



The Pennsylvania Association of  
SEWAGE ENFORCEMENT OFFICERS

# Small Flow Treatment Facilities

---

The Pennsylvania Association of Sewage Enforcement Officers  
2023 Annual Conference & Trade Show-Harrisburg, PA

Presented by: Adam Browning-Penn's Trail Environmental, LLC



## About me...

---

- Decentralized Wastewater Treatment Design & Permitting
  - Maryland
  - Pennsylvania
  - Out-of-State Consultation
- Land Planning Specialist
- PA Wastewater Treatment Operator
- Certified PA Sewage Enforcement Officer
- PSMA Certified Sewage System Inspector





## About me...

---

- Pennsylvania Association of Sewage Enforcement Officers
- Pennsylvania Onsite Wastewater Recycling Assoc. - BOD
- National Onsite Wastewater Recycling Association
- Pennsylvania Septage Management Association - BOD
- PADEP Sewage Advisory Committee
- Sustainable Business Network of Greater Philadelphia & Green Stormwater Infrastructure (GSI) Partners
- American Water Resources Association – Philadelphia
- Maryland Onsite Wastewater Professionals Assoc. - Member



# Penn's Trail Environmental, LLC

---

- Other Services...

- Phase I & II Environmental Assessments
- Wetland Delineations and Permitting
- Stormwater Testing
- Geologic & Hydrogeologic Evaluations
- NPDES Permitting (Wastewater Disposal)
- Operation and Maintenance Compliance





# Small Flow Treatment Facilities-Acronyms

---

- SRSTP - Single-Family Sewage Treatment Plant– sewage treatment facilities designed to treat up to 2,000 gallons of sewage per day generated from a single-family residence.
- SFTF - Small Flow Treatment Facilities – sewage treatment facilities designed to treat up to 2,000 gallons of sewage per day.
- NPDES - National Pollution Discharge Elimination System– created as an amendment to the Clean Water Act of 1972 to establish a permit program to control water pollution by regulation discharge of pollutants into the water of the United States. For discharge of treated sewage effluent in PA permits are issued as Individual or General Permits.
- WQM - Water Quality Management– Construction permits for facilities treating wastewater via NPDES or Land Application Permits. Permits are issued as Individual or General Permits. This presentation will focus on NPDES systems.

## Small Flow Treatment Facilities-Acronyms

---

- CBOD<sub>5</sub> - Carbonaceous Biochemical Oxygen Demand – the quantity of oxygen utilized in the biochemical oxidation of carbonaceous organic matter present in water or wastewater, reported as a five-day value determined using EPA/PADEP approved test methods. Oxidation of nitrogenous matter is inhibited
- TSS - Total Suspended Solids – waterborne particles that exceed 2 microns in size. Those particles smaller than 2 microns are considered Dissolved Solids.
- pH - Potenz Hydrogen – Potenz (German for power) – measure of acidity or alkalinity of an aqueous solution. Range of 0-14.
- DO - Dissolved Oxygen – measure of available oxygen in an aqueous solution.



## Small Flow Treatment Facilities-Acronyms

---

- TKN - Total Kjeldahl Nitrogen – measurement of organic nitrogen and ammonia nitrogen
- $\text{NO}_2/\text{NO}_3$  - Nitrite/Nitrate – nitrogen containing compounds. Nitrates convert to nitrites in the body and reduce oxygen uptake by the body's hemoglobin
- Total Nitrogen -  $\text{TKN} + \text{NO}_2/\text{NO}_3$
- TP - Total Phosphorus
- POFU - Point of First Use – first downstream point where the stream is capable of supporting existing or designated uses as defined in Chapter 93

## Small Flow Treatment Facilities - What?

---

- What exactly is a SFTF?
  - Package treatment plant capable of treating wastewater effluent to meet the parameters of PADEP advanced treatment criteria related to CBOD<sub>5</sub> and TSS, disinfection and, in certain cases, nitrogen removal.



## Small Flow Treatment Facilities – Who/Why?

---

- Who would want to pursue a SFTF?
  - Those seeking to repair a sewage malfunction, as determined by the local sewage enforcement officer, where soil-based sewage disposal system or public sewerage options are not available, and a defined conveyance method is available. IRSIS need not be considered unless in HQ/EV.
  - Those seeking to develop a vacant lot of record or increase sewage flows on a developed parcel, where soil-based sewage disposal system or public sewerage options are not available, and a defined conveyance method is available.

## Small Flow Treatment Facilities – Where?

---

- Where can or can't we propose a SFTF?
  - Must have a discharge point! Defined drainage swales, drainage pipes, intermittent or ephemeral watercourses and perennial watercourses.
  - PennDOT DOES NOT allow for discharge or passage of treated sewage effluent into or through ANY structures, earthen or man-made, owned by PennDOT.
  - High Quality/Exceptional Value watersheds –
    - Repairs....yes
    - New Construction....no



# Small Flow Treatment Facilities – How???

---

- How do we get to the finish line?

