Pennsylvania Department of Environmental Protection

Southeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0031771**
Facility Type	**Municipal**	APS ID	**1140750**
Major / Minor	**Minor**	Authorization ID	**1532837**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Westtown Township Chester County**	Facility Name	**Westtown Township Sewer STP & Sewer System**
Applicant Address	PO Box 79	Facility Address	950 Westtown Road
	Westtown, PA 19395-0079		West Chester, PA 19382-7648
Applicant Contact	Mark Gross	Facility Contact	Mark Gross
Applicant Phone	(610) 692-1930	Facility Phone	(610) 692-1930
Client ID	42451	Site ID	451677
Ch 94 Load Status	Not Overloaded	Municipality	Westtown Township
Connection Status	No Limitations	County	Chester
Date Application Received	July 3, 2025	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Permit renewal

Summary of Review

A renewal request is received for a NPDES Permit to discharge treated sewage to East Branch Chester Creek.

The STP consists of a bar screen, grit chambers, equalization tank, aeration tanks, clarifiers, filter unit, UV disinfection and sludge digester. A phosphorus reduction system was added in 2013 in accordance with WQM permit No. 1512416.

Magnesium Hydroxide is used for pH control and Aluminum Chloride Hydroxide Sulfate is used for Phosphorus control at the facility.

The existing limits from the current permit being carried over to this renewal. WQM 7.0 was ran to verify and there isn't any significant concern from compliance end.

Influent monitoring for BOD5, CBOD5 and TSS are continued in the permit based on Chapter 94 requirement and to check compliance with the 85% removal requirement for secondary treatment.

Sludge use and disposal description and location(s): hauled away to DELCORA for disposal
100 East Fifth Street, Chester, PA 19013.
Facility is not accepting any hauled-in wastes.

Approve	Deny	Signatures	Date
X		*Charley Yang* Charley Yang / Environmental Engineering Specialist	December 24, 2025
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	12/24/2025

Summary of Review

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.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.495
Latitude	39Âº 57' 1.56"	Longitude	-75Âº 32' 49.29"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	East Branch Chester Creek (TSF, MF)	Stream Code	00604
NHD Com ID	25621280	RMI	11.668
Drainage Area	8.64	Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)	1.82	Q_{7-10} Basis	StreamStats
Elevation (ft)	263.88	Slope (ft/ft)	
Watershed No.	3-G	Chapter 93 Class.	TSF, MF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	CAUSE UNKNOWN, FLOW REGIME MODIFICATION, HABITAT ALTERATIONS, SILTATION		
Source(s) of Impairment	HABITAT MODIFICATION - OTHER THAN HYDROMODIFICATION, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS, URBAN RUNOFF/STORM SEWERS		
TMDL Status		Name	

Changes Since Last Permit Issuance: Minor updates on receiving water information; RMI, DA, Q7-10, Elevation.

Other Comments:

Treatment Facility Summary

Treatment Facility Name: Westtown-Chester Creek STP

WQM Permit No.	Issuance Date
1512416	12/24/2012
1500407	02/01/2001

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	Extended Aeration	Ultraviolet	0.495

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.495	1030	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: N/A

Compliance History	
Summary of DMRs:	No issues
Summary of Inspections:	No violations were noted. The site seems to be in good condition per the inspection on 12/31/2025.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from November 1, 2024 to October 31, 2025)

Parameter	OCT-25	SEP-25	AUG-25	JUL-25	JUN-25	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24
Flow (MGD) Average Monthly	0.216	0.241	0.21	0.241	0.246	0.264	0.256	0.229	0.23	0.225	0.227	0.216
Flow (MGD) Daily Maximum	0.281	0.371	0.301	0.371	0.321	0.393	0.389	0.328	0.307	0.352	0.331	0.296
pH (S.U.) Instantaneous Minimum	6.2	6.3	6.4	6.3	6.4	6.4	6.4	6.4	6.2	6.4	6.6	6.4
pH (S.U.) Instantaneous Maximum	7.4	7.4	7.5	7.4	7.4	7.4	7.4	7.5	7.8	7.5	7.8	7.3
DO (mg/L) Instantaneous Minimum	7.6	7.7	7.5	7.7	8.4	9.1	9.7	10.2	11.2	10.9	10.4	9.2
CBOD5 (lbs/day) Average Monthly	< 4	< 5	< 3	< 5	< 4	< 5	< 4	< 4	< 4	< 4	< 4	< 4
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	401	< 412	255	317	353	464	404	327	413	380	239	255
CBOD5 (lbs/day) Weekly Average	< 5	6	< 4	6	< 4	< 6	< 5	< 4	< 5	< 6	< 4	< 4
CBOD5 (mg/L) Average Monthly	< 2	< 3	< 2	< 3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	189	< 214	147	160	173	202	191	176	189	203	119.7	137
CBOD5 (mg/L) Weekly Average	< 2	3	< 2	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	276	203	275	312	393	438	352	267	360	325	322	136
BOD5 (mg/L) Raw Sewage Influent Average Monthly	147	117	153	134	187	215	145	141	189	172	169	73

