pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southeast Regional Office**
**CLEAN WATER PROGRAM**

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0055212** |
| Facility Type | **Municipal** | APS ID | **1078037** |
| Major / Minor | **Major** | Authorization ID | **1421715** |

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **Concord Township** | Facility Name | **Concord Township Central STP** |
| Applicant Address | 43 S. Thornton Road | Facility Address | 664 Concord Road |
| | Glen Mills, PA 19342-1325 | | Glen Mills, PA 19342 |
| Applicant Contact | Amanda Serock | Facility Contact | Dan Moyer |
| Applicant Phone | (610) 459-8911 | Facility Phone | (610) 459-8911 |
| Client ID | 71374 | Site ID | 451601 |
| Ch 94 Load Status | Not Overloaded | Municipality | Concord Township |
| Connection Status | No Limitations | County | Delaware |
| Date Application Received | December 22, 2022 | EPA Waived? | No |
| Date Application Accepted | | If No, Reason | Major Facility |

Purpose of Application: Permit Renewal

## Summary of Review

The applicant requests renewal of an NPDES permit to discharge treated sewage from Concord Township Central STP.

At the plant, flow enters the main lift station and is pumped to a flow equalization tank. Flow is then pumped on a continuous basis to two biological phosphorus removal tanks followed by two extended aeration treatment units. Flow then enters to two final clarifiers. Effluent is disinfected using UV light and is aerated to increase dissolved oxygen. Solids are wasted to aerobic digesters and thickened before hauled off site.

Alum, sodium hydroxide and polymer are used in the thickened sludge process.

Concord Township, Thornbury Township, Chester Heights Borough, and Chadds Ford Township are contributing flow to the plant.

No increases in organic or hydraulic capacities are proposed at this time. No upgrades to the treatment facilities are proposed for the next five years.

Based on the DMR review, the facility has been in compliance with the existing limits most of the times. No comments received from Operations Section.
No industrial users are reported in the application.

Influent monitoring for CBOD5, TSS and BOD5 are recommended for the draft permit to check compliance with the 85% removal requirement and Chapter 94 requirement. These are consistent with the requirements of similar discharges in the area.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | *Sara Abraham*<br>Sara Reji Abraham, E.I.T. / Project Manager | April 10, 2023 |
| X | | *Pravin Patel*<br>Pravin C. Patel, P.E. / Environmental Engineer Manager | 04/10/2023 |

**Summary of Review**

Sludge use and disposal description and location(s): hauling off the sewage sludge to Delcora STP

On November 8, 2022, an aquatic biology investigation was conducted on West Branch Chester Creek in Concord Township by DEP. The purpose of the survey was to examine instream water quality impacts in West Branch Chester Creek associated with the discharge from the Concord Township Central STP in the area of the survey. Previously, the aquatic life use impairment was based on a 2013 Instream Comprehensive Evaluation (ICE) survey. The current survey report confirms the aquatic life use impairment in West Branch Chester Creek. It appears that the discharge from Outfall 001 is further degrading the macroinvertebrate community. The report also mentions that high nutrients in the discharge further exacerbating nutrient pollution in a watershed already impaired due to eutrophication.

Dep has decided to incorporate a more stringent effluent limit (summer) of 1.0 mg/l for Total Phosphorus compared to the current 2 mg/l in the draft permit to help preventing further impairment. A compliance time of 3 years is also included to meet this limit.

At the last permit renewal, Copper WQBEL was calculated, and included in the permit based on a site-specific chemical translator study conducted in 2009. The same is used for preparing this draft permit. This chemical translator (0.845) will not be used to develop WQBELs in subsequent permit renewals. If the permittee wishes to pursue the use of a site-specific chemical translator for Copper for subsequent permit renewals, the permittee must complete a new study and the results must be submitted at the next permit renewal. A special condition is included in Part C of the draft permit to provide an option to conduct a new study.

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.

Act 14 Notifications:

Concord Township - 12/2/2022
Chester Heights Borough -12/1/2022
Thornbury Township - 11/29/2022
Chadds Ford Township - 12/5/2022
Delaware County - 11/29/2022

Permits Condition:

A. No Stormwater
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. Chlorine Optimization
E. Operator Notification
F. Operations and Maintenance Plan
G. Fecal Coliform Reporting
H. TMDL/WLA Analysis
I. Effluent Pipe Cleaning
J. Visual Observation
K. Sampling at the Beehive Structure
L. Schedule of Compliance
M. Solids Management

| **Summary of Review** |
| --- |
| N. WET Requirement<br>O. Stormwater Condition<br>P. Site Specific Data Collection |

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 1.8 |
| Latitude | 39º 53' 23.16" | Longitude | -75º 30' 9.67" |
| Quad Name | West Chester | Quad Code | 9-21-1 |
| Wastewater Description: | Treated Sewage Effluent | | |
| Receiving Waters | West Branch Chester Creek | Stream Code | 00542 |
| NHD Com ID | 25621452 | RMI | 4.68 |
| Drainage Area | 10.29 | Yield (cfs/mi$^2$) | 0.18 |
| $Q_{7-10}$ Flow (cfs) | 1.85 | $Q_{7-10}$ Basis | Previous fact sheet |
| Elevation (ft) | 215 | | |
| Watershed No. | 3-G | Chapter 93 Class. | TSF, MF |
| 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 | | |

**Discharge, Receiving Waters and Water Supply Information**

| | | | |
|---|---|---|---|
| Outfall No. | 002 | Design Flow (MGD) | 0 |
| Latitude | 39º 52' 33.34" | Longitude | -75º 30' 48.57" |
| Quad Name | West Chester | Quad Code | 9-21-1 |
| Wastewater Description: | Stormwater | | |
| Receiving Waters | UNT to West Branch of Chester Creek (Webb Creek) | Stream Code | 00564 |
| NHD Com ID | 25621478 | RMI | 0.84 |
| Watershed No. | 3-G | Chapter 93 Class. | TSF, MF |
| 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 | | |

**Treatment Facility Summary**

Treatment Facility Name: Concord Township Central STP

| WQM Permit No. | Issuance Date |
|---|---|
| 2306402 | 7/20/2006 |
| 2306402 A-1 | 04/12/2016 |

| Waste Type | Degree of Treatment | Process Type | Disinfection | Avg Annual Flow (MGD) |
|---|---|---|---|---|
| Sewage | Secondary with Ammonia and Phosphorus Removal | Extended Aeration | Ultraviolet | 1.8 |

| Hydraulic Capacity (MGD) | Organic Capacity (lbs/day) | Load Status | Biosolids Treatment | Biosolids Use/Disposal |
|---|---|---|---|---|
| 1.8 | 5404 | Not Overloaded | Aerobic Digestion | Other WWTP |