- ❖ Act 537 Land Planning –

- Sewage Facilities Planning Module Application Mailer
    - Component 3s Planning Module-SFTF

- ❖ NPDES Permitting

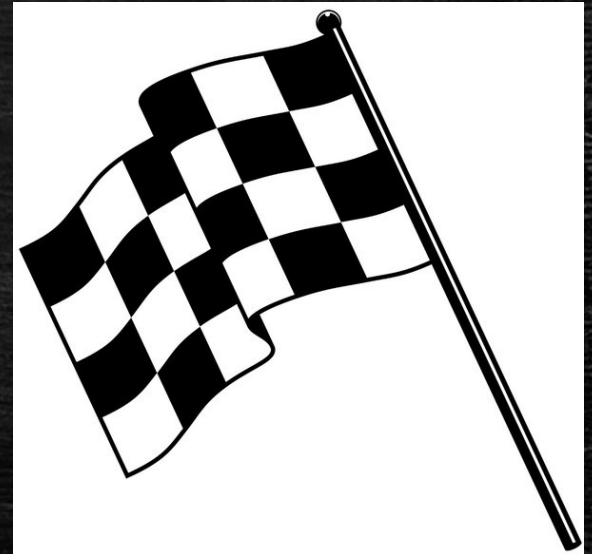
- General Permit
    - Individual Permit

- ❖ WQM Permitting

- General Permit
    - Individual Permit

- ❖ Operation & Maintenance

- O&M
    - Compliance



# Small Flow Treatment Facilities – How???

---

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

- Sewage Facilities Planning Module Application Mailer (3800-CD-BCW0359)
  - INCLUDE:
    - Application Mailer Form
    - Brief Narrative
    - Topographic map of site including proposed discharge point
    - Chapter 93 designation for receiving waters – Use eMapPA  
<https://gis.dep.pa.gov/emappa/>
    - Request the Department Planning Specialist engage the regional Aquatic Biologist to perform a POFU (not all regions comply)



**1. Development Information**

Name of Development \_\_\_\_\_  
 Developer Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 Telephone # \_\_\_\_\_  
 Email \_\_\_\_\_

**2. Location of Development**

a. County \_\_\_\_\_  
 b. Municipality \_\_\_\_\_  
 c. Address or Coordinates \_\_\_\_\_  
 \_\_\_\_\_  
 d. Tax Parcel # \_\_\_\_\_  
 e. USGS Quad Name \_\_\_\_\_  
 inches up \_\_\_\_\_ over \_\_\_\_\_  
 from bottom right corner of map.  
 f. Located in a High Quality/Exceptional Value watershed?  
☐ Yes ☐ No

**3. Type of Development Proposed** (check appropriate box)

☐ Residential ☐ Multi-Residential  
 Describe \_\_\_\_\_  
 \_\_\_\_\_  
☐ Commercial ☐ Institutional  
 Describe \_\_\_\_\_  
 \_\_\_\_\_  
☐ Brownfield Site Redevelopment  
☐ Other (specify) \_\_\_\_\_

**4. Size**

a. # of lots \_\_\_\_\_ # of EDUs \_\_\_\_\_  
 b. # of lots since 5/15/72 \_\_\_\_\_  
 c. Development Acreage \_\_\_\_\_  
 d. Remaining Acreage \_\_\_\_\_

**5. Sewage Flows** \_\_\_\_\_ gpd

**6. Proposed Sewage Disposal Method** (check appropriate boxes)

a. ☐ Sewerage System  
☐ Existing (connection only) ☐ New (extension)  
☐ Public ☐ Private  
☐ Pump Station(s)/Force Main ☐ Gravity  
 Name of existing system being extended \_\_\_\_\_

Interceptor Name \_\_\_\_\_  
 Treatment Facility Name \_\_\_\_\_

NPDES Permit # \_\_\_\_\_

b. ☐ Construction of Treatment Facility

☐ With Stream Discharge  
☐ With Land Application (not including IRSIS)  
☐ Other  
☐ Repair?

Name of waterbody where point of discharge is proposed  
 (if stream discharge) \_\_\_\_\_

c. ☐ Onlot Sewage Disposal Systems  
 (check appropriate box)  
☐ Individual onlot system(s) (including IRSIS)  
☐ Community onlot system  
☐ Large-Volume onlot system  
 d. ☐ Retaining tanks  
 Number of Holding Tanks \_\_\_\_\_  
 Number of Privies \_\_\_\_\_

**7. ☐ Request Sewage Facilities Planning Module forms in electronic format**

**8. Request for Planning Exemption**

a. Protection of rare, endangered or threatened species  
 Check one:  
☐ The "PNDI Project Environmental Review Receipt" is attached.  
 or  
☐ A completed "PNDI Project Planning & Environmental Review Form," (PNDI Form) is attached. I request DEP staff to complete the required PNDI search for my project. I realize that my planning exemption will be considered incomplete and that the DEP processing of my planning exemption request will be delayed, until a "PNDI Project Environmental Review Receipt" and all supporting documentation from jurisdictional agencies (when necessary) is/are received by DEP.

Applicant or Consultant Initials \_\_\_\_\_

b. ☐ Plot Plan Attached ☐ Site Reports Attached

c. Onlot Disposal Systems

(1) I certify that the Official Plan shows this area as an onlot service area.

\_\_\_\_\_/\_\_\_\_\_  
 (Signature of Municipal Official) Date

\_\_\_\_\_/\_\_\_\_\_  
 Name (Print) Title

Municipality (must be same as in 2.b.) \_\_\_\_\_

Telephone # \_\_\_\_\_

(2) I certify that each lot in this subdivision has been tested and is suitable for both a primary and replacement sewage disposal system.

