

Application Type Renewal
Wastewater Type Sewage
Facility Type SFTF

**NPDES PERMIT FACT SHEET
INDIVIDUAL SFTF/SRSTP**

Application No. PA0086134
APS ID 868228
Authorization ID 1315524

Applicant, Facility and Project Information

Applicant Name	<u>David R Miller & David Schwien</u>	Facility Name	<u>Miller & Schwien Residences</u>
Applicant Address	<u>906 And 904 Huffs Church Road (Miller@906/Schwein@904) Alburtis, PA 18011-2129</u>	Facility Address	<u>906 And 904 Huffs Church Road (Miller@906/Schwein@904) Alburtis, PA 18011-2129</u>
Applicant Contact	<u>David R Miller (267) 371-0503 email:Popxmas@gmail.com</u>	Facility Contact	<u>David Miller</u>
Applicant Phone	<u>email:Popxmas@gmail.com</u>	Facility Phone	<u>(267) 371-0503</u>
Client ID	<u>318761</u>	Site ID	<u>237919</u>
SIC Code	<u>6514</u>	Municipality	<u>District Township</u>
SIC Description	<u>Fin, Ins & Real Est - Dwelling Operators, Except Apartments</u>	County	<u>Berks</u>
Date Application Received	<u>April 21, 2020</u>	WQM Required	<u>Already have WQM permit (0695402)</u>
Date Application Accepted	<u>June 11, 2020</u>	WQM App. No.	<u>-</u>
Project Description	<u>renewal of SFTF for two houses</u>		

Summary of Review

The previous NPDES permit was issued July 22, 2015 and expires July 31, 2020. The Small Flow Treatment Facility (SFTF) serves two single family residences. Sewage Planning Approval was issued October 12, 1993, for two residential lots with malfunctioning septic systems [M3-06929-023-3.s]. The original Water Quality Management (WQM) permit #0695402 was issued in February 1995 for a design flow of 800 gpd. Both the NPDES permit and the WQM permit were transferred to the current owners in July 2015.

The last DEP inspection occurred March 2, 2020.

The discharge is to UNT West Branch Perkiomen Creek, with a designated use of Cold Water Fish and Trout Natural Reproduction Waters classification. Downstream approximately 7 miles (after Huffs Church Road), West Branch Perkiomen Creek has a designated use of Exceptional Value. The receiving water is not within the Delaware River Basin Commission's "Special Protection Waters" area.

According to the 2015 Fact Sheet, the receiving water was attaining all uses at the time. Since then, however, this segment of the receiving water has been changed to "impaired": not attaining Recreational Use due to pathogens, per eMapPA. (Assessment ID 18801) and the 2018 Integrated Water Quality Report.

Limits:

The proposed limits for BOD5, TSS, pH, and Fecal Coliform are minimum requirements for sewage dischargers, per PA Code Title 25 Chapter 92a.47, with the exception that the average limits for Fecal Coliform in the regulations are expressed as Geometric Mean whereas the renewal permit does not. Most homeowners only conduct the minimum monitoring required,

Approve	Deny	Signatures	Date
X		<i>Bonnie Boylan</i> Bonnie J. Boylan / Environmental Engineering Specialist	July 16, 2020
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Environmental Program Manager	

which would mean a geometric mean calculation would not be used; it only is used when there are additional data points during a reporting period. The proposed Total Residual Chlorine (TRC) limit is in accordance with DEP's TRC model which yielded results indicating that technology-based limits of 0.5 mg/l as a monthly average and 1.6 mg/l as an Instantaneous Maximum would be protective of the receiving stream, the same as for the previous permit.

The WQM 7.0 model was not run, consistent with DEP's Standard Operating Procedure (SOP) for New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications. (Note: in 2000, the WQM 7.0 model was run which supported the imposition of secondary treatment limits in the permit per the 2000 Protection Report. The model was not re-run since.)

The permit limits and monitoring frequencies differ from DEP's SOP for New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications in that the permit limits for BOD5 and TSS are less stringent and the monitoring frequency recommended for SFTFs is less stringent. This is because the treatment system is "existing", pre-dates the DEP's SFTF Manual, and was not designed to meet tertiary limits. The SOP states:

application managers do not need to impose the CBOD5 [or BOD5] and TSS limitations below for existing SFTFs that were permitted prior to publication of the Small Flow Treatment Facilities Manual (362-0300-002) when such facilities are not capable of meeting tertiary treatment limits and have no documented compliance concerns. If an existing facility has been well-maintained and monitoring frequencies in the existing permit are less stringent than those below [monthly monitoring for SFTFs], the existing frequencies may be carried over to the renewal..."

The permittee requested in their application that their monitoring be reduced from twice per year to once per year. The request is denied given that the treatment system is old (approximately 24 years old), the permit only imposes secondary treatment limits (the regulatory minimum), the receiving stream was added to the 303(d) list of impaired waters in 2016 (based on an October 2015 assessment), and the SOP recommends monthly monitoring of all parameters at a minimum for new SFTFs as well as monthly monitoring at a minimum for TRC for Single Residence Sewage Treatment Plants (SRSTPs). While the SOP allows yearly monitoring at a minimum for BOD, TSS, and Fecal Coliform at SRSTPs, this facility is not an SRSTP which would discharge up to 400-500 gallons per day. This facility treats wastewater from two homes meaning 2 kitchens, 2 laundries, multiple bathrooms, with a design of 800 gallons per day.

Changes from the existing permit:

-BOD5 limits have been substituted for the previous permit's CBOD5 limits because a) other SFTFs and SRSTP permits now typically include BOD5 limits and b) DEP's standard Annual Maintenance Reporting (AMR) form includes BOD5 and should not be altered as it can lead to confusion. SFTFs are not required to submit monitoring results electronically. This regional office uses AMRs for reporting and compliance purposes for most SFTFs and SRSTPs rather than Discharge Monitoring Reports (DMRs). The BOD5 limits of 30 mg/l as an average and 60 mg/l as a maximum in sewage are the equivalent of CBOD5 of 25 mg/l as an average and 50 mg/l as a maximum. The regulations give both BOD5 and CBOD5 limits for sewage [Pa Code Chapter 92a.47]. This change does not constitute backsliding.

-Additional decimal places are shown in the limits table for BOD5 and TSS limits due to new DEP software.

-Ammonia limits and monitoring requirement have been dropped, consistent with DEP's Standard Operating Procedure (SOP) for New and Reissuance Small Flow Treatment Facility Individual NPDES Permit Applications. Sewage treatment systems that meet secondary standards can usually meet an Ammonia limit of 20 mg/l. The past monitoring results support this and the fact that there have not been violations for permit exceedances. The standard AMR form that SFTFs use for reporting does not include Ammonia.

-The pH monitoring frequency has been reduced from once per month to twice per year, the same frequency as allowed for the other parameters except for TRC.

-A Statistical Base Code of Average Monthly is not used when the minimum monitoring frequencies are less than monthly. DEP software requires "Annual Average" as the Statistical Base Code instead.

-The minimum monitoring frequency for Fecal Coliform was clarified: 'once per year' during the months of May through September and 'once per year' during the months of October through April, for a total of twice per calendar year.

Anti-degradation:

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving waterway is not classified as a High-Quality Water or Exceptional Value Water.

Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge.

Unresolved Violations:

No outstanding violations.

DRBC:

The discharge is to a receiving water within the DE River watershed. DRBC will thus be copied on the Fact Sheet and draft permit in accordance with State regulations and an interagency agreement between DEP and DRBC. The project, however, is below DRBC's reviewable threshold.

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.

Miller/Schwien Residences 8FTF

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
0.05	= Q stream (cfs)	0.6	= CV Daily
0.0009	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		= Decay Coefficient (K)
Source	Reference	AFC Calculations	Reference CFC Calculations
TRC	1.3.2.III	WLA_afc = 12.907	1.3.2.III WLA_afc = 12.576
PENTOXSD TRG	5.1a	LTA_MULT_afc = 0.373	5.1a LTA_MULT_afc = 0.681
PENTOXSD TRG	5.1b	LTA_afc = 4.809	5.1d LTA_afc = 7.311
Source	Effluent Limit Calculations		
PENTOXSD TRG	5.1f	AML_MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.600	BAT/BJ
		INST MAX LIMIT (mg/l) = 1.635	
WLA_afc	$\left(\frac{0.019}{k} e^{-k \cdot AFC_tc} \right) + \left[\frac{AFC_Yc \cdot Qs \cdot 0.019}{Qd \cdot e^{-k \cdot AFC_tc}} \right] \dots$ $\dots + Xd + \left(\frac{AFC_Yc \cdot Qs \cdot Xs}{Qd} \right) \cdot (1 - FOS/100)$		
LTAMULT_afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1) \cdot 0.5)$		
LTA_afc	$wla_afc \cdot LTAMULT_afc$		
WLA_afc	$\left(\frac{0.011}{k} e^{-k \cdot CFC_tc} \right) + \left[\frac{CFC_Yc \cdot Qs \cdot 0.011}{Qd \cdot e^{-k \cdot CFC_tc}} \right] \dots$ $\dots + Xd + \left(\frac{CFC_Yc \cdot Qs \cdot Xs}{Qd} \right) \cdot (1 - FOS/100)$		
LTAMULT_afc	$EXP((0.5 \cdot LN(cvd^2 / no_samples + 1)) - 2.326 \cdot LN(cvd^2 / no_samples + 1) \cdot 0.5)$		
LTA_afc	$wla_afc \cdot LTAMULT_afc$		
AML_MULT	$EXP(2.326 \cdot LN((cvd^2 / no_samples + 1) \cdot 0.5) - 0.5 \cdot LN(cvd^2 / no_samples + 1))$		
AVG MON LIMIT	$MIN(BAT_BJ, MIN(LTA_afc, LTA_afc) \cdot AML_MULT)$		
INST MAX LIMIT	$1.5 \cdot ((av_mon_limit / AML_MULT) / LTAMULT_afc)$		



PREVIOUS PERMIT LIMITS:

For Outfall 001, Latitude 40° 27' 6", Longitude 75° 38' 37", River Mile Index 14.7, Stream Code 1439
 Receiving Waters: West Branch Perkiomen Creek
 Type of Effluent: Domestic wastewater

The permittee is authorized to discharge during the period from August 1, 2015 through July 31, 2020.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) ⁽¹⁾		Concentrations (mg/L)				Minimum ⁽²⁾ Measurement Frequency	Required Sample Type
	Average Monthly		Minimum	Average Monthly		Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	2/year	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/month	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.6	1/month	Grab
CBOD ₅	XXX	XXX	XXX	25	XXX	50	2/year	Grab
Total Suspended Solids	XXX	XXX	XXX	30	XXX	60	2/year	Grab
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/year	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/year	Grab
Ammonia-Nitrogen	XXX	XXX	XXX	20	XXX	40	2/year	Grab

Permit No. PA0086134

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	<u>001</u>	Design Flow (MGD)	<u>.0008</u>
Latitude	<u>40° 27' 6"</u>	Longitude	<u>-75° 38' 37"</u>
Quad Name	<u></u>	Quad Code	<u></u>
Wastewater Description: <u>Sewage Effluent</u>			
Receiving Waters	<u>*West Branch Perkiomen Creek (CWF)</u>	Stream Code	<u>1439*</u>
NHD Com ID	<u>25981074*</u>	RMI	<u>14.7*</u>
Drainage Area	<u></u>	Yield (cfs/mi ²)	<u></u>
Q ₇₋₁₀ Flow (cfs)	<u>0.05</u>	Q ₇₋₁₀ Basis	<u>PA Stream Stats</u>
Elevation (ft)	<u></u>	Slope (ft/ft)	<u></u>
Watershed No.	<u>03E</u>	Chapter 93 Class.	<u>Cold Water Fishes</u>
Existing Use	<u>-</u>	Existing Use Qualifier	<u>-</u>
Exceptions to Use	<u>-</u>	Exceptions to Criteria	<u>-</u>
Assessment Status	<u>Not Attaining Recreational Uses per eMapPA and 2018 Integrated WQ Report: Category 5, Impaired for Recreational Uses, Assessment ID #18801. 303(d) Listed 2016 [in accordance with Section 303(d) of Clean Water Act]</u>		
Cause(s) of Impairment	<u>Pathogens</u>		
Source(s) of Impairment	<u>Not known</u>		
TMDL Status	<u>No TMDL currently</u>	Name	<u></u>
Background/Ambient Data		Data Source	
pH (SU)	<u></u>		<u></u>
Temperature (°F)	<u></u>		<u></u>
Hardness (mg/L)	<u></u>		<u></u>
Other:	<u></u>		<u></u>
Nearest Downstream Public Water Supply Intake	<u></u>		
PWS Waters	<u>Perkiomen Creek</u>	Flow at Intake (cfs)	<u></u>
PWS RMI	<u></u>	Distance from Outfall (mi)	<u>> 35 miles</u>

Changes Since Last Permit Issuance:

* Stream segment had been identified (in 2016 Integrated WQ Report) as W. Branch Perkiomen Creek. 2018 Integrated WQ Report now identifies stream segment as 'UNT of W. Branch Perkiomen Creek'. PA Historic Stream still uses stream code 1439 associated with 'W.Branch Perkiomen Creek' and the RMI of 14.7 in past permit pertains to W. Branch Perkiomen Creek, but NHD and Integrated WQ Report identify it as 'UNT of W. Branch Perkiomen Creek'. To avoid confusion, the NHD Com ID# can be used instead of the name or old Stream Code.

Other Comments: Not a 'Class A Wild Trout' receiving water. Designated as a 'Trout Natural Reproduction' water.

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 as needed, 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
	Annual Average	Average Weekly	Instant. Minimum	Annual Average	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	XXX	XXX	XXX	XXX	XXX	2/year	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/year	Grab
TRC	XXX	XXX	XXX	0.5 Average Monthly	XXX	1.6	1/month	Grab
BOD5	XXX	XXX	XXX	30.0	XXX	60.0	2/year	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/year	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000	XXX	10000	1/year	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	1000	1/year	Grab

Compliance Sampling Location: at discharge from facility