## Compliance History

**DMR Data for Outfall 001 (from December 1, 2021 to November 30, 2022)**

| Parameter | NOV-22 | OCT-22 | SEP-22 | AUG-22 | JUL-22 | JUN-22 | MAY-22 | APR-22 | MAR-22 | FEB-22 | JAN-22 | DEC-21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 1.1306 | 1.2055 | 1.1343 | 1.1225 | 1.0912 | 1.1176 | 1.1244 | 1.1085 | 1.1233 | 1.1825 | 1.1842 | 1.1990 |
| Flow (MGD) Daily Maximum | 1.4830 | 1.4280 | 1.2300 | 1.2080 | 1.2320 | 1.2720 | 1.2310 | 1.3170 | 1.2840 | 1.2930 | 1.2630 | 1.3000 |
| pH (S.U.) Instantaneous Minimum | 6.86 | 7.05 | 7.08 | 7.08 | 7.15 | 7.28 | 7.22 | 6.80 | 6.6 | 6.76 | 6.77 | 7.11 |
| pH (S.U.) Instantaneous Maximum | 7.55 | 7.60 | 7.37 | 7.88 | 7.54 | 7.63 | 7.48 | 8.14 | 7.69 | 7.27 | 7.66 | 7.38 |
| DO (mg/L) Instantaneous Minimum | 6.9 | 5.8 | 5.9 | 5.5 | 6.0 | 6.0 | 6.2 | 6.8 | 6.9 | 6.9 | 6.7 | 6.7 |
| DO (mg/L) Average Monthly | 7.7 | 7.0 | 6.7 | 6.7 | 6.7 | 6.9 | 7.1 | 7.5 | 7.4 | 7.6 | 7.3 | 7.3 |
| TRC (mg/L) Average Monthly | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG |
| TRC (mg/L) Instantaneous Maximum | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG | GG |
| CBOD5 (lbs/day) Average Monthly | 90.0 | 73.6 | < 47.9 | < 50.5 | 60.3 | < 48.3 | < 43.1 | 59.0 | 79.0 | 72.2 | 82.9 | 74.0 |
| CBOD5 (lbs/day) Weekly Average | 109.8 | 80.7 | 56.9 | 68.1 | 71.0 | 61.9 | 53.1 | 72.3 | 107.4 | 79.7 | 112.8 | 86.5 |
| CBOD5 (mg/L) Average Monthly | 9.7 | 7.3 | < 5.1 | < 5.5 | 6.5 | < 5.1 | < 4.5 | 6.3 | 8.4 | 7.4 | 8.3 | 7.4 |
| CBOD5 (mg/L) Weekly Average | 12.0 | 8.0 | 6.1 | 7.2 | 7.7 | 6.5 | 5.8 | 7.7 | 11.4 | 8.1 | 11.1 | 8.3 |
| BOD5 (lbs/day) Raw Sewage Influent <br/> Average Monthly | 3712.91 | 3695.8 | 3371.5 | 4221.8 | 4216.0 | 5145.6 | 4646.0 | 4894.90 | 3995.48 | 4047.79 | 3425.68 | 2943.97 |
| BOD5 (mg/L) Raw Sewage Influent <br/> Average Monthly | 316.25 | 316.444 | 303.333 | 374.611 | 381.500 | 426.50 | 400.889 | 430.44 | 393.38 | 445.75 | 368.67 | 397.78 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSS (lbs/day) Average Monthly | 72.7 | < 80.6 | < 64.4 | < 79.9 | < 56.0 | < 55.3 | < 53.4 | < 75.3 | < 199.0 | 171.0 | < 200.4 | 221.4 |
| TSS (lbs/day) Raw Sewage Influent <br/> Average Monthly | 3074.1 | 2887.3 | 2128.2 | 2522.7 | 3028.3 | 1781.1 | 1761.3 | 1828.6 | 1787.0 | 1834.7 | 1615.6 | 1448.1 |
| TSS (lbs/day) Weekly Average | 91.5 | 90.7 | 85.4 | 100.7 | 68.9 | 66.1 | 56.1 | 169.7 | 291.9 | 209.2 | 321.0 | 399.3 |
| TSS (mg/L) Average Monthly | 7.9 | < 7.9 | < 6.8 | < 8.6 | < 6.1 | < 5.9 | < 5.7 | < 8.1 | < 20.8 | 17.7 | < 19.8 | 22.4 |
| TSS (mg/L) Raw Sewage Influent <br/> Average Monthly | 258.5 | 242.0 | 193.333 | 224.444 | 274.000 | 147.0 | 151.667 | 160.7 | 178.8 | 202.5 | 173.6 | 194.9 |
| TSS (mg/L) Weekly Average | 9.1 | 9.1 | 9.1 | 10.8 | 7.6 | 7.2 | < 6.1 | 18.4 | 29.4 | 21.6 | 31.0 | 38.8 |
| Total Dissolved Solids (mg/L) Average Quarterly | | | 467.0 | | | 573.0 | | | 437.0 | | | 412.0 |
| Fecal Coliform (No./100 ml) Geometric Mean | 127.7 | 126.5 | 127.7 | 129.2 | 125.3 | < 96.0 | 48.3 | 47.3 | < 8.8 | 28.6 | 44.0 | 92.8 |
| Fecal Coliform (No./100 ml) Instantaneous Maximum | 214.0 | 227.7 | 187.2 | 185.0 | 187.2 | 261.3 | 165.0 | 107.1 | 38.0 | 48.0 | 310.0 | 280.0 |
| UV Intensity (µw/cm²) Daily Minimum | 1.3 | 1.5 | 0.8 | 1.6 | 1.6 | 5.0 | 4.1 | 3.2 | 0.4 | 1.1 | 1.0 | 1.5 |
| Total Nitrogen (mg/L) Average Monthly | 21.20 | 13.93 | 18.27 | 15.77 | 17.35 | 19.24 | 20.84 | 18.22 | 18.45 | 23.59 | 28.91 | 27.05 |
| Ammonia (lbs/day) Average Monthly | 6.8 | 3.1 | < 7.2 | 6.0 | 4.6 | 6.4 | < 3.9 | < 2.7 | 9.2 | 61.2 | 77.0 | 96.5 |
| Ammonia (mg/L) Average Monthly | 0.7 | 0.3 | < 0.8 | 0.7 | 0.5 | 0.7 | < 0.4 | < 0.3 | 1.0 | 6.2 | 7.7 | 9.6 |
| Total Phosphorus (lbs/day) Average Monthly | 7.4 | 10.2 | 12.7 | 12.9 | 9.1 | 10.4 | 11.4 | 10.1 | 11.9 | 18.0 | 15.8 | 14.0 |
| Total Phosphorus (mg/L) Average Monthly | 0.8 | 1.0 | 1.3 | 1.4 | 1.0 | 1.1 | 1.2 | 1.1 | 1.3 | 1.8 | 1.6 | 1.4 |
| Total Copper (lbs/day) Average Monthly | 0.235 | 0.092 | 0.141 | 0.066 | 0.082 | < 0.111 | 0.072 | 0.119 | 0.324 | 0.236 | 0.204 | 0.202 |
| Total Copper (mg/L) Average Monthly | 0.019 | 0.009 | 0.015 | 0.007 | 0.009 | < 0.012 | 0.008 | 0.013 | 0.036 | 0.024 | 0.021 | 0.020 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Lead (mg/L)<br>Average Quarterly | | | < 0.001 | | | < 0.001 | | | < 0.001 | | | < 0.010 |
| Chronic WET - Ceriodaphnia Survival (TUc)<br>Daily Maximum | | | GG | | | GG | | | GG | | | 1.67 |
| Chronic WET - Ceriodaphnia Reproduction (TUc)<br>Daily Maximum | | | GG | | | GG | | | GG | | | 1.67 |
| Chronic WET - Pimephales Survival (TUc)<br>Daily Maximum | | | GG | | | GG | | | GG | | | 1.67 |
| Chronic WET - Pimephales Growth (TUc)<br>Daily Maximum | | | GG | | | GG | | | GG | | | 1.67 |