\_\_\_\_\_/\_\_\_\_\_  
 Signature of SEO Date

\_\_\_\_\_/\_\_\_\_\_  
 Name (Print) Certification #

Telephone # \_\_\_\_\_  
 (3) I certify that each lot in this subdivision is at least 1 acre in size

\_\_\_\_\_/\_\_\_\_\_  
 (Signature of Project Applicant/Agent) Date

d. Public Sewerage Service (i.e., ownership by municipality or authority)

Based upon written documentation, I certify that the facilities proposed for use have capacity and that no overload exists or is projected within 5 years. (Attach documents.)

\_\_\_\_\_/\_\_\_\_\_  
 (Signature of Municipal Official) Date

\_\_\_\_\_/\_\_\_\_\_  
 Name (Print) Title

Municipality (must be same as in 2.b.) \_\_\_\_\_

Telephone # \_\_\_\_\_

# Sewage Facilities Planning Module Application Mailer

# Small Flow Treatment Facilities – How???

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

- Component 3s Planning Module (3800-FM-BPNPSM0353S)
- Extras...
  - Pennsylvania Historic & Museum Commission Review Letter
  - Neighbor Notifications/Easements
  - Operation and Maintenance Agreement

3800-FM-BPNPSM0353S 8/2012  
Checklist  


COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

### CHECKLIST

The individual completing the component should use the checklist below to assure that all items are included in the module package.

#### Small Flow Treatment Facilities

- ☐ Complete Component 3s form and attachments.
- ☐ USGS 7.5-minute topographic map with all planned and/or installed SFTFs plotted.
- ☐ Documentation required by the part of Section E appropriate to the project.
- ☐ Project description narrative.
- ☐ Documentation of chosen sewage management method (if applicable).
- ☐ Alternative analysis narrative.
- ☐ Copy of public notification (if applicable).
- ☐ Plot plan.
- ☐ Site Investigation and Percolation Test reports for all soil profile examinations and percolation tests.
- ☐ PNDI "Project Planning & Environmental Review Form" (request DEP search) or "Project Environmental Review Receipt" (self completed search) and all appropriate documentation for the form submitted.
- ☐ Completed Component 4 Planning Agency Review for each existing planning agency and/or health department (if applicable). (Planning Agency Comments are not required for repair proposals.)
- ☐ Permeability information (if applicable).
- ☐ Preliminary hydrogeology (if applicable).
- ☐ Detailed hydrogeology (if applicable).



# Small Flow Treatment Facilities – How???

---

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

### ■ Repairs.....

#### ■ Do not need...

- Section I. - Alternative Analysis
- Non-Perennial Effluent Path Easements
- Section O. – Public Notification unless in HQ/EV
- Component 4 Planning Agency Reviews

#### ■ Do need...

- Certified Receipt of Neighbor Notifications until perennial conditions are met.
- Section O. – Public Notification if in HQ/EV

# Small Flow Treatment Facilities – How???

---

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

### ■ New Construction.....

#### ■ Do not need...

- Certified Receipt of Neighbor Notifications until perennial conditions are met.

#### ■ Do need...

- Non-Perennial Effluent Path Easements
- Section I. – Alternative Analysis
- Section O. – Public Notification
- Component 4 Planning Agency Reviews



# Small Flow Treatment Facilities – How???

---

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

### ■ Non-Perennial Waterway

- Repairs-Certified Receipt of Neighbor Notifications of those parcels through which the treated effluent shall pass until perennial conditions are met.
- New-Recorded easements between applicant and property owners through which the treated effluent shall pass until perennial conditions are met.
- Justification of discharge point by identifying existing water supplies or groundwater uses within 200 feet of the path through which treated effluent shall pass until perennial conditions are met.

# Small Flow Treatment Facilities – How???

---

## ❖ Act 537 Land Planning

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

*ACT 537 PLANNING*

*QUESTIONS???*



# Small Flow Treatment Facilities – How???

---

## ❖ NPDES Permitting (General and Individual Permits)

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- General Permit – PAG-04 Discharges from a SFTF (3800-PM-BCW0093)
    - Discharge must come from a facility that meets the definition of a SFTF and is designed in accordance with the *Small Flow Treatment Facilities Manual*. ie: septic or aerobic tank treatment followed by a sand filter (Subsurface, Recirculating Subsurface, ~~CO-OP RFS III~~ Recirculating or Accessible)
    - May not be within a HQ/EV Watershed
    - Residential strength waste only
    - No formal renewal. Renews with General Permit Renewal and is subject thereto.
- CANNOT CURRENTLY BE USED FOR NEW COVERAGE UNTIL GENERAL PERMIT IS RENEWED!!

# Small Flow Treatment Facilities – How???

---

## ❖ NPDES Permitting (General and Individual Permits)

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- Individual NPDES Permit – for Small Flow Sewage Facilities (3800-PM-BCW0018)
  - Any SFTF NOT designed in accordance with the *Small Flow Treatment Facilities Manual*.
  - Any proposal within a HQ/EV Watershed
  - Requires formal renewal every 5 years.



