pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0255751**
Wastewater Type	**Sewage**	APS ID	**1022002**
Facility Type	**SFTF**	Authorization ID	**1324367**

NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP

Applicant, Facility and Project Information

Applicant Name	**Mountain View Mennonite Church**	Facility Name	**Mountain View Mennonite Church Properties**
Applicant Address	203 High Street	Facility Address	1154 Street Paul Road
	Salisbury, PA 15558-2203		Salisbury, PA 15558
Applicant Contact	Arlin Yoder	Facility Contact	***same as applicant***
Applicant Phone	(814) 442-8607	Facility Phone	***same as applicant***
Client ID	358017	Site ID	844628
SIC Code	N/A	Municipality	Elk Lick Township
SIC Description	N/A	County	Somerset
Date Application Received	August 19, 2020	WQM Required	Yes
Date Application Accepted		WQM App. No.	5620402
Project Description	NPDES permit for treated sewage from a new 1,200 gpd small flow sewage treatment facility to serve the existing Mountain View Mennonite Church and apartment.		

Summary of Review

On August 19, 2020, on behalf of the Mountain View Mennonite Church, F.R. Brant Company submitted an application for an NPDES permit for discharges of treated sewage from a new small flow treatment facility (SFTF). An application for a Water Quality Management permit (pending WQM Permit No. 5620402) was submitted concurrently to authorize construction and operation of the SFTF. An Act 537 Plan Revision was approved by letter dated June 11, 2020 to the Elk Lick Township Supervisors for 3 EDUs (1,200 gallons per day).

The new SFTF will have a design flow of 1,200 gpd and a design organic loading of 0.90 lbs BOD-5/day and will replace a malfunctioning onlot system at the existing Mountain View Mennonite Church and apartment. The SFTF will discharge into an existing 6" diameter drainpipe that leads to an unnamed tributary to the Casselman River (Stream Code 39315). The unnamed tributary is designated for cold water fishes. There is a TMDL for the Casselman River.

The proposed SFTF consists of two septic tanks in series (1,500 gallons and 1,000-gallons), an Ecoflo Coco Filter (biofilter) Model EC7-1350 rated for 1,350 gpd, and a DiUV ultraviolet disinfection unit rated for 1,500 gpd. This facility is not eligible for a PAG-04 General NPDES permit because the biofilter is not a qualifying treatment unit per the SFTF design requirements in the current revision of the *Small Flow Treatment Facilities Manual*, December 2, 2006 (Doc. No. 362-0300-002). Notwithstanding the facility's deviation from the SFTF design requirements, the Ecoflo Coco Filter is certified compliant with Standard NSF/ANSI 40.

Per the Department's Onlot Alternate Technology Listings (see attached) and "[i]n accordance with Title 25, Chapter 73, Section 73.72, DEP classifies the Ecoflo EC7 Series Coco filter (Ecoflo EC7 Series) for use as an alternate onlot sewage treatment system. This classification permits the use of the Ecoflo as a treatment component used for the specific purposes of reducing CBOD5 and TSS in the sewage effluent prior to discharge to an absorption area. This system has demonstrated that it can produce an effluent which shall not exceed 10 mg/L CBOD5 and 10 mg/L TSS as monthly averages. With the use of an optional ultraviolet (uv) disinfection, the uv unit can also reduce fecal coliform concentrations to treatment levels which shall not exceed 200 cfu/100 ml on a monthly average basis."

Approve	Deny	Signatures	Date
X		*Ryan C. Decker* Ryan C. Decker, P.E. / Environmental Engineer	January 6, 2021
X		*Donald J. Leone* Donald J. Leone, P.E. / Environmental Engineer Manager	January 7, 2021

Summary of Review

25 Pa. Code § 71.64(d) requires that "Small flow treatment facilities and their appurtenances shall meet applicable design, installation, operation and other standards established for small flow treatment facilities by the Department under sections 202 and 207 of The Clean Streams Law (35 P. S. §§ 691.202 and 691.207) and shall obtain a Clean Streams Law permit and if there is a discharge to surface water, a National Pollutant Discharge Elimination System permit, prior to construction and operation."