**DMR Data for Outfall 002 (from December 1, 2021 to November 30, 2022)**

| Parameter | NOV-22 | OCT-22 | SEP-22 | AUG-22 | JUL-22 | JUN-22 | MAY-22 | APR-22 | MAR-22 | FEB-22 | JAN-22 | DEC-21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| pH (S.U.)<br>Daily Maximum | | | | | | | | | | | | 7.42 |
| CBOD5 (mg/L)<br>Daily Maximum | | | | | | | | | | | | < 3.0 |
| COD (mg/L)<br>Daily Maximum | | | | | | | | | | | | < 25 |
| TSS (mg/L)<br>Daily Maximum | | | | | | | | | | | | 8.6 |
| Oil and Grease (mg/L)<br>Daily Maximum | | | | | | | | | | | | < 5 |
| Fecal Coliform (No./100 ml)<br>Daily Maximum | | | | | | | | | | | | < 1 |
| TKN (mg/L)<br>Daily Maximum | | | | | | | | | | | | 0.87 |
| Total Phosphorus (mg/L)<br>Daily Maximum | | | | | | | | | | | | 0.21 |
| Dissolved Iron (mg/L)<br>Daily Maximum | | | | | | | | | | | | 0.04 |

## Compliance History

**Effluent Violations for Outfall 001, from: January 1, 2022 To: November 30, 2022**

| Parameter | Date | SBC | DMR Value | Units | Limit Value | Units |
|---|---|---|---|---|---|---|
| Ammonia | 02/28/22 | Avg Mo | 6.2 | mg/L | 6.0 | mg/L |
| Ammonia | 01/31/22 | Avg Mo | 7.7 | mg/L | 6.0 | mg/L |
| Total Copper | 03/31/22 | Avg Mo | 0.036 | mg/L | .025 | mg/L |

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** 1.8
**Latitude** 39º 53' 23.40" **Longitude** -75º 30' 9.41"
**Wastewater Description:** Treated 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) |

### The following limitations were determined:

| Parameter | Limit (mg/l) | SBC | Basis/Comments |
|---|---|---|---|
| CBOD5 (5/1 to 10/31) | 20 | Monthly Average | WQM model |
| CBOD5 (11/1 to 4/30) | 25 | Monthly Average | Seasonal limit |
| Total Suspended Solids | 30 | Average Monthly | DRBC |
| NH3-N (5/1 to 10/31) | 2.0 | Average Monthly | WQM model |
| NH3-N (11/1 to 4/30) | 6.0 | Average Monthly | Seasonal limit |
| Total Phosphorus (4/1 to 10/31) | 1.0 | Average Monthly | BPJ* |
| Total Phosphorus (11/1 to 3/31) | 2.0 | Average Monthly | Existing limit |
| D.O. | 5.0 | Inst. Min. | WQM model |
| pH | 6.0 to 9.0 Std. units at all times | | Chap. 93 |
| Fecal Coliform | 200/1000 | Geo. Mean/IMax. | Chap.92 and DRBC |
| TRC | 0.11/0.35 | Ave. Mon./Imax. | Existing limit/ Spreadsheet |
| Total Nitrogen | Report | Average Monthly | Data Collection/SOP |
| UV intensity | Report | Daily Min. | Data Collection/SOP |
| TDS | 1000 | Average Quarterly | DRBC |
| E Coli | Report | Imax | Data Collection/SOP |

*Based on the stream survey conducted on November 8, 2022, DEP has decided to include this summer limit for TP in the draft permit to prevent further stream impairment. A compliance time of 2 years is also included in the draft permit.
All other limits are similar to the existing permit. E Coli is the only new parameter in the draft permit.

A "Reasonable Potential Analysis" using DEP's Toxic Management Spreadsheet (TMS) determined the following parameters are of concern:

| Parameter | Limit (mg/l) | SBC | Model | Comment |
|---|---|---|---|---|
| Total Aluminum | Report | Average Monthly | TMS | New parameter |
| Total Copper* | Report | Average Monthly | TMS | Existing limit recommended |
| Dissolved Iron | Report | Average Monthly | TMS | New parameter |
| Total Zinc | Report | Average Monthly | TMS | New parameter |

*Site specific copper translator (0.845) and hardness values are used for the TMS calculations. Copper translator value was based on a 2009 chemical translator study and it was used in the previous permits to calculate WQBEL for Copper. Since this study is more than 10 years old this will not be used to develop WQBELs in subsequent permits. A part C condition is included in the permit to provide permittee an option to conduct Site-Specific Data Collection Studies.

There is no concern for Total Lead and monitoring is eliminated from the permit.