# Small Flow Treatment Facilities – How???

---

## ❖ WQM Permitting (General and Individual Permits)

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- WQM-01 General Permit for Small Flow Sewage Facilities Notice of Intent (3850-PM-BCW0020)
  - Notice of Intent...to meet the requirements and criteria of the General Permit
  - In general, you can assume that if the proposal meets the criteria for a PAG-04 it would also meet the criteria for the WQM-01 General Permit

# Small Flow Treatment Facilities – How???

---

## ❖ WQM Permitting (General and Individual Permits)

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- WQM Permit Application Package (3850-PM-BCWo400)
  - Requires detailed description and capabilities of all proposed treatment components (individual design modules)
  - In general, you can assume that if the proposal DOES NOT meet the criteria for a PAG-o4 (NPDES) it would require an Individual WQM Permit



# Small Flow Treatment Facilities – How???

---

General and Individual Permits

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

*INDIVIDUAL & GENERAL PERMIT DIFFERENCES*

*QUESTIONS???*

# Small Flow Treatment Facilities – How???

## ❖ NPDES Permitting – Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- Individual NPDES Permit
  - General Information Form (GIF)
  - Act 14 Notifications
    - Municipal
    - County

APPLICANT'S CHECKLIST			
Applicant Name			
Check the following list to make sure that you have included all the required information. Place a checkmark in the box provided for all items completed and/or provided.			
<b>ENCLOSE THIS CHECKLIST WITH YOUR COMPLETED APPLICATION FORM. FAILURE TO SUBMIT ALL REQUIRED INFORMATION MAY RESULT IN DENIAL OF THE APPLICATION.</b>			
	REQUIREMENTS FOR ALL APPLICANTS	Check <input type="checkbox"/> if Included	DEP Use Only
1.	Application Fee (for new applications only). Amount Enclosed \$ _____	<input type="checkbox"/>	
2.	One signed original and 2 copies of the completed application (One copy if submitted electronically through <a href="#">OnBase</a> ).	<input type="checkbox"/>	
3.	One additional copy of application for Erie County Health Department (if located in Erie County).	<input type="checkbox"/>	
4.	One copy of application mailed to Allegheny County Health Department (if located in Allegheny County)	<input type="checkbox"/>	
5.	One copy of the General Information Form (0210-PM-PIO0001).	<input type="checkbox"/>	
6.	Proper evidence of Act 14 municipal and county notifications.	<input type="checkbox"/>	
7.	Copy of topographic map identifying the treatment facility and all discharges.	<input type="checkbox"/>	
8.	Copy of Act 537 Sewerage Facilities Planning Approval letter (new or expanding facilities only).	<input type="checkbox"/>	
9.	Documentation that tanks have been pumped during permit term (if required by existing permit).	<input type="checkbox"/>	



# Small Flow Treatment Facilities – How???

## ❖ NPDES Permitting - Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- Act 14 Notifications
  - Provide
    - Act 14 Letter
    - Copy of NPDES Permit Application
    - Copy of Design Plans
  - Send via Certified Mail
    - Must be received by municipality/county at least 30 days before DEP may issue permit

### SAMPLE LETTER FROM APPLICANT TO MUNICIPALITY AND COUNTY TO SATISFY ACT 14 NOTICE REQUIREMENTS

This sample letter is intended to aid the applicant's understanding of the content of an Act 14 notice. **Evidence that the municipality(ies) and county(ies) have received your notification must be included as a part of your NPDES permit application.** Acceptable forms of this evidence include certified mail receipt or written acknowledgment of the notification from the municipality(ies) and county(ies). Use of this sample template is encouraged but not required.

Date \_\_\_\_\_

County/Municipality  
Street Address  
City, State Zip

Dear Mr./Ms. Contact Name

The purpose of this notice is to inform you of our intent to submit a National Pollutant Discharge Elimination System (NPDES) Permit application to the Pennsylvania Department of Environmental Protection (DEP) for the following:

Application Type: ☐ New ☐ Reissuance

Applicant Name: \_\_\_\_\_

Facility Name: \_\_\_\_\_

Facility Address: \_\_\_\_\_

Municipality: \_\_\_\_\_

County: \_\_\_\_\_

Description of  
Project or Activity: \_\_\_\_\_

This notice is required by Act 14, which amended the Commonwealth of Pennsylvania Administrative Code. Act 14 requires that each applicant for a DEP permit give written notice to the municipality(ies) and the county(ies) in which the permitted activity is located. The written notices must be received by the municipality(ies) and county(ies) at least 30 days before DEP may issue or deny the permit.

Should you have any questions with regard to the permit application please contact the office below:

DEP Regional Office Contact info.

Sincerely,

# Small Flow Treatment Facilities – How???

---

## ❖ NPDES Permitting - Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

### ■ DRAFT PERMIT ISSUED:

- PADEP shall post the DRAFT Permit on the *PA Bulletin* where it shall remain for public comment for 30 days.
- Applicant must post DRAFT Permit at the subject property within eye-sight of the roadway



# Small Flow Treatment Facilities – How???

## ❖ WQM Permitting – Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- Individual WQM Permit
  - General Information Form (GIF)
  - Act 14 Notifications
    - Municipal
    - County
  - Design Modules
  - Cultural Resources Notification
    - PHMC Response
  - DRBC Notification (if required)
  - Other??