The Department has established design standards for SFTFs in the aforementioned *Small Flow Treatment Facilities Manual*, which requires SFTFs to be "capable of continuously producing a suitable effluent (< 10 mg/L BOD5 and Total Suspended Solids (TSS)) without causing water pollution or public health hazards."

Pursuant to § 71.64(d), the *Small Flow Treatment Facilities Manual*, the Department's evaluation of the performance characteristics of the Ecoflo EC7 Series Coco Filter in the Onlot Alternate Technology Listings, and the use of ultraviolet light for disinfection, average monthly technology-based effluent limits of 10 mg/L will be imposed for BOD5 and TSS and a fecal coliform limit of 200/100mL will be imposed at Outfall 001. Since the applicant will use ultraviolet light for disinfection, no requirements for total residual chlorine are imposed. SFTFs with UV disinfection systems do not require UV intensity or transmittance monitoring in the permit.

In accordance with DEP's procedure for converting average monthly effluent limitations to instantaneous maximum (IMAX) effluent limitations—described in Chapter 2, Section C of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits,* October 1, 1997 (Doc. No. 362-0400-001)—IMAX limits of 20 mg/L also will be imposed for BOD5 and TSS.

Effluent limits of 6.0 (instantaneous minimum) and 9.0 (instantaneous maximum) for pH are imposed pursuant to 25 Pa. Code § 92a.47(a)(7) and 25 Pa. Code § 95.2(1).

Flow monitoring will be required pursuant to 25 Pa. Code § 92a.61(b). The design flow of the SFTF (1,200 gpd) will be imposed as the average monthly flow limit to ensure that the SFTF does not exceed its design capacity.

Sewage discharges with design flows <2,000 gpd do not require monitoring for Total Nitrogen and Total Phosphorus.

There is a May 26, 2009 Total Maximum Daily Load for acid mine drainage affected segments of the Casselman River watershed. The receiving water for the SFTF's discharges is an unnamed tributary of the Casselman River, but the tributary was not identified as an impaired water and the facility's discharges will not contribute aluminum, iron, or manganese to the watershed. Therefore, the facility is unaffected by the Casselman River TMDL.

Effluent limits for Outfall 001 (summarized on the attached page) are consistent with the Department's *Standard Operating Procedure for Clean Water Program New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications* (SOP No. BCW-PMT-003). The sampling frequencies for all parameters other than flow will be 1/month using grab samples in accordance with the self-monitoring requirements for sewage discharges in Chapter 6, Table 6-3 of the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits*. Flow must be measured at least 1/month.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Instant. Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (GPD)	1,200	XXX	XXX	XXX	XXX	XXX	1/month	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/month	Grab
Biochemical Oxygen Demand (BOD5)	XXX	XXX	XXX	10.0	XXX	20.0	1/month	Grab
Total Suspended Solids	XXX	XXX	XXX	10.0	XXX	20.0	1/month	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	1/month	Grab