**Anti-Backsliding**

N/A

See the below attached WQM and TMS reports:

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

# Discharge Information

Instructions | Discharge | Stream

Facility: Concord Twp Central STP NPDES Permit No.: PA0055212 Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste Wastewater Description: Treated Sewage Effluent

| Discharge Characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Design Flow (MGD)* | Hardness (mg/l)* | pH (SU)* | Partial Mix Factors (PMFs) | | | | Complete Mix Times (min) | |
| | | | AFC | CFC | THH | CRL | $Q_{7-10}$ | $Q_h$ |
| 1.8 | 143 | 7 | | | | | | |

| | | | | | 0 if left blank | | 0.6 if left blank | | 0 if left blank | | | 1 if left blank | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Discharge Pollutant | Units | Max Discharge Conc | | Trib Conc | Stream Conc | Daily CV | Hourly CV | Strea m CV | Fate Coeff | FOS | Criteri a Mod | Chem Transl |
| Group 1 | Total Dissolved Solids (PWS) | mg/L | | 498 | | | | | | | | | |
| | Chloride (PWS) | mg/L | | 80 | | | | | | | | | |
| | Bromide | mg/L | < | 2 | | | | | | | | | |
| | Sulfate (PWS) | mg/L | | 68.7 | | | | | | | | | |
| | Fluoride (PWS) | mg/L | | | | | | | | | | | |
| Group 2 | Total Aluminum | µg/L | | 370 | | | | | | | | | |
| | Total Antimony | µg/L | < | 0.6 | | | | | | | | | |
| | Total Arsenic | µg/L | < | 0.3 | | | | | | | | | |
| | Total Barium | µg/L | | 15 | | | | | | | | | |
| | Total Beryllium | µg/L | < | 0.1 | | | | | | | | | |
| | Total Boron | µg/L | | 200 | | | | | | | | | |
| | Total Cadmium | µg/L | < | 0.1 | | | | | | | | | |
| | Total Chromium (III) | µg/L | | 1.3 | | | | | | | | | |
| | Hexavalent Chromium | µg/L | < | 0.09 | | | | | | | | | |
| | Total Cobalt | µg/L | < | 0.3 | | | | | | | | | |
| | Total Copper | µg/L | | 11 | | | | | | | | | 0.845 |
| | Free Cyanide | µg/L | | 1 | | | | | | | | | |
| | Total Cyanide | µg/L | < | 2 | | | | | | | | | |
| | Dissolved Iron | µg/L | | 50 | | | | | | | | | |
| | Total Iron | µg/L | | 60 | | | | | | | | | |
| | Total Lead | µg/L | < | 0.6 | | | | | | | | | |
| | Total Manganese | µg/L | | 25 | | | | | | | | | |
| | Total Mercury | µg/L | < | 0.09 | | | | | | | | | |
| | Total Nickel | µg/L | | 3.2 | | | | | | | | | |
| | Total Phenols (Phenolics) (PWS) | µg/L | | 3 | | | | | | | | | |
| | Total Selenium | µg/L | < | 0.4 | | | | | | | | | |
| | Total Silver | µg/L | < | 0.3 | | | | | | | | | |
| | Total Thallium | µg/L | < | 0.2 | | | | | | | | | |
| | Total Zinc | µg/L | | 43 | | | | | | | | | |
| | Total Molybdenum | µg/L | < | 3 | | | | | | | | | |
| | Acrolein | µg/L | < | 1.6 | | | | | | | | | |
| | Acrylamide | µg/L | < | | | | | | | | | | |
| | Acrylonitrile | µg/L | < | 0.8 | | | | | | | | | |
| | Benzene | µg/L | < | 0.1 | | | | | | | | | |
| | Bromoform | µg/L | < | 0.4 | | | | | | | | | |
| | Carbon Tetrachloride | µg/L | < | 0.1 | | | | | | | | | |
| | Chlorobenzene | µg/L | | 0.08 | | | | | | | | | |
| | Chlorodibromomethane | µg/L | < | 0.1 | | | | | | | | | |
| | Chloroethane | µg/L | < | 0.3 | | | | | | | | | |
| | 2-Chloroethyl Vinyl Ether | µg/L | < | 3.4 | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group 3 | Chloroform | µg/L | < | 0.3 | | | | | | | | | |
| | Dichlorobromomethane | µg/L | < | 0.1 | | | | | | | | | |
| | 1,1-Dichloroethane | µg/L | < | 0.1 | | | | | | | | | |
| | 1,2-Dichloroethane | µg/L | < | 0.2 | | | | | | | | | |
| | 1,1-Dichloroethylene | µg/L | < | 0.1 | | | | | | | | | |
| | 1,2-Dichloropropane | µg/L | < | 0.1 | | | | | | | | | |
| | 1,3-Dichloropropylene | µg/L | < | 0.1 | | | | | | | | | |
| | 1,4-Dioxane | µg/L | < | 0.6 | | | | | | | | | |
| | Ethylbenzene | µg/L | < | 0.1 | | | | | | | | | |
| | Methyl Bromide | µg/L | < | 0.4 | | | | | | | | | |
| | Methyl Chloride | µg/L | < | 0.2 | | | | | | | | | |
| | Methylene Chloride | µg/L | < | 0.2 | | | | | | | | | |
| | 1,1,2,2-Tetrachloroethane | µg/L | < | 0.1 | | | | | | | | | |
| | Tetrachloroethylene | µg/L | < | 0.1 | | | | | | | | | |
| | Toluene | µg/L | < | 0.4 | | | | | | | | | |
| | 1,2-trans-Dichloroethylene | µg/L | < | 0.2 | | | | | | | | | |
| | 1,1,1-Trichloroethane | µg/L | < | 0.2 | | | | | | | | | |
| | 1,1,2-Trichloroethane | µg/L | < | 0.1 | | | | | | | | | |
| | Trichloroethylene | µg/L | < | 0.1 | | | | | | | | | |
| | Vinyl Chloride | µg/L | < | 0.1 | | | | | | | | | |
| Group 4 | 2-Chlorophenol | µg/L | < | 1.6 | | | | | | | | | |
| | 2,4-Dichlorophenol | µg/L | < | 2 | | | | | | | | | |
| | 2,4-Dimethylphenol | µg/L | < | 2 | | | | | | | | | |
| | 4,6-Dinitro-o-Cresol | µg/L | < | 3 | | | | | | | | | |
| | 2,4-Dinitrophenol | µg/L | < | 2 | | | | | | | | | |
| | 2-Nitrophenol | µg/L | < | 2.9 | | | | | | | | | |
| | 4-Nitrophenol | µg/L | < | 3.8 | | | | | | | | | |