CHECKLIST FOR WATER QUALITY MANAGEMENT PERMIT		
APPLICANT'S CHECKLIST		
APPLICANT NAME		
Check the following list to make sure that you have included all the required information. Place a checkmark in the column provided for all items completed and/or provided. Failure to provide all of the requested information will delay the processing of the application.		
ENCLOSE THIS CHECKLIST WITH YOUR APPLICATION FORM.		
	Check <input type="checkbox"/> if Included	DEP Use Only
1. General Information Form (GIF).	<input type="checkbox"/>	
2. Appropriate application fee, with check payable to the Commonwealth of PA	<input type="checkbox"/>	
3. Two (2) copies (original and 1 copy) of application, design module(s), and accompanying drawings and plans.	<input type="checkbox"/>	
a. Certification and proper signatures.	<input type="checkbox"/>	
b. Engineer's professional seal on each plan sheet.	<input type="checkbox"/>	
c. Design Engineer's Report with signature and seal on cover	<input type="checkbox"/>	
d. Properly notarized (original).	<input type="checkbox"/>	
e. Technical specifications with engineer's seal and signature on cover	<input type="checkbox"/>	
f. Additional copy for Delaware River Basin or Erie and Allegheny counties (if required).	<input type="checkbox"/>	
4. Supplemental Information:	<input type="checkbox"/>	
a. General Layout Diagram (unless design plans provide this information).	<input type="checkbox"/>	
b. Sizes, Capacities and Dimensions Diagram (unless design plans provide this information).	<input type="checkbox"/>	
5. Design Modules.	<input type="checkbox"/>	
6. Topographic map with appropriate details.	<input type="checkbox"/>	
7. Act 14 Notification.	<input type="checkbox"/>	
8. Act 537 Approval (if required).	<input type="checkbox"/>	
9. Cultural Resources Notification	<input type="checkbox"/>	
10. Acts 67, 68 and 127 Notification (IW and Manure Storage Facilities only).	<input type="checkbox"/>	
11. Proof of Public Notification (IW and Manure Storage Facilities only)	<input type="checkbox"/>	
12. DRBC Notification (if required).	<input type="checkbox"/>	
13. Other (specify):	<input type="checkbox"/>	

# Small Flow Treatment Facilities – How???

---

## ❖ WQM Permitting - Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

### ▪ DESIGN MODULES – 22 Options

- Treatment Plant Summary
- Sewer System
- Flow Equal & Grit Chambers
- Screening & Settling
- Trickling Filter & Aeration
- Chemical Treatment
- Rapid Sand Filters
- Other Filters & Disinfection
- Aerobic Digestion Tanks
- Anaerobic Digestion
- Sludge Filters & centrifuges
- Sludge Drying Beds
- Stream Encroachment & Crossing
- Spray Irrigation
- Industrial Wastewater Treatment Facility
- Small Flow Treatment Facility
- Sewer Extensions
- Manure Storage Facility



# Small Flow Treatment Facilities – How???

---

## ❖ WQM Permitting - Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

- DESIGN MODULES – Continued
  - Supplementary Geology and Groundwater Information
  - Impoundments
  - Sequencing Batch Reactor
  - Pump Stations

# Small Flow Treatment Facilities – How???

---

## ❖ WQM Permitting - Individual

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

### ■ DRAFT PERMIT ISSUED:

- PADEP shall post the DRAFT Permit on the *PA Bulletin* where it shall remain for public comment for 30 days.
- Applicant must post DRAFT Permit at the subject property within eye-sight of the roadway



PERMITS SECURED!!!!

What Next???



---

Notice of Installation – Installation – Post Construction Certification

## Installation Process...


---

- Notify Design Engineer & PADEP no less than 3 days prior to commencement of installation
- Install in accordance with the approved WQM Permit and Design Plans
- Design Engineer should remain in contact throughout installation and be immediately available in the event there are deviations from the plan.
- Upon completion...Design Engineer must, in lieu of inspections conducted by the PADEP, verify installation was completed in accordance with the plan within 10 days of completion.



# Installation Process...

- Design Engineer must complete and submit a WQM Post Construction Certification Form along with as-builts, photographs and an explanation should there be any deviations from the design plans. Form must be received by PADEP within 30 days of completion and prior to operation of the facility.

WATER QUALITY MANAGEMENT POST CONSTRUCTION CERTIFICATION	
<b>PERMITTEE IDENTIFIER</b>	
Permittee	
Municipality	
County	
WQM Permit No.	
Facility Type	
All of the above information should be taken directly from the Water Quality Management Permit.	
<b>CERTIFICATION</b>	
This certification must be completed and returned to the permits section of the DEP's regional office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, and if requested, as-built drawings, photographs (if available) and a discussion of any DEP-approved deviations from the design plans during construction.	
I, being a Registered Professional Engineer in Pennsylvania, do hereby certify to the best of my knowledge and belief, based upon personal observation and interviews, that the above facility approved under the Water Quality Management Permit has been constructed in accordance with the plans, specifications and modifications approved by DEP.	
Construction Completion Date (MM/DD/YYYY): _____	
	<b>Professional Engineer</b>
	Name _____ (Please Print or Type)
	Signature _____
	Date _____
	License Expiration Date _____
	Firm or Agency _____
	Telephone _____
	<b>Permittee or Authorized Representative</b>
	Name _____ (Please Print or Type)
	Signature _____
	Title _____
	Telephone _____

# Operation & Maintenance

- Requires Long-Term Operation and Maintenance!!!!





# Compliance Sampling and Reporting

---

- Discharge Monitoring Report Frequency

2. Discharge Monitoring Reports (DMRs), if attached to this permit, must be completed in accordance with DEP's published DMR Instructions (3800-FM-BCW0463). DMRs are based on calendar reporting periods unless Part C of this permit requires otherwise. DMR(s) must be received by the agency(ies) specified in paragraph 3 below in accordance with the following schedule:

- Monthly DMRs must be received within 28 days following the end of each calendar month.
- Quarterly DMRs must be received within 28 days following the end of each calendar quarter, i.e., January 28, April 28, July 28, and October 28.
- Semiannual DMRs must be received within 28 days following the end of each calendar semiannual period, i.e., January 28 and July 28.
- Annual DMRs must be received by January 28, unless Part C of this permit requires otherwise.