TSS (lbs/day) Average Monthly	29	41	21	41	20	20	21	< 3	17	27	34	39
TSS (lbs/day) Raw Sewage Influent Average Monthly	207	259	65	78	136	96	84	180	101	149	79	93
TSS (lbs/day) Weekly Average	35	68	25	68	25	30	28	8	31	75	35	46
TSS (mg/L) Average Monthly	14	20	12	20	10	8	10	< 2	8	15	16	21
TSS (mg/L) Raw Sewage Influent Average Monthly	113	131	37	37	66	41	39	98	47	80	40	51
TSS (mg/L) Weekly Average	16	34	15	34	12	11	14	4	14	27	19	24
Total Dissolved Solids (lbs/day) Daily Maximum		1280			1292			1831			1477	
Total Dissolved Solids (mg/L) Daily Maximum		642			635			715			757	
Fecal Coliform (No./100 ml) Geometric Mean	< 9	< 2	< 2	< 2	< 2	< 3	< 2	< 2	< 2	< 2	< 2	< 2
Fecal Coliform (No./100 ml) Instantaneous Maximum	122	3	< 2	3	< 2	< 5	< 2	< 2	< 2	< 2	< 2	< 2
UV Intensity (µw/cm²) Daily Minimum	6.8	8	8.2	8	6.8	8	6.6	6.3	6.2	5.3	5.9	7
Total Nitrogen (lbs/day) Average Monthly	< 85	< 66	< 58	< 66	< 63	< 79	< 73	< 70	< 75	< 67	< 63	< 55
Total Nitrogen (mg/L) Average Monthly	< 41.4	< 31.9	< 33.4	< 31.9	< 30.9	< 33.9	< 33.5	< 37.2	< 34.7	< 35.9	< 32.1	< 29.7
Ammonia (lbs/day) Average Monthly	< 0.05	< 0.07	< 0.04	< 0.07	< 0.04	< 0.09	< 0.08	0.2	< 0.04	< 0.05	< 0.06	< 0.1
Ammonia (mg/L) Average Monthly	< 0.02	< 0.03	< 0.02	< 0.03	< 0.02	< 0.04	< 0.04	0.1	< 0.02	< 0.03	< 0.03	< 0.1
Total Phosphorus (lbs/day) Average Monthly	1.8	1.4	0.9	1.4	1.2	1.2	1.4	0.9	1.1	0.9	1.0	2.2

Total Phosphorus (mg/L) Average Monthly	0.9	0.7	0.5	0.7	0.6	0.5	0.7	1.7	0.5	0.5	0.5	1.2
Total Copper (lbs/day) Average Monthly	0.03	0.04	< 0.02	0.04	< 0.02	0.02	0.04	0.03	0.02	< 0.02	< 0.02	0.03
Total Copper (lbs/day) Daily Maximum	0.03	0.04	< 0.02	0.04	< 0.02	0.02	0.04	0.03	0.02	< 0.02	< 0.02	0.03
Total Copper (mg/L) Average Monthly	0.020	0.020	< 0.010	0.020	< 0.010	0.010	0.010	0.020	0.010	< 0.010	< 0.010	0.020
Total Copper (mg/L) Daily Maximum	0.015	0.015	< 0.010	0.015	< 0.010	0.012	0.014	0.015	0.010	< 0.010	< 0.010	0.016

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .495
Latitude 39º 57' 1.61" **Longitude** -75º 32' 49.26"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

A “Reasonable Potential Analysis” (Attachment) determined the following parameters were candidates for limitations:

The following limitations were determined through water quality modeling (output files attached):