| | p-Chloro-m-Cresol | µg/L | < | 1.7 | | | | | | | | | |
| | Pentachlorophenol | µg/L | < | 3.6 | | | | | | | | | |
| | Phenol | µg/L | < | 0.7 | | | | | | | | | |
| | 2,4,6-Trichlorophenol | µg/L | < | 2.6 | | | | | | | | | |
| Group 5 | Acenaphthene | µg/L | < | 1.2 | | | | | | | | | |
| | Acenaphthylene | µg/L | < | 1.5 | | | | | | | | | |
| | Anthracene | µg/L | < | 2 | | | | | | | | | |
| | Benzidine | µg/L | < | 10.2 | | | | | | | | | |
| | Benzo(a)Anthracene | µg/L | < | 1.5 | | | | | | | | | |
| | Benzo(a)Pyrene | µg/L | < | 1.8 | | | | | | | | | |
| | 3,4-Benzofluoranthene | µg/L | < | 1.6 | | | | | | | | | |
| | Benzo(ghi)Perylene | µg/L | < | 1.8 | | | | | | | | | |
| | Benzo(k)Fluoranthene | µg/L | < | 0.9 | | | | | | | | | |
| | Bis(2-Chloroethoxy)Methane | µg/L | < | 2.5 | | | | | | | | | |
| | Bis(2-Chloroethyl)Ether | µg/L | < | 2.4 | | | | | | | | | |
| | Bis(2-Chloroisopropyl)Ether | µg/L | < | 3.8 | | | | | | | | | |
| | Bis(2-Ethylhexyl)Phthalate | µg/L | < | 1.4 | | | | | | | | | |
| | 4-Bromophenyl Phenyl Ether | µg/L | < | 4.1 | | | | | | | | | |
| | Butyl Benzyl Phthalate | µg/L | < | 4 | | | | | | | | | |
| | 2-Chloronaphthalene | µg/L | < | 3.3 | | | | | | | | | |
| | 4-Chlorophenyl Phenyl Ether | µg/L | < | 2.4 | | | | | | | | | |
| | Chrysene | µg/L | < | 1.6 | | | | | | | | | |
| | Dibenzo(a,h)Anthracene | µg/L | < | 1.9 | | | | | | | | | |
| | 1,2-Dichlorobenzene | µg/L | < | 0.3 | | | | | | | | | |
| | 1,3-Dichlorobenzene | µg/L | < | 0.3 | | | | | | | | | |
| | 1,4-Dichlorobenzene | µg/L | < | 0.3 | | | | | | | | | |
| | 3,3-Dichlorobenzidine | µg/L | < | 5 | | | | | | | | | |
| | Diethyl Phthalate | µg/L | < | 2.7 | | | | | | | | | |
| | Dimethyl Phthalate | µg/L | < | 2.4 | | | | | | | | | |
| | Di-n-Butyl Phthalate | µg/L | < | 2.9 | | | | | | | | | |
| | 2,4-Dinitrotoluene | µg/L | < | 2.7 | | | | | | | | | |
| | 2,6-Dinitrotoluene | µg/L | < | 3.1 | | | | | | | | | |
| | Di-n-Octyl Phthalate | µg/L | < | 2.6 | | | | | | | | | |
| | 1,2-Diphenylhydrazine | µg/L | < | 3 | | | | | | | | | |
| | Fluoranthene | µg/L | < | 1.7 | | | | | | | | | |
| | Fluorene | µg/L | < | 1.2 | | | | | | | | | |
| | Hexachlorobenzene | µg/L | < | 4.2 | | | | | | | | | |
| | Hexachlorobutadiene | µg/L | < | 0.4 | | | | | | | | | |
| | Hexachlorocyclopentadiene | µg/L | < | 1 | | | | | | | | | |
| | Hexachloroethane | µg/L | < | 2.9 | | | | | | | | | |
| | Indeno(1,2,3-cd)Pyrene | µg/L | < | 2 | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Isophorone | µg/L | < | 2.3 | | | | | | | | | |
| | Naphthalene | µg/L | < | 0.2 | | | | | | | | | |
| | Nitrobenzene | µg/L | < | 2.4 | | | | | | | | | |
| | n-Nitrosodimethylamine | µg/L | < | 1 | | | | | | | | | |
| | n-Nitrosodi-n-Propylamine | µg/L | < | 2.4 | | | | | | | | | |
| | n-Nitrosodiphenylamine | µg/L | < | 3.7 | | | | | | | | | |
| | Phenanthrene | µg/L | < | 2.5 | | | | | | | | | |
| | Pyrene | µg/L | < | 2.5 | | | | | | | | | |
| | 1,2,4-Trichlorobenzene | µg/L | < | 0.3 | | | | | | | | | |
| Group 6 | Aldrin | µg/L | < | | | | | | | | | | |
| | alpha-BHC | µg/L | < | | | | | | | | | | |
| | beta-BHC | µg/L | < | | | | | | | | | | |
| | gamma-BHC | µg/L | < | | | | | | | | | | |
| | delta BHC | µg/L | < | | | | | | | | | | |
| | Chlordane | µg/L | < | | | | | | | | | | |
| | 4,4-DDT | µg/L | < | | | | | | | | | | |
| | 4,4-DDE | µg/L | < | | | | | | | | | | |
| | 4,4-DDD | µg/L | < | | | | | | | | | | |
| | Dieldrin | µg/L | < | | | | | | | | | | |
| | alpha-Endosulfan | µg/L | < | | | | | | | | | | |
| | beta-Endosulfan | µg/L | < | | | | | | | | | | |
| | Endosulfan Sulfate | µg/L | < | | | | | | | | | | |
| | Endrin | µg/L | < | | | | | | | | | | |
| | Endrin Aldehyde | µg/L | < | | | | | | | | | | |
| | Heptachlor | µg/L | < | | | | | | | | | | |
| | Heptachlor Epoxide | µg/L | < | | | | | | | | | | |
| | PCB-1016 | µg/L | < | | | | | | | | | | |
| | PCB-1221 | µg/L | < | | | | | | | | | | |
| | PCB-1232 | µg/L | < | | | | | | | | | | |
| | PCB-1242 | µg/L | < | | | | | | | | | | |
| | PCB-1248 | µg/L | < | | | | | | | | | | |
| | PCB-1254 | µg/L | < | | | | | | | | | | |
| | PCB-1260 | µg/L | < | | | | | | | | | | |
| | PCBs, Total | µg/L | < | | | | | | | | | | |
| | Toxaphene | µg/L | < | | | | | | | | | | |
| | 2,3,7,8-TCDD | ng/L | < | | | | | | | | | | |
| Group 7 | Gross Alpha | pCi/L | | | | | | | | | | | |
| | Total Beta | pCi/L | < | | | | | | | | | | |
| | Radium 226/228 | pCi/L | < | | | | | | | | | | |
| | Total Strontium | µg/L | < | | | | | | | | | | |
| | Total Uranium | µg/L | < | | | | | | | | | | |
| | Osmotic Pressure | mOs/kg | | | | | | | | | | | |
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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