# Compliance Sampling and Reporting

- Discharge Monitoring Report

3800-FM-BCW0462 12/2016

**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
FACILITY \_\_\_\_\_  
LOCATION \_\_\_\_\_  
WATERSHED \_\_\_\_\_ FROM \_\_\_\_\_ TO \_\_\_\_\_

PERMIT NUMBER \_\_\_\_\_  
OUTFALL NUMBER \_\_\_\_\_

MONITORING PERIOD  
YEAR MO DAY TO YEAR MO DAY

Reporting Frequency: \_\_\_\_\_  
DMR Effective From: \_\_\_\_\_  
DMR Effective To: \_\_\_\_\_  
Permit Expires: \_\_\_\_\_  
Permit Application Due: \_\_\_\_\_  
☐ Check here if No Discharge  
NOTE: Read Instructions before completing this form

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	VALUE	UNITS	VALUE	VALUE	VALUE	UNITS			
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER \_\_\_\_\_  
TYPED OR PRINTED \_\_\_\_\_

I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. See 18 Pa. C.S. § 4504 (relating to unsworn falsification).

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT \_\_\_\_\_

TELEPHONE \_\_\_\_\_ DATE \_\_\_\_\_  
AREA CODE \_\_\_\_\_ NUMBER \_\_\_\_\_ YEAR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_

COMMENTS (Report all violations on the "Non-Compliance Reporting Form") \_\_\_\_\_



# Compliance Sampling and Reporting

---

- Annual Monitoring Report Frequency

2. The permittee shall submit a completed Annual Maintenance Form (AMR) to DEP and to the municipality where the SFTF is located by June 30 of each year to document maintenance activities that occurred between June 1 and May 31. An AMR template is attached to the General Permit for ongoing use.

# Compliance Sampling and Reporting

- Annual Monitoring Report

ANNUAL MAINTENANCE REPORT (AMR) SMALL FLOW TREATMENT FACILITIES												
Reporting Period: June 1, _____ to May 31, _____												
Name: _____	Permit No.: _____											
Address: _____	Municipality: _____											
Phone: _____	County: _____											
This SFTF Serves (a): <input type="checkbox"/> Single Home <input type="checkbox"/> Multiple Homes <input type="checkbox"/> Commercial Establishment <input type="checkbox"/> Other		SFTF Use Frequency: <input type="checkbox"/> Daily <input type="checkbox"/> Periodic (Describe: _____)										
No. of People Served by SFTF: _____												
Submission of a complete AMR by June 30 of each year is a requirement of the NPDES PAG-04 General Permit and most individual NPDES permits for small flow treatment facilities (SFTFs). AMRs must be mailed to the DEP office identified below and, if required by the permit, to the municipality in which the facility is located.												
MONTHLY MONITORING AND MAINTENANCE												
For SFTFs covered by the PAG-04 General Permit, record effluent monitoring data in the table below. For SFTFs covered by individual NPDES permits in which a Discharge Monitoring Report (DMR) has been issued with the permit, this table may remain blank and effluent monitoring results must be reported on a DMR that is submitted to the DEP office identified below.												
Effluent Monitoring Data												
Parameter	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
TRC <sup>(1)</sup>												
UV <sup>(2)</sup>												
BOD <sub>5</sub> <sup>(3)</sup>												
pH (S.U.) <sup>(3)</sup>												
TSS <sup>(3)</sup>												
Fecal Coliform (No./100 mL) <sup>(3)</sup>												
Flow (GPD) <sup>(3)</sup>												
(1) If the SFTF uses chlorine for disinfection, Total Residual Chlorine (TRC) must be monitored monthly, at a minimum. Collect an effluent sample after chlorination (and if applicable after dechlorination). If the TRC result is within the range of 0.3 mg/L to 0.5 mg/L, record the reading in the appropriate month column. If the TRC result is outside of this range, perform corrective action (e.g., add chlorine tablets or other measures) and resample on subsequent days until the result is within the range of 0.3 mg/L to 0.5 mg/L. Report the ultimate result for each month in the table.												
(2) If ultraviolet light (UV) is used for disinfection, place a checkmark in the field if the UV contact surface was cleaned during the month. If the permit does not require contact surface cleaning, write "N/A" in the fields.												
(3) For BOD <sub>5</sub> , pH, TSS, Fecal Coliform, and Flow, record results in this table if DEP requested that a sample be collected and analyzed by a laboratory, if samples or measurements were collected voluntarily, or otherwise if the permit requires such monitoring on a routine basis and does not include a DMR.												
Comments (attach additional pages if necessary):												