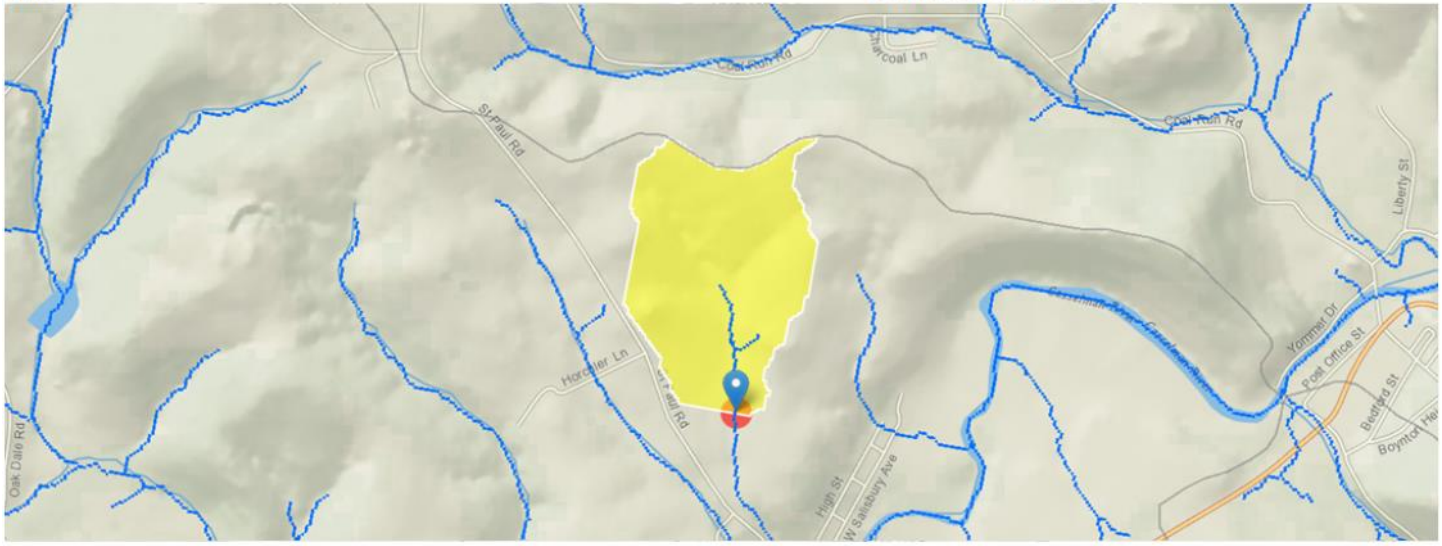
Compliance Sampling Location: Outfall 001

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.0012
Latitude	39° 45' 51.00"	Longitude	-79° 5' 37.00”
Quad Name	Meyersdale	Quad Code	2013
Wastewater Description:	Sewage effluent		
Receiving Waters	Unnamed Tributary to Casselman River (CWF)	Stream Code	39315
NHD Com ID	69922497	RMI	0.55
Drainage Area	0.18	Yield (cfs/mi^2)	0.0077
Q_{7-10} Flow (cfs)	0.00139	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2,129.24	Slope (ft/ft)	0.0159
Watershed No.	19F	Chapter 93 Class.	Cold Water Fishes
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment			
Source(s) of Impairment			
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority (PWS ID 5260011)		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None; discharge is new

StreamStats Report

Region ID:	PA
Workspace ID:	PA20201210230308242000
Clicked Point (Latitude, Longitude):	39.76418, -79.09373
Time:	2020-12-10 18:03:25 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.18	square miles
ELEV	Mean Basin Elevation	2196	feet

Low-Flow Statistics Parameters[Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.18	square miles	2.26	1400
ELEV	Mean Basin Elevation	2196	feet	1050	2580

Low-Flow Statistics Disclaimers[Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report[Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.00659	ft^3/s
30 Day 2 Year Low Flow	0.0143	ft^3/s
7 Day 10 Year Low Flow	0.00139	ft^3/s
30 Day 10 Year Low Flow	0.00359	ft^3/s
90 Day 10 Year Low Flow	0.00914	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Commonwealth of Pennsylvania
Department of Environmental Protection (DEP)
Bureau of Clean Water
Harrisburg, PA

Issued to: Premier Tech Aqua (A subsidiary of Premier Tech, Inc.)
1881 West North Temple
Salt Lake City, UT 84116
Phone: (450) 471-8444
www.premiertechaqua.com/wastewater-sewer-treatment-plants

Technology: Premier Tech Aqua Ecoflo Coco Biofilter (Ecoflo EC7 Series)

