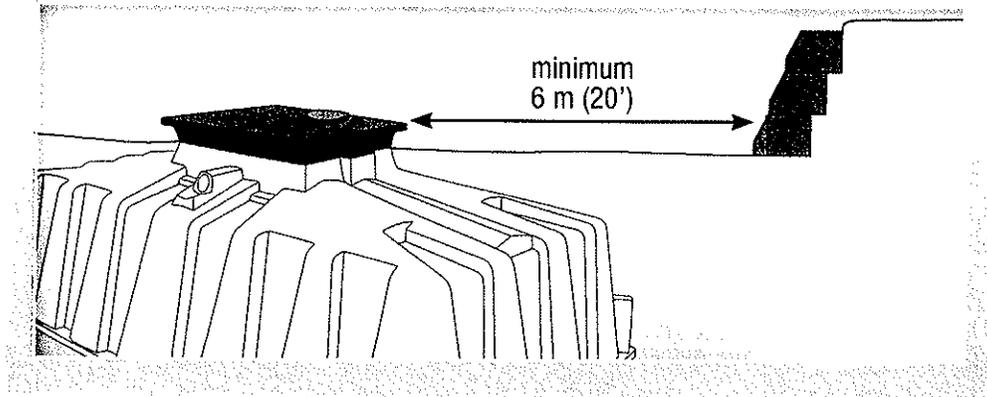
Trees and shrubs

Maintain your trees at a distance of at least 2 m (6' 6") from the absorption bed (cleaned crushed stone zone) and 6 m (20') from the lid of the Ecoflo®.

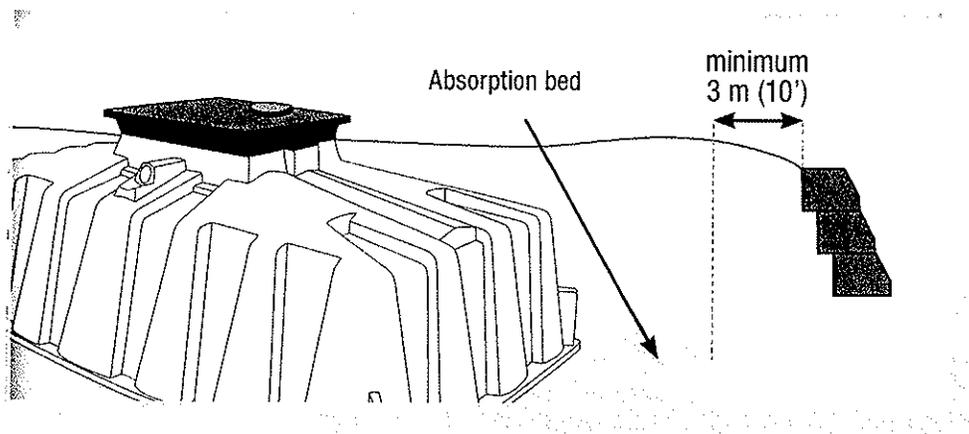


Embankment (supporting wall)

A minimum distance of 6 m (20') is required between the lid of the Ecoflo® and the embankment (or supporting wall). The Ecoflo® should never be used as a supporting wall.

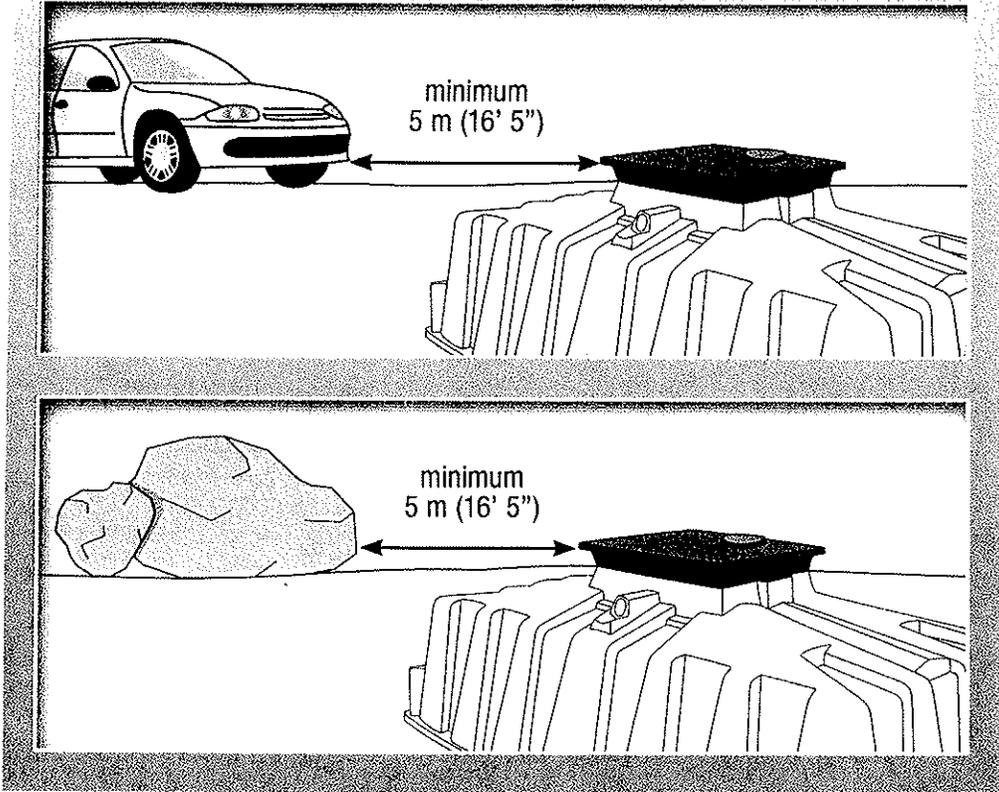


Maintain a distance of 3 m (10') between the top of the embankment and the absorption bed (cleaned crushed stone zone) to avoid resurgence.



Overload

It is important not to drive vehicles or place objects that weigh more than 225 kg (500 lb) within 5 m (16' 5") of the lid.



☎ **1 800 632-6356**
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