ANNUAL INSPECTION AND MAINTENANCE			
A service provider must perform the following inspections and provide a description of the observations made in the table provided below. Check the box where indicated if the inspection and maintenance was completed by a service provider. If there was more than one service provided during the period, or more than one service provider was used for inspections, include all inspection results with the AMR.			
Treatment Units			
Type	Inspected? <sup>(1)</sup>	Pumped? <sup>(2)</sup>	Comments <sup>(3)</sup>
Septic Tank(s) (Number: ____)	<input type="checkbox"/>	<input type="checkbox"/>	
Aerobic Tank	<input type="checkbox"/>	<input type="checkbox"/>	
Dosing Tank	<input type="checkbox"/>	<input type="checkbox"/>	
Sand Filters			
Type	Inspected? <sup>(4)</sup>	Raked? <sup>(5)</sup>	Comments <sup>(6)</sup>
Subsurface	<input type="checkbox"/>	N/A	
Recirculating	<input type="checkbox"/>	N/A	
Accessible	<input type="checkbox"/>	<input type="checkbox"/>	
Disinfection			
Type	Inspected?	Serviced? <sup>(7)</sup>	Comments <sup>(8)</sup>
Chlorinator	<input type="checkbox"/>	<input type="checkbox"/>	
Dechlorinator	<input type="checkbox"/>	<input type="checkbox"/>	
Ultraviolet (UV)	<input type="checkbox"/>	<input type="checkbox"/>	
(1) For septic tanks, the depth of septage and scum in the treatment units must be measured at least once a year. The inspection should include an evaluation of the condition of baffles, pumps, aerators, high level alarms and other mechanical equipment, as applicable. Following tank pumping, all interior surfaces should be inspected for leaks and cracks using a strong light. Note that the tanks will contain toxic gases and therefore only a properly equipped, trained and experienced person should attempt to enter or repair a tank if necessary. <b>The homeowner should not enter tanks.</b>			
(2) Aerobic tanks and dosing tanks should be pumped annually. Septic tanks should be pumped every three years or anytime the top of the sludge layer in any compartment of the unit is found to be less than 12 inches below the bottom of the outlet baffle, or if the bottom of the scum layer is within 3 inches of the outlet baffle (annual pumping may be substituted for measurement). <b>Attach to the AMR documentation from the company that the tank(s) have been pumped.</b>			
(3) Use the space provided and/or include a separate sheet to explain the components checked during the inspection.			
(4) If ponding is noted on the sand filter, note this in the comments and explain corrective action taken.			
(5) Place a checkmark in the box for "Serviced?" if chlorinator or dechlorinator tablets were added. For UV, check the box if the contact surface was cleaned and the UV bulb(s) were replaced.			
Other Items Inspected or Comments by Service Provider (attach additional pages if necessary):			

SERVICE PROVIDER CERTIFICATION	
I certify under penalty of law that I have personally performed the inspection of the SFTF named herein. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	
Name of Inspector _____	Signature _____
Telephone No. _____	Date _____
Company Name (if applicable) _____	
PERMITTEE CERTIFICATION	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).	
Responsible Official Name _____	Signature _____
Telephone No. _____	Date _____
Mail this completed Annual Maintenance Report to your local municipality (if required by the permit) and the appropriate DEP office or county health department:	
County Where SFTF is Located: _____	
DEP Office Where AMR Should Be Mailed:	
Bucks, Chester, Delaware, Montgomery, and Philadelphia	DEP SERO, Clean Water Program 2 E. Main Street Norristown, PA 19401-4915
Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming	DEP NERO, Clean Water Program 2 Public Square, Wilkes-Barre, PA 18701-1915
Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York	DEP SCRO, Clean Water Program 909 Emerton Ave., Harrisburg, PA 17110
Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union	DEP NCRO, Clean Water Program 208 West Third St., Suite 101, Williamsport, PA 17701
Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, and Westmoreland	DEP SWRO, Clean Water Program 400 Waterfront Dr., Pittsburgh, PA 15222
Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	DEP NWRO, Clean Water Program 230 Chestnut St., Meadville, PA 16335
Allegheny	ACHD, Frank B. Clark Health Center Building #5, 40th St. & Penn Avenue Pittsburgh, PA 15224-1347
Erie	ECOH, Environmental Health Services 606 West Second St., Erie, PA 16507



# Compliance Sampling and Reporting

---

- NPDES General Permit:
  - CBOD<sub>5</sub>                      average < 10 mg/L    instantaneous maximum < 20 mg/L
  - TSS                              average < 10 mg/L    instantaneous maximum < 20 mg/L
  - pH                                instantaneous maximum between 6.0 and 9.0
  - Fecal Coliform              average < 200 colonies/100 mL
  - TRC/UV                        0.3 – 0.5 mg/L tested monthly /    wipe UV sleeve monthly (transmittance levels)
- Typically sampled once annually and reported by June 30<sup>th</sup> of every year

# Compliance Sampling and Reporting

---

- NPDES Individual Permit (utilizing 'approved' advanced treatment methods):
  - CBOD<sub>5</sub>                      average < 10 mg/L    instantaneous maximum < 20 mg/L
  - TSS                              average < 10 mg/L    instantaneous maximum < 20 mg/L
  - pH                                instantaneous maximum between 6.0 and 9.0
  - Fecal Coliform              average < 200 colonies/100 mL
  - TRC/UV                        0.3 – 0.5 mg/L tested monthly /    wipe UV sleeve monthly (transmittance levels)
- Typically sampled once annually and reported by January 28<sup>th</sup> of every year unless otherwise specified.



# Compliance Sampling and Reporting

---

- NPDES Individual Permit (utilizing methods not listed as an approved technology):
  - CBOD<sub>5</sub>                      average < 10 mg/L    instantaneous maximum < 20 mg/L
  - TSS                              average < 10 mg/L    instantaneous maximum < 20 mg/L
  - pH                                instantaneous maximum between 6.0 and 9.0
  - Fecal Coliform              average < 200 colonies/100 mL
  - TRC/UV                        0.3 – 0.5 mg/L tested monthly /    wipe UV sleeve monthly (transmittance levels)
- Typically sampled semi-annually and reported by January 28<sup>th</sup> and July 28<sup>th</sup> of every year unless otherwise specified. Compliance conditions may be re-evaluated following 5 year period.