Classification Type: Alternate technology (A2017-0029-0001)

Classification Date: February 1, 2017

In accordance with Title 25, Chapter 73, Section 73.72, DEP classifies the Ecoflo EC7 Series Coco filter (Ecoflo EC7 Series) for use as an alternate onlot sewage treatment system. This classification permits the use of the Ecoflo as a treatment component used for the specific purposes of reducing $CBOD_5$ and TSS in the sewage effluent prior to discharge to an absorption area. This system has demonstrated that it can produce an effluent which shall not exceed 10 mg/L $CBOD_5$ and 10 mg/L TSS as monthly averages. With the use of an optional ultraviolet (uv) disinfection, the uv unit can also reduce fecal coliform concentrations to treatment levels which shall not exceed 200 cfu/100 ml on a monthly average basis. The inclusion of a uv disinfection unit is at the discretion of the homeowner.

I. Technology Description

The Ecoflo EC7 Series is an attached growth packed bed filter which uses organic fiber contained in a vessel for use as filtering media, chemical adsorption, and for biological microbial decomposition. The organic filtering media provides a surface where the contaminants, particulates or soluble forms are either physically filtered or adsorbed to the filtering media. Microorganisms will digest the contaminants attached to the media. The surface area of the filtering media provides ample locations for microbiological digestion with a smaller footprint. The filtering media are fragments of coconut husks (coco).

II. Design Requirements

A. Location: The Ecoflo EC7 Series may be installed for the treatment of domestic strength wastewater (as defined by Table 1 of Miscellaneous Data to be used in Conjunction with PA DEP listings) serving a new construction or as a repair.

B. Size: The Ecoflo EC7 Series units utilizing the nomenclature itemized in Section II.B Table 1 are acceptable for use. Acceptable Ecoflo EC7 Series Coco Filter units must also be a closed (sealed) bottom duly listed on the NSF Standard 40 certified web page. The selected tank for installation shall bear the seal of the NSF Standard No. 40. This model series has a hydraulic loading rate of 17.2 gpd/ft^2.

DEP Alternate Classification Listing
Premier Tech Peat Aqua Ecoflo Coco Filter (Ecoflo EC7 Series)
Classification Date: February 1, 2017

Table 1
EC7 Model Numbers

Nomenclature	*Rated Capacity in GPD* / (Ecoflo Units Number)					
	500 gpd	*600 gpd*	*700 gpd*	*1050 gpd*	*1200 gpd*	*1350 gpd*
	(2.8)	(3.4)	(4.1)	(5.7)	(6.5)	(7.3)
EC7-XXX-C-G	X	X	X	Not Available	X	Not Available
EC7-XXX-C-**P**	X	X	X	Not Available	X	Not Available
EC7-XXX-P-G	X	X	X	X	X	X
EC7-XXX-P-**P**	X	X	X	X	X	X
EC7-XXX-P-G-PACK	X	X	X	Not Available	Not Available	Not Available
EC7-XXX-P-**P**-PACK	X	X	X	Not Available	Not Available	Not Available

Where:
EC7 = Ecoflo EC7 Series
C = Concrete
G = Gravity
P(1st suffix)= Polyethylene
P(2nd suffix)= Pumped; (Models have "P" in boldface)
PACK = Primary tank and Coco filter preassembled in a monobloc configuration
X = Manufacturer has this model size available
XXX = Rated capacity ranging from 400 gpd to 1,500 gpd

C. Construction:

(1) The Ecoflo EC7 Series unit must be installed according to the manufacturer's installation manual and by a Premier Tech Aqua trained and authorized installer.