## Stream / Surface Water Information

**Concord Twp Central STP, NPDES Permit No. PA0055212, Outfall 001**

Instructions | Discharge | Stream

Receiving Surface Water Name: West Branch Chester Creek

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

| Location | Stream Code* | RMI* | Elevation (ft)* | DA (mi²)* | Slope (ft/ft) | PWS Withdrawal (MGD) | Apply Fish Criteria* |
|---|---|---|---|---|---|---|---|
| Point of Discharge | 000542 | 4.68 | 215 | 10.29 | | | Yes |
| End of Reach 1 | 000542 | 4.23 | 195 | 10.74 | | | Yes |

$Q_{7\text{-}10}$

| Location | RMI | LFY (cfs/mi²)* | Flow (cfs) | | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time | Tributary | | Stream | | Analysis | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Stream | Tributary | | | | | | Hardness | pH | Hardness* | pH* | Hardness | pH |
| Point of Discharge | 4.68 | 0.1 | 1.85 | | | | | | | | | 150 | 7 | | |
| End of Reach 1 | 4.23 | 0.1 | | | | | | | | | | | | | |

$Q_h$

| Location | RMI | LFY (cfs/mi²) | Flow (cfs) | | W/D Ratio | Width (ft) | Depth (ft) | Velocity (fps) | Travel Time | Tributary | | Stream | | Analysis | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Stream | Tributary | | | | | | Hardness | pH | Hardness | pH | Hardness | pH |
| Point of Discharge | 4.68 | | | | | | | | | | | | | | |
| End of Reach 1 | 4.23 | | | | | | | | | | | | | | |

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

## Model Results

**Concord Twp Central STP, NPDES Permit No. PA0055212, Outfall 001**

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (•) All ( ) Inputs ( ) Results ( ) Limits

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 2.634 PMF: 1 Analysis Hardness (mg/l): 145.79 Analysis pH: 7.00