Parameter	Limit (mg/l)	SBC	Model
CBOD5 (5/1 to 10/31)	15	Average Monthly	WQM 7.0 model
CBOD5 (11/1 to 4/30)	25	Average Monthly	Seasonal limit
TSS	30	Average Monthly	DRBC
NH3-N (5/1 to 10/31)	2.5	Average Monthly	WQM 7.0 model
NH3-N (11/1 to 4/30)	7.5	Average Monthly	Seasonal limit
Total Phosphorus (5/1 to 10/31)	1.0	Average Monthly	BPJ
Total Phosphorus (11/1 to 4/30)	2.0	Average Monthly	Seasonal limit
Dissolved Oxygen	5.0	Inst. Min.	WQM 7.0 model
Fecal Coliform (CFU/100ml)	200/1000	Ave.Mon./Inst.Max.	DRBC&Chap. 93
pH	6.0 to 9.0 STD units all the times	Chap. 93	
Total Nitrogen	Report	Average Monthly	Data Collection
TDS*	Report	Average Monthly	DRBC
UV intensity	Report	Minimum	Data collection
Total Copper **	0.028	Average Monthly	Existing

*Based on the consistently low TDS concentration , monitoring is recommended to continue.
**Total Copper limit is based on the previous modeling which is protective of the water quality.

Comments: All limits are being carried over from the existing permit. WQM 7.0 was run to verify.

Best Professional Judgment (BPJ) Limitations

Comments: N/A

Anti-Backsliding

N/A

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" (386-0400-001), 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
CBOD5 Nov 1 - Apr 30	103	165	XXX	25	40	50	1/week	24-Hr Composite
CBOD5 May 1 - Oct 31	62	95	XXX	15	23	30	1/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
TSS	124	186	XXX	30	45	60	1/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Dissolved Solids	XXX	Report Daily Max	XXX	XXX	Report Daily Max	XXX	1/quarter	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	1/week	Grab

Outfall 001, Continued (from 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	Weekly Average	Daily Minimum	Average Monthly	Weekly Average	Instant. Maximum		
UV Intensity (µw/cm²)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Ammonia Nov 1 - Apr 30	31	XXX	XXX	7.5	XXX	15	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	10	XXX	XXX	2.5	XXX	5	1/week	24-Hr Composite
Total Phosphorus Nov 1 - Apr 30	8.2	XXX	XXX	2.0	XXX	4	1/week	24-Hr Composite
Total Phosphorus May 1 - Oct 31	4.1	XXX	XXX	1.0	XXX	2	1/week	24-Hr Composite
Total Copper	0.12	0.23 Daily Max	XXX	0.028	0.056 Daily Max	0.07	1/month	24-Hr Composite

Compliance Sampling Location:

Other Comments:

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☐	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP:
☐	Other:

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03G	604	EAST BRANCH CHESTER CREEK	1.680	263.88	8.64	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Westtown Chest	PA0031771	0.0000	0.0000	0.4950	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	15.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	2.50	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
03G	604	EAST BRANCH CHESTER CREEK	**1.490**	262.04	9.99	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
down stream		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
03G	604	EAST BRANCH CHESTER CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.680	Westtown Chest	13.18	5	13.18	5	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.680	Westtown Chest	1.66	2.5	1.66	2.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.68	Westtown Chest	15	15	2.5	2.5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
03G	604	EAST BRANCH CHESTER CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.680	0.495	22.349	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
18.388	0.560	32.806	0.158
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
8.11	1.293	1.17	0.839
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.719	2.914	Tsivoglou	5
Reach Travel Time (days)			
0.073			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.007	8.02	1.17	6.60
0.015	7.94	1.16	6.49
0.022	7.85	1.15	6.38
0.029	7.77	1.15	6.28
0.037	7.69	1.14	6.18
0.044	7.61	1.13	6.08
0.051	7.53	1.13	5.99
0.059	7.45	1.12	5.90
0.066	7.37	1.11	5.81
0.073	7.29	1.10	5.73

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
03G	604	EAST BRANCH CHESTER CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.680	Westtown Chest	PA0031771	0.000	CBOD5	15		
				NH3-N	2.5	5	
				Dissolved Oxygen			5

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
03G	604	EAST BRANCH CHESTER CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.680	0.86	0.00	0.86	.7658	0.00183	.56	18.39	32.81	0.16	0.073	22.35	7.00
Q1-10 Flow												
1.680	0.55	0.00	0.55	.7658	0.00183	NA	NA	NA	0.14	0.083	22.90	7.00
Q30-10 Flow												
1.680	1.18	0.00	1.18	.7658	0.00183	NA	NA	NA	0.17	0.067	21.97	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		