(2) The treatment sequence consists of either Case 1 or Case 2:

Case 1:

(a) a septic tank(s). Septic tank installations must consist of either a two-compartment rectangular tank, two rectangular tanks in series, and otherwise conform to meet the requirements of Section 73.31. Vertically aligned circular (rounds) tanks are not permitted,
(b) a PSA-240 (or equivalent) pumping station in pressure installations (depending on site configuration and topography);
(c) a standalone Ecoflo EC7 Series organic filtering media biofilter(s);
(d) a PSA-240L pumping station in pressure installations (for models without integrated pump within the unit) and;
(e) an absorption area described by Section II.E.

Aerobic treatment tanks must be in compliance with Section 73.32.

Case 2 (PACK Model):

(a) a monobloc containing the primary tank, a PSA-240 (or equivalent) pumping station in pressure installations (depending on site configuration and topography), an organic filtering media biofilter(s), a PSA-240L pumping station in pressure installations (for models without integrated pump within the unit) and;
(b) an absorption area described by Section II.E.

Aerobic treatment tanks must be in compliance with Section 73.32.

(3) An effluent filter must be placed on the outlet of the last septic/primary tank. The effluent filter must have a minimum filtration of 1/16 inch. Acceptable effluent filters include the Polylok PL-122, the PTA TLF-240, and the Zabel A300.

(4) Dosing to the Ecoflo EC7 Series unit should be between 8 to 10 gallons per dose.

(5) The maximum filtering media surface area required is determined using Equation 1. The total daily flow rate is designated by Q. The maximum daily hydraulic loading rate (HLR) that can be applied on the filtering media surface is itemized for the tank models in Section II.B.

$$\text{Equation (1)} \quad \text{Ecoflo EC7 Series required surface area } (ft^2) = \frac{Q}{HLR}$$

(6) Installations are required to have the volume of organic filtering media recommended by the manufacturer. The amount of organic filtering media varies depending upon the Ecoflo EC7 Series unit selected.

(7) Ecoflo EC7 Series models with an integrated dosing tank (See Section II.B) housed into the rotomold polyethelene vessels have limited maximum pumping distances and head. The integrated pump may be replaced with a larger pump to accommodate extended pumping distances and/or head.

(8) The Ecoflo EC7 Series unit must be constructed to provide access for inspection and sufficient access for replacement of the filtering media.

(9) The Ecoflo EC7 Series unit must be watertight and all outlets properly sealed against liquid and solid infiltration and exfiltration.

(10) The Ecoflo EC7 Series Coco Filter must include an air duct connected to the pumping station to ensure air circulation.

(11) Sites that utilize water softeners must plumb the water softener backwash into the treatment tank. The manufacturer recommends that salt-free water softeners be utilized.

D. Installation: An onsite preconstruction conference attended by the sewage enforcement officer, designer, installer, and the property owner prior to construction is recommended.

E. Use of the Component/System and Siting Requirements:

(1) For final treatment and disposal for an onlot system described in Chapter 73 other than IRSIS, up to a 40 percent reduction in the size of the absorption area is allowed where the percolation rate is in the range of 3 to 60 minutes per inch (min/in), inclusive. However, where the percolation rate is in the range of 61 to 180 min/in, inclusive, no reduction in absorption area sizing is permitted. Sufficient soil profiles must be conducted to ensure that a minimum of 20 inches of suitable soil is present under the entire area proposed for the absorption area.

(2) On sites exhibiting limiting zones greater than or equal to 20 inches from the mineral soil surface, the absorption area must be designed in accordance with the alternate at-grade absorption area. The soil profile must show that there is a minimum of 20 inches of suitable soil between the bottom of the proposed area and the limiting zone. Where the percolation rate is in the range of 3 to 60 minutes per inch, inclusive, up to a 40% reduction in the size of the absorption area is allowed. However, where the percolation rate is in the range of 61 to 180 min/in, inclusive, no reduction in absorption area sizing is permitted.

(3) On sites exhibiting limiting zones less than 20 inches from the mineral soil surface, the absorption area must be designed in accordance with the specifications described by the alternate shallow limiting zone at-grade absorption area. Ultraviolet (uv) disinfection is optional.