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | 750 | 750 | 1,248 | |
| Total Antimony | 0 | 0 | | 0 | 1,100 | 1,100 | 1,831 | |
| Total Arsenic | 0 | 0 | | 0 | 340 | 340 | 566 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 21,000 | 21,000 | 34,952 | |
| Total Boron | 0 | 0 | | 0 | 8,100 | 8,100 | 13,481 | |
| Total Cadmium | 0 | 0 | | 0 | 2.905 | 3.13 | 5.21 | Chem Translator of 0.928 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 775.886 | 2,455 | 4,087 | Chem Translator of 0.316 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 16 | 16.3 | 27.1 | Chem Translator of 0.982 applied |
| Total Cobalt | 0 | 0 | | 0 | 95 | 95.0 | 158 | |
| Total Copper | 0 | 0 | | 0 | 19.171 | 22.7 | 37.8 | Chem Translator of 0.845 applied |
| Free Cyanide | 0 | 0 | | 0 | 22 | 22.0 | 36.6 | |
| Dissolved Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Lead | 0 | 0 | | 0 | 97.115 | 132 | 220 | Chem Translator of 0.736 applied |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | 1.400 | 1.65 | 2.74 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 644.153 | 645 | 1,074 | Chem Translator of 0.998 applied |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | N/A | N/A | N/A | Chem Translator of 0.922 applied |
| Total Silver | 0 | 0 | | 0 | 6.152 | 7.24 | 12.0 | Chem Translator of 0.85 applied |
| Total Thallium | 0 | 0 | | 0 | 65 | 65.0 | 108 | |
| Total Zinc | 0 | 0 | | 0 | 161.284 | 165 | 274 | Chem Translator of 0.978 applied |
| Acrolein | 0 | 0 | | 0 | 3 | 3.0 | 4.99 | |
| Acrylonitrile | 0 | 0 | | 0 | 650 | 650 | 1,082 | |
| Benzene | 0 | 0 | | 0 | 640 | 640 | 1,065 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bromoform | 0 | 0 | | 0 | 1,800 | 1,800 | 2,996 | |
| Carbon Tetrachloride | 0 | 0 | | 0 | 2,800 | 2,800 | 4,660 | |
| Chlorobenzene | 0 | 0 | | 0 | 1,200 | 1,200 | 1,997 | |
| Chlorodibromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chloroethyl Vinyl Ether | 0 | 0 | | 0 | 18,000 | 18,000 | 29,959 | |
| Chloroform | 0 | 0 | | 0 | 1,900 | 1,900 | 3,162 | |
| Dichlorobromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichloroethane | 0 | 0 | | 0 | 15,000 | 15,000 | 24,966 | |
| 1,1-Dichloroethylene | 0 | 0 | | 0 | 7,500 | 7,500 | 12,483 | |
| 1,2-Dichloropropane | 0 | 0 | | 0 | 11,000 | 11,000 | 18,308 | |
| 1,3-Dichloropropylene | 0 | 0 | | 0 | 310 | 310 | 516 | |
| Ethylbenzene | 0 | 0 | | 0 | 2,900 | 2,900 | 4,827 | |
| Methyl Bromide | 0 | 0 | | 0 | 550 | 550 | 915 | |
| Methyl Chloride | 0 | 0 | | 0 | 28,000 | 28,000 | 46,602 | |
| Methylene Chloride | 0 | 0 | | 0 | 12,000 | 12,000 | 19,972 | |
| 1,1,2,2-Tetrachloroethane | 0 | 0 | | 0 | 1,000 | 1,000 | 1,664 | |
| Tetrachloroethylene | 0 | 0 | | 0 | 700 | 700 | 1,165 | |
| Toluene | 0 | 0 | | 0 | 1,700 | 1,700 | 2,829 | |
| 1,2-trans-Dichloroethylene | 0 | 0 | | 0 | 6,800 | 6,800 | 11,318 | |
| 1,1,1-Trichloroethane | 0 | 0 | | 0 | 3,000 | 3,000 | 4,993 | |
| 1,1,2-Trichloroethane | 0 | 0 | | 0 | 3,400 | 3,400 | 5,659 | |
| Trichloroethylene | 0 | 0 | | 0 | 2,300 | 2,300 | 3,828 | |
| Vinyl Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chlorophenol | 0 | 0 | | 0 | 560 | 560 | 932 | |
| 2,4-Dichlorophenol | 0 | 0 | | 0 | 1,700 | 1,700 | 2,829 | |
| 2,4-Dimethylphenol | 0 | 0 | | 0 | 660 | 660 | 1,098 | |
| 4,6-Dinitro-o-Cresol | 0 | 0 | | 0 | 80 | 80.0 | 133 | |
| 2,4-Dinitrophenol | 0 | 0 | | 0 | 660 | 660 | 1,098 | |
| 2-Nitrophenol | 0 | 0 | | 0 | 8,000 | 8,000 | 13,315 | |
| 4-Nitrophenol | 0 | 0 | | 0 | 2,300 | 2,300 | 3,828 | |
| p-Chloro-m-Cresol | 0 | 0 | | 0 | 160 | 160 | 266 | |
| Pentachlorophenol | 0 | 0 | | 0 | 8.723 | 8.72 | 14.5 | |
| Phenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4,6-Trichlorophenol | 0 | 0 | | 0 | 460 | 460 | 766 | |
| Acenaphthene | 0 | 0 | | 0 | 83 | 83.0 | 138 | |
| Anthracene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzidine | 0 | 0 | | 0 | 300 | 300 | 499 | |
| Benzo(a)Anthracene | 0 | 0 | | 0 | 0.5 | 0.5 | 0.83 | |
| Benzo(a)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 3,4-Benzofluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzo(k)Fluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Chloroethyl)Ether | 0 | 0 | | 0 | 30,000 | 30,000 | 49,931 | |
| Bis(2-Chloroisopropyl)Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Ethylhexyl)Phthalate | 0 | 0 | | 0 | 4,500 | 4,500 | 7,490 | |
| 4-Bromophenyl Phenyl Ether | 0 | 0 | | 0 | 270 | 270 | 449 | |
| Butyl Benzyl Phthalate | 0 | 0 | | 0 | 140 | 140 | 233 | |
| 2-Chloronaphthalene | 0 | 0 | | 0 | N/A | N/A | N/A | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chrysene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dibenzo(a,h)Anthrancene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichlorobenzene | 0 | 0 | | 0 | 820 | 820 | 1,365 | |
| 1,3-Dichlorobenzene | 0 | 0 | | 0 | 350 | 350 | 583 | |
| 1,4-Dichlorobenzene | 0 | 0 | | 0 | 730 | 730 | 1,215 | |
| 3,3-Dichlorobenzidine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Diethyl Phthalate | 0 | 0 | | 0 | 4,000 | 4,000 | 6,657 | |
| Dimethyl Phthalate | 0 | 0 | | 0 | 2,500 | 2,500 | 4,161 | |
| Di-n-Butyl Phthalate | 0 | 0 | | 0 | 110 | 110 | 183 | |
| 2,4-Dinitrotoluene | 0 | 0 | | 0 | 1,600 | 1,600 | 2,663 | |
| 2,6-Dinitrotoluene | 0 | 0 | | 0 | 990 | 990 | 1,648 | |
| 1,2-Diphenylhydrazine | 0 | 0 | | 0 | 15 | 15.0 | 25.0 | |
| Fluoranthene | 0 | 0 | | 0 | 200 | 200 | 333 | |
| Fluorene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobutadiene | 0 | 0 | | 0 | 10 | 10.0 | 16.6 | |
| Hexachlorocyclopentadiene | 0 | 0 | | 0 | 5 | 5.0 | 8.32 | |
| Hexachloroethane | 0 | 0 | | 0 | 60 | 60.0 | 99.9 | |
| Indeno(1,2,3-cd)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Isophorone | 0 | 0 | | 0 | 10,000 | 10,000 | 16,644 | |
| Naphthalene | 0 | 0 | | 0 | 140 | 140 | 233 | |
| Nitrobenzene | 0 | 0 | | 0 | 4,000 | 4,000 | 6,657 | |
| n-Nitrosodimethylamine | 0 | 0 | | 0 | 17,000 | 17,000 | 28,294 | |
| n-Nitrosodi-n-Propylamine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| n-Nitrosodiphenylamine | 0 | 0 | | 0 | 300 | 300 | 499 | |
| Phenanthrene | 0 | 0 | | 0 | 5 | 5.0 | 8.32 | |
| Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2,4-Trichlorobenzene | 0 | 0 | | 0 | 130 | 130 | 216 | |

☑ *CFC* CCT (min): 2.634 PMF: 1 Analysis Hardness (mg/l): 145.79 Analysis pH: 7.00