# Compliance Sampling and Reporting

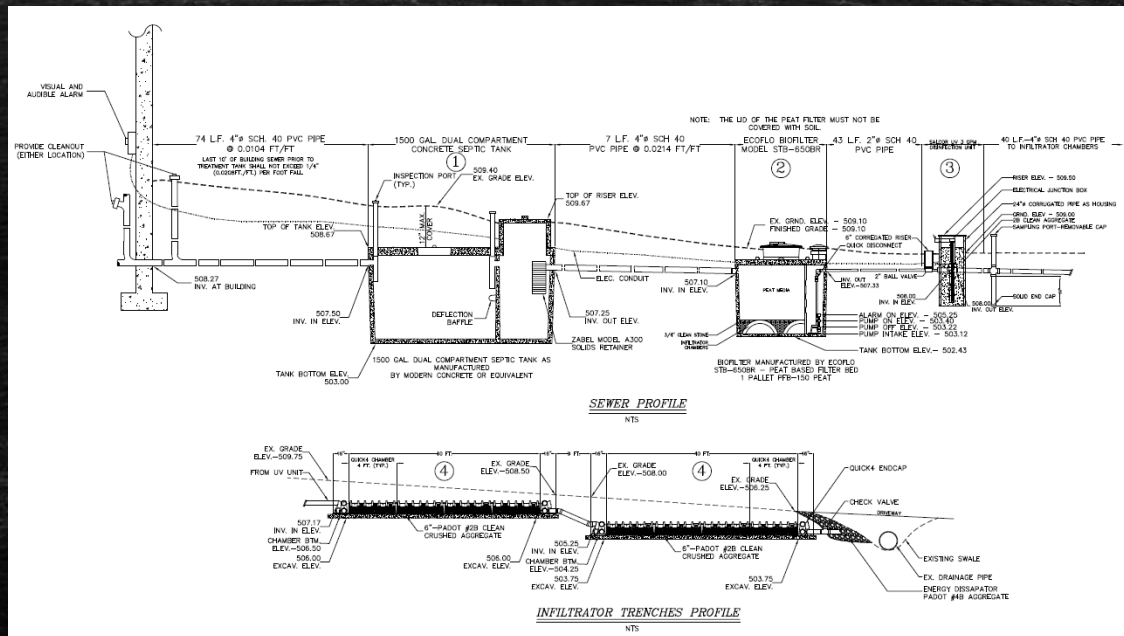
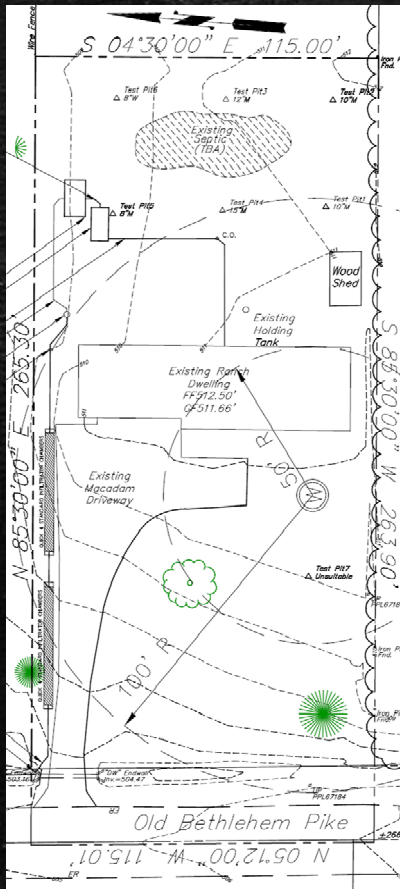
---

- NPDES Individual Permit – Commercial, Institutional, multi-residential:
  - CBOD<sub>5</sub>                      average < 10 mg/L    instantaneous maximum < 20 mg/L
  - TSS                              average < 10 mg/L    instantaneous maximum < 20 mg/L
  - pH                                instantaneous maximum between 6.0 and 9.0
  - Fecal Coliform              average < 200 colonies/100 mL
  - Dissolved Oxygen          Monitor & Report Instantaneous Maximum
  - NO<sub>2</sub>/NO<sub>3</sub>                      Monitor & Report Average
  - Total Nitrogen              average < 30.0 mg/L
  - Ammonia-N                  average < 5.0 mg/L
  - Total Phosphorus          Monitor & Report Average
  - TRC/UV                      0.3 – 0.5 mg/L tested monthly /    wipe UV sleeve monthly (transmittance levels)
- Frequency varies as does the sampling parameters



# Compliance Sampling and Reporting

- NPDES Individual Permit – Dry Swale Discharges
- Subject to Nitrogen Limits







< EcoFlo ECDn-500 with Salcor 3G UV



Norweco Singulair & HKBFR with Norweco AT1500 UV >



# QUESTIONS???

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Act537/Pages/Sewage-Facilities-Planning.aspx>

<https://www.dep.pa.gov/Business/Water/CleanWater/WastewaterMgmt/Pages/NPDESWQM.aspx>

ADAM B. BROWNING – PENN'S TRAIL ENVIRONMENTAL, LLC  
HATFIELD, PA - (215) 362-4610  
MOUNT AIRY, MD - (301) 829-5022  
abrowning@pennstrail.com