(4) The absorption area may also be designed in accordance with the specifications described by the alternate drip irrigation.

(5) Where sizing reductions are proposed, they are not cumulative. No additional sizing reduction is allowed for use of either an aerobic tank or infiltration chambers.

(6) If sizing reductions are proposed, where the system is used to serve a new dwelling, the soil profile evaluations and percolation testing must document that sufficient area is available for installation of a full-sized absorption area (prior to the calculation of the 40% reduction).

(7) The system must be designed to take full advantage of the slope to move effluent out from under the absorption area and downgradient with the laterals placed parallel to the contour.

III. Minimum Maintenance Standards

A. Service Contract: A service contract with a Service Provider qualified to maintain the Ecoflo treatment system is required. The service contract will require a minimum of one (1) site visit annually.

B. An authorized manufacturer representative/designee must meet with the property owner within one (1) month of system start-up and/or occupancy of the dwelling and with the local agency's SEO upon request, to explain the operation and maintenance of the system and provide written instructions to the property owner that includes:

(1) Premier Tech's Owner's Manual;

(2) Premier Tech's Operation and Maintenance Manual;

(3) Instructions on the operation and maintenance of the system;

(4) The locations of all parts of the system;
(5) A commitment that the manufacturer's service provider will investigate and troubleshoot system problems;
(6) Contact information for the manufacturer, the manufacturers' representatives, and manufacturer's service provider;

C. Warranty: The manufacturer must provide a minimum 2-year warranty on all defects due to materials or workmanship.

D. Inspection:
(1) Inspection of the area around the soil absorption area every 6 months by the homeowner to ensure that there is no ponding of effluent or downgradient seepage.
(2) The service provider shall inspect at least the following items at an interval frequency recommended by the manufacturer's requirements:
a) Inspect septic/primary tanks, dosing tanks, and lift pump tanks for structural integrity of the tank, inlet and outlet baffles, solids retainer, pumps, siphons, and electrical connections;
b) Inspect aerobic tanks/treatment units for structural integrity of the tank, inlets, outlet, water distribution system, pumps, siphons, and electrical connections.
c) Ensure that the pumping system is operational.
d) The effluent filter shall be inspected and maintained per the manufacturer's requirements.
(3) The service provider shall inspect and pump excess solids in accordance with the manufacturer's requirements.
(4) The surface of the filtering media shall be raked as necessary to assure that distribution to the filtering media is uniform. The Ecoflo representative shall provide to the homeowner upon request (1) digital pictures of the surface and the sides of the filtering media before and after inspection and maintenance of the Ecoflo unit and (2) a report on the condition of the filtering media (i.e. good, partially-degraded, or degraded).

E. The Premier Tech filtering media biofilter shall be operated and maintained according to the Premier Tech Operation and Maintenance Manual located on the manufacturer's website.

F. Filtering Media Replacement: The manufacturer recommends that the projected replacement of the coco filtering media will be approximately 10 to 12 years. The replacement period may vary depending on usage and will be on the recommendation of Premier Tech. Only filtering media provided by Premier Tech Aqua may be used. Since filtering media replacement is considered a maintenance activity, a repair permit shall not be necessary.

IV. Permitting Requirements

A. A sewage enforcement officer who has successfully completed an appropriate Department sponsored training course that included the absorption area that this listing will discharge may independently review the design and issue the permit for components under this listing. All other proposals under this listing must be submitted to the Department for review and comment.

B. Both the *Application for An Onlot Sewage Disposal* permit (Part III, Section 1) and the permit must include the manufacturer's warranty. The warranty must clearly notify the property owner of the need to replace the filtering media within the life expectancy period established by the manufacturer.
C. The sewage enforcement officer shall include on both the *Application for An Onlot Sewage Disposal* permit (Part III, Section 1) and the permit, the classification number itemized in the Classification Type of this listing.

V. Planning Requirements
Not applicable