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Antimony | 0 | 0 | | 0 | 220 | 220 | 366 | |
| Total Arsenic | 0 | 0 | | 0 | 150 | 150 | 250 | Chem Translator of 1 applied |
| Total Barium | 0 | 0 | | 0 | 4,100 | 4,100 | 6,824 | |
| Total Boron | 0 | 0 | | 0 | 1,600 | 1,600 | 2,663 | |
| Total Cadmium | 0 | 0 | | 0 | 0.320 | 0.36 | 0.6 | Chem Translator of 0.893 applied |
| Total Chromium (III) | 0 | 0 | | 0 | 100.927 | 117 | 195 | Chem Translator of 0.86 applied |
| Hexavalent Chromium | 0 | 0 | | 0 | 10 | 10.4 | 17.3 | Chem Translator of 0.962 applied |
| Total Cobalt | 0 | 0 | | 0 | 19 | 19.0 | 31.6 | |
| Total Copper | 0 | 0 | | 0 | 12.360 | 14.6 | 24.3 | Chem Translator of 0.845 applied |
| Free Cyanide | 0 | 0 | | 0 | 5.2 | 5.2 | 8.65 | |
| Dissolved Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Iron | 0 | 0 | | 0 | 1,500 | 1,500 | 2,497 | WQC = 30 day average; PMF = 1 |
| Total Lead | 0 | 0 | | 0 | 3.784 | 5.14 | 8.56 | Chem Translator of 0.736 applied |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | 0.770 | 0.91 | 1.51 | Chem Translator of 0.85 applied |
| Total Nickel | 0 | 0 | | 0 | 71.545 | 71.8 | 119 | Chem Translator of 0.997 applied |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | 4.600 | 4.99 | 8.3 | Chem Translator of 0.922 applied |
| Total Silver | 0 | 0 | | 0 | N/A | N/A | N/A | Chem Translator of 1 applied |
| Total Thallium | 0 | 0 | | 0 | 13 | 13.0 | 21.6 | |
| Total Zinc | 0 | 0 | | 0 | 162.604 | 165 | 274 | Chem Translator of 0.986 applied |
| Acrolein | 0 | 0 | | 0 | 3 | 3.0 | 4.99 | |
| Acrylonitrile | 0 | 0 | | 0 | 130 | 130 | 216 | |
| Benzene | 0 | 0 | | 0 | 130 | 130 | 216 | |
| Bromoform | 0 | 0 | | 0 | 370 | 370 | 616 | |
| Carbon Tetrachloride | 0 | 0 | | 0 | 560 | 560 | 932 | |
| Chlorobenzene | 0 | 0 | | 0 | 240 | 240 | 399 | |
| Chlorodibromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chloroethyl Vinyl Ether | 0 | 0 | | 0 | 3,500 | 3,500 | 5,825 | |
| Chloroform | 0 | 0 | | 0 | 390 | 390 | 649 | |
| Dichlorobromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichloroethane | 0 | 0 | | 0 | 3,100 | 3,100 | 5,160 | |
| 1,1-Dichloroethylene | 0 | 0 | | 0 | 1,500 | 1,500 | 2,497 | |
| 1,2-Dichloropropane | 0 | 0 | | 0 | 2,200 | 2,200 | 3,662 | |
| 1,3-Dichloropropylene | 0 | 0 | | 0 | 61 | 61.0 | 102 | |
| Ethylbenzene | 0 | 0 | | 0 | 580 | 580 | 965 | |
| Methyl Bromide | 0 | 0 | | 0 | 110 | 110 | 183 | |
| Methyl Chloride | 0 | 0 | | 0 | 5,500 | 5,500 | 9,154 | |
| Methylene Chloride | 0 | 0 | | 0 | 2,400 | 2,400 | 3,994 | |
| 1,1,2,2-Tetrachloroethane | 0 | 0 | | 0 | 210 | 210 | 350 | |
| Tetrachloroethylene | 0 | 0 | | 0 | 140 | 140 | 233 | |
| Toluene | 0 | 0 | | 0 | 330 | 330 | 549 | |
| 1,2-trans-Dichloroethylene | 0 | 0 | | 0 | 1,400 | 1,400 | 2,330 | |
| 1,1,1-Trichloroethane | 0 | 0 | | 0 | 610 | 610 | 1,015 | |
| 1,1,2-Trichloroethane | 0 | 0 | | 0 | 680 | 680 | 1,132 | |
| Trichloroethylene | 0 | 0 | | 0 | 450 | 450 | 749 | |
| Vinyl Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chlorophenol | 0 | 0 | | 0 | 110 | 110 | 183 | |
| 2,4-Dichlorophenol | 0 | 0 | | 0 | 340 | 340 | 566 | |
| 2,4-Dimethylphenol | 0 | 0 | | 0 | 130 | 130 | 216 | |
| 4,6-Dinitro-o-Cresol | 0 | 0 | | 0 | 16 | 16.0 | 26.6 | |
| 2,4-Dinitrophenol | 0 | 0 | | 0 | 130 | 130 | 216 | |
| 2-Nitrophenol | 0 | 0 | | 0 | 1,600 | 1,600 | 2,663 | |
| 4-Nitrophenol | 0 | 0 | | 0 | 470 | 470 | 782 | |
| p-Chloro-m-Cresol | 0 | 0 | | 0 | 500 | 500 | 832 | |
| Pentachlorophenol | 0 | 0 | | 0 | 6.693 | 6.69 | 11.1 | |
| Phenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4,6-Trichlorophenol | 0 | 0 | | 0 | 91 | 91.0 | 151 | |
| Acenaphthene | 0 | 0 | | 0 | 17 | 17.0 | 28.3 | |
| Anthracene | 0 | 0 | | 0 | N/A | N/A | N/A | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzidine | 0 | 0 | | 0 | 59 | 59.0 | 98.2 | |
| Benzo(a)Anthracene | 0 | 0 | | 0 | 0.1 | 0.1 | 0.17 | |
| Benzo(a)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 3,4-Benzofluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzo(k)Fluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Chloroethyl)Ether | 0 | 0 | | 0 | 6,000 | 6,000 | 9,986 | |
| Bis(2-Chloroisopropyl)Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Ethylhexyl)Phthalate | 0 | 0 | | 0 | 910 | 910 | 1,515 | |
| 4-Bromophenyl Phenyl Ether | 0 | 0 | | 0 | 54 | 54.0 | 89.9 | |
| Butyl Benzyl Phthalate | 0 | 0 | | 0 | 35 | 35.0 | 58.3 | |
| 2-Chloronaphthalene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chrysene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dibenzo(a,h)Anthrancene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichlorobenzene | 0 | 0 | | 0 | 160 | 160 | 266 | |
| 1,3-Dichlorobenzene | 0 | 0 | | 0 | 69 | 69.0 | 115 | |
| 1,4-Dichlorobenzene | 0 | 0 | | 0 | 150 | 150 | 250 | |
| 3,3-Dichlorobenzidine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Diethyl Phthalate | 0 | 0 | | 0 | 800 | 800 | 1,331 | |
| Dimethyl Phthalate | 0 | 0 | | 0 | 500 | 500 | 832 | |
| Di-n-Butyl Phthalate | 0 | 0 | | 0 | 21 | 21.0 | 35.0 | |
| 2,4-Dinitrotoluene | 0 | 0 | | 0 | 320 | 320 | 533 | |
| 2,6-Dinitrotoluene | 0 | 0 | | 0 | 200 | 200 | 333 | |
| 1,2-Diphenylhydrazine | 0 | 0 | | 0 | 3 | 3.0 | 4.99 | |
| Fluoranthene | 0 | 0 | | 0 | 40 | 40.0 | 66.6 | |
| Fluorene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobutadiene | 0 | 0 | | 0 | 2 | 2.0 | 3.33 | |
| Hexachlorocyclopentadiene | 0 | 0 | | 0 | 1 | 1.0 | 1.66 | |
| Hexachloroethane | 0 | 0 | | 0 | 12 | 12.0 | 20.0 | |
| Indeno(1,2,3-cd)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Isophorone | 0 | 0 | | 0 | 2,100 | 2,100 | 3,495 | |
| Naphthalene