Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PAI130058**
Facility Type	**MS4**	APS ID	**952422**
Permit Type	**Individual**	Authorization ID	**1202105**

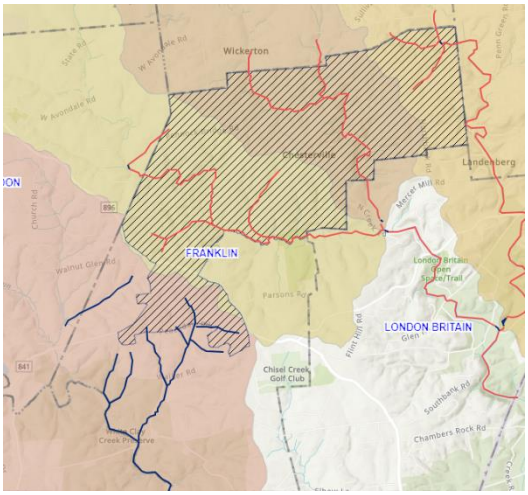
NPDES PERMIT FACT SHEET
MS4s

Applicant and Facility Information

Applicant Name	**Franklin Township Chester County**	Facility Name	**Franklin Township Chester County MS4 UA**
Applicant Address	PO Box 118 20 Municipal Lane	Facility Address	20 Municipal Lane PO Box 118
	Kemblesville, PA 19347-0118		Kemblesville, PA 19347
Applicant Contact	Melissa Ortega	Facility Contact	Melissa Ortega
Applicant Phone	(610) 255-5212	Facility Phone	(610) 255-5212
Client ID	86220	Site ID	617565
SIC Code	9199	Municipality	Franklin Township
SIC Description	Public Admin. - Genral Government, Nec	County	Chester
Date Application Received	September 18, 2017		
Date Application Accepted			
Purpose of Application	Formerly PAG130058.		

Internal Review and Recommendations

In the interest of issuing this permit in a timely manner, DEP has made the decision to issue this permit with a compliance schedule.



Public Participation

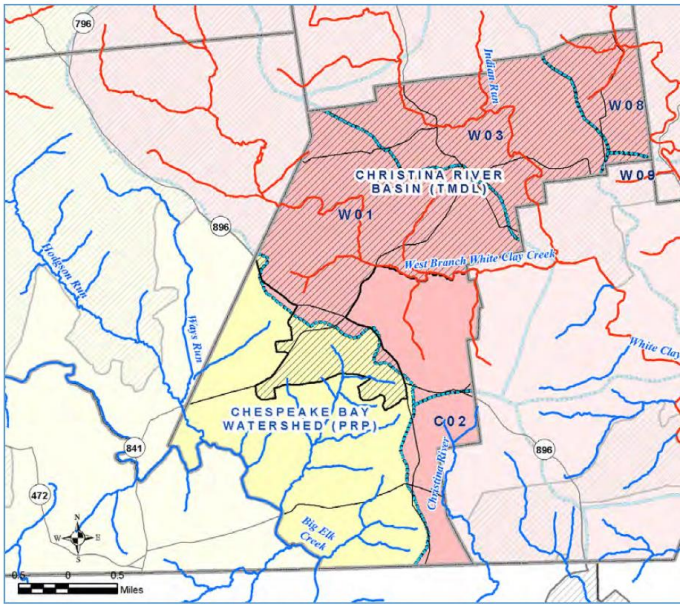
DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested 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.

Approve	Deny	Signatures	Date
		Carrie Konnovitch Carrie M Konnovitch, P.E. / Environmental Engineer Trainee	11/7/2024
		Elizabeth A Mahoney / Environmental Group Manager	

Internal Review and Recommendations

FRANKLIN TWP	PAG130058		Big Elk Creek	Chesapeake Bay Nutrients\Sediment	Appendix D-Siltation/Nutrients
			East Branch White Clay Creek, Middle Branch White Clay Creek, Upper White Clay Creek, West Branch White Clay Creek	Christina River Basin Nutrients, Christina River Basin Sediment, East Branch White Clay Creek, Indian Run, Middle Branch White Clay Creek, West Branch White Clay Creek, White Clay Creek	Appendix B-Pathogens, TMDL Plan-Nutrients, Organic Enrichment/Low D.O., Siltation, Suspended Solids

				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
FRANKLIN TWP	PAG130058	Yes	TMDL Plan, SP	East Branch White Clay Creek	Appendix B-Pathogens (5)	
				Indian Run	Appendix B-Pathogens (5)	
				White Clay Creek	Appendix B-Pathogens (5)	
				West Branch White Clay Creek	Appendix B-Pathogens (5)	
				Christina River Basin Sediment	TMDL Plan-Siltation, Suspended Solids (4a)	
				Christina River Basin Nutrients	TMDL Plan-Nutrients, Organic Enrichment/Low D.O. (4a)	
				Chesapeake Bay Nutrients/Sediment	Appendix D-Nutrients, Siltation (4a)	
				Middle Branch White Clay Creek	Appendix B-Pathogens (5)	
HONEY BROOK BORO		Yes	TMDL Plan, SP			



White Clay Creek Watershed	Sediment (tons/year)				Total Nitrogen (kg/day)				Total Phosphorus (kg/day)			
	Baseline MS4 Load[1d.]	MS4 Load Allocation[1d.]	MS4 Load Reduction[1e.]	% Reduction[1d.]	Baseline MS4 Load[2l.]	MS4 Allocation[2c.]	MS4 Load Reduction[2m.]	% Reduction[2m.]	Baseline MS4 Load[2l.]	MS4 Allocation[2f.]	MS4 Load Reduction[2m.]	% Reduction[2m.]
AVONDALE BORO	463.65	140.02	323.63	69.80%	9.16	4.58	4.58	50.00%	0.322	0.135	0.187	58.07%
FRANKLIN TWP	4220.43	2,305.87	1914.56	45.36%	122.01	61.01	61	50.00%	15.219	5.557	9.662	63.49%

PRP

Table 5 – Franklin Township PRP Existing Load Calculation Summary

Chesapeake Bay/Big Elk Creek							
Land Surface	**Area (Acres)**	**TN Rate**	**TN Load**	**TP Rate**	**TP Load**	**TSS Rate**	**TSS Load**
Pervious	235.56	14.09	3,319.05	0.36	84.80	185.12	43,606.96
Impervious	40.64	21.15	859.61	1.46	59.34	1,504.78	61,159.43
Totals	276.20		4,178.66		144.14		104,766.39
			3%		5%		10%
Required Reduction			**125.36**		**7.21**		**10,476.64**
Load units = lbs./yr.							

Table 6 – Franklin Township Existing BMPs

BMP ID	NPDES Permit#	Inspection	BMP Function	OwnedBy	Maintained	Type	Condition	Watershed	Verified	Latitude	Longitude
BMP004	N/A	N/A	Yes	Private	Private	Detention Basin	Satisfactory	CB	Yes	39.75420361	-75.82938071
BMP005	N/A	N/A	Yes	Private	Private	Detention Basin	Satisfactory	CB	Yes	39.75518585	-75.82995443
BMP020	N/A	N/A	Yes	Private	Private	Detention Basin	Satisfactory	CB	Yes	39.75357934	-75.83260751

Table 7 – Franklin Township PRP Existing Load Calculation with Existing BMPs

Chesapeake Bay/Big Elk Creek with Existing BMPs							
Land Surface	**Area (Acres)**	**TN Rate**	**TN Load**	**TP Rate**	**TP Load**	**TSS Rate**	**TSS Load**
Pervious	17.31	14.09	243.90	0.36	6.23	185.12	3,204.43
Impervious	4.00	21.15	84.58	1.46	5.84	1,504.78	6,017.92
Totals	21.31		328.48		12.07		9,222.35
Detention Basin Effectiveness		5%	16.42	10%	1.21	10%	922.23
Existing Load w/ BMP Load Reduction			4,162.23		142.93		103,844.15
Required Reduction			**124.87**		**7.15**		**10,384.42**
Load units = lbs./yr.							

The required sediment load reduction after credit for existing BMPs is 10% of **103,844 lbs/yr** or **10,384 lbs/yr.**

Proposed PRP BMPs

A contract has been executed by FT Board of Supervisors and PennDOT to fund a stream restoration project on a tributary to Big Elk Creek in East Nottingham Township.

TMDL

Table 8 - 1995 Land Use Baseline TSS Load Calculations.

Land Use	Area	Sediment Loading Rate	Sediment Load	Nitrogen Loading Rate	Nitrogen Load	Phosphorous Loading Rate	Phosphorous Load
	(acres)	(lbs/acre/yr)	(lbs/yr)	(lbs/acre/yr)	(lbs/yr)	(lbs/acre/yr)	(lbs/yr)
Hay/Pasture	0.85	181.72	154.45	0.94	0.80	0.26	0.22
Cropland	720.11	1,499.30	1,079,663.46	5.96	4,291.87	1.57	1,130.58
Forest	251.68	111.43	28,044.56	0.15	37.75	0.04	10.07
Wetland	1.83	97.88	179.06	0.48	0.88	0.04	0.07
Open Land	84.31	230.61	19,441.99	1.13	95.27	0.12	10.12
HD_Mixed	0.34	2,055.61	690.59	6.83	2.29	0.95	0.32
LD_Residential	404.55	616.19	249,280.24	1.64	663.46	0.25	101.14
MD Residential	8.15	1,464.34	11,939.12	6.83	55.69	0.89	7.26
Total	**1,471.82**		**1,389,393.47**		**5,148.01**		**1,259.77**

Table 9 - 2012 Land Use TSS Load Calculations.

Land Use	Area	Sediment Loading Rate	Sediment Load	Nitrogen Loading Rate	Nitrogen Load	Phosphorous Loading Rate	Phosphorous Load
	(acres)	(lbs/acre/yr)	(lbs/yr)	(lbs/acre/yr)	(lbs/yr)	(lbs/acre/yr)	(lbs/yr)
Cropland	357.36	1,491.81	533,107.33	5.84	2,086.96	1.50	536.03
Forest	192.96	163.18	31,486.61	0.17	32.80	0.05	9.65
Wetland	3.00	148.61	445.96	0.49	1.46	0.05	0.15
Disturbed	118.20	225.70	26,676.83	0.27	31.91	0.12	14.18
HD_Mixed	4.32	1,906.23	8,244.06	7.56	32.70	1.01	4.37
LD_Residential	795.98	800.45	637,144.31	1.57	1,249.69	0.24	191.04
Total	**1,471.82**		**1,237,105.10**		**3,435.52**		**755.42**

Table 10 – Revised TSS Load Reduction Calculation.

Required Reduction	Revised (1995) Baseline Load	Reduction Based on the Revised (1995) Baseline Load	2012 Load w/ Land Use Reduction	Reduction Due to Land Use Changes
a	b	(a x b) = c	d	(b - d) = e
Percent	lbs./yr.	lbs./yrs.	lbs./yr.	lbs./yr.
45.36%	1,389,393.47	630,228.88	1,237,105.10	152,288.36

Table 12 – Existing BMPs Load Reduction Calculation.

	Area	Sediment Loading Rate	Sediment Load	BMP Effectiveness	BMP Load Reduction
	(acres)	(lbs/acre/yr)	(lbs/yr)	%	(lbs/yr)
Cropland	21.41	1,491.81	31,944.52	10%	3,194.45
Forest	5.25	163.18	857.30	10%	85.73
Wetland	0.42	148.61	61.77	10%	6.18
Disturbed	76.59	225.70	17,286.18	10%	1,728.62
LD_Residential	164.14	800.45	131,387.76	10%	13,138.78
Total	**267.81**		**181,537.54**		**18,153.75**

Table 13 – Revised Required Load Reduction Calculation

Required Reduction	Revised (1995) Baseline Load	Reduction Based on the Revised (1995) Baseline Load	2012 Load w/ Land Use Reduction	Reduction Due to Land Use Changes	Existing Load w/ Land Use and Existing BMP Reduction	Reduction Due to Existing BMPs	Remaining TMDL Load Reduction Required
	b	(a x b) = c	d	(b - d) = e	f	(d - f) = g	(c - e - g)
Percent	lbs./yr.	lbs./yrs.	lbs./yr.	lbs./yr.	lbs./yr.	lbs./yr.	lbs./yr.
45.36%	1,389,393.47	630,228.88	1,237,105.10	152,288.36	1,218,951.35	18,153.75	459,786.76

Step 12 – Summary of Calculations.

A. Revised 1995 Baseline Load = **1,389,393 lbs/yr** sediment
B. TMDL Load Reduction Required = **630,229 lbs/yr**
C. Existing Load = **1,218,951 lbs/yr**
D. Remaining TMDL Load Reduction Required = **459,787 lbs/yr**
E. TMDL Reduction Required in this 5-year period = **459,787 lbs/yr** or, if that cannot be achieved, then 10% of the existing load (see C above) = **121,895 lbs/yr** of sediment.

To achieve 100% of the remaining TMDL reduction **459,787 lbs/yr** of sediment would need to be removed by proposed BMPs constructed over the five-year permit cycle. If that is not possible, then 10% of the Existing Load (**1,218,951 lbs/yr**) or **121,895 lbs/yr** of sediment would need to be removed by proposed BMPs constructed over the five-year permit cycle. According to values found in Table 7 above, the Existing Total Nitrogen (TN) Load is **3,436 lbs/yr** and the Existing Total Phosphorous (TP) Load is **755 lbs/yr**. The required reduction for TN is **103 lbs/yr** and **38 lbs/yr** for TP over the 5-year permit cycle.

G. **Analysis of TMDL Objectives**.

1. Long-Term Reduction – According to the section above (D.) which presents details regarding existing load calculations (baseline load), land conversion reduction (1995 – 2012 land use) and existing BMP credit, the long-term reduction requirement equals **459,787 lbs/yr**

2. Short-Term Reduction – FT may decide to reduce existing load by 10% (sediment) using the presumptive approach to assume that sediment reduction will satisfy TP reduction requirements. The required reduction, with credit for all existing BMPs, for this initial five (5) year permit cycle is ten percent (10%) of the required TMDL load reduction 1,218,951 or **121,895 lbs/yr.**

Table 15 – Additional Proposed BMP Estimated Load Reduction

BMP ID	Luse Description	ACRES	Load Rate	Load	Effectiveness*	Reduction
007	Disturbed	2.53	225.70	572		
	Low-Density Residential	2.01	800.45	1,609		
	Total TSS Load			2,181	50%	1,091
010	Low-Density Residential	3.18	800.45	2,542	50%	1,271
013	Disturbed	1.36	225.70	307		
	Forest	0.03	163.18	5		
	Low-Density Residential	6.64	800.45	5,314		
	Total TSS Load			5,627	50%	2,814
014	Disturbed	1.18	225.70	267		
	Low-Density Residential	1.27	800.45	1,014		
	Total TSS Load			1,281	50%	640
015	Disturbed	1.56	225.70	353		
	Forest	3.95	163.18	644		
	Low-Density Residential	8.61	800.45	6,893		
	Water	0.42	148.61	62		
	Total TSS Load			7,952	50%	3,976
016	Disturbed	5.45	225.70	1,229		
	Forest	0.00	163.18	0		
	Low-Density Residential	12.03	800.45	9,628		
	Total TSS Load			10,857	50%	5,428
019	Disturbed	0.45	225.70	102		
	Low-Density Residential	3.04	800.45	2,431		
	Total TSS Load			2,534	50%	1,267
021	Cropland	2.68	1,491.81	4,000		
	Low-Density Residential	8.19	800.45	6,559		
	Total TSS Load			10,560	50%	5,280
022	Cropland	4.30	1,491.81	6,415		
	Low-Density Residential	17.50	800.45	14,008		
	Total TSS Load			20,422	50%	10,211
023	Cropland	8.98	1,491.81	13,397		
	Low-Density Residential	2.47	800.45	1,976		
	Total TSS Load			15,373	50%	7,687
024		2.05	1,491.81	3,056		
	Disturbed	5.91	225.70	1,333		
	Low-Density Residential	5.18	800.45	4,149		
	Total TSS Load			8,539	50%	4,269
025	Disturbed	0.87	225.70	196		
	Low-Density Residential	13.07	800.45	10,462		
	Total TSS Load			10,659	50%	5,329
026	Disturbed	3.27	225.70	738	50%	369
027	Disturbed	4.39	225.70	992	50%	496
035	Cropland	0.47	1,491.81	708		
	Disturbed	7.21	225.70	1,626		
	Low-Density Residential	1.28	800.45	1,027		
	Total TSS Load			5,091	50%	2,546
037	Forest	0.37	163.18	60		
	Low-Density Residential	10.89	800.45	8,715		
	Total TSS Load			8,775	50%	4,388
038	Low-Density Residential	5.65	800.45	4,525	50%	2,263
039	Disturbed	2.22	225.70	501		
	Forest	0.88	163.18	144		
	Low-Density Residential	6.07	800.45	4,857		
	Total TSS Load			5,502	50%	2,751
					Total Load Reduction	62,075

* Removal effectiveness increased from 10% for "Detention Basin" to 60% for "Extended Detention Basin" therefore, the reduction credit equals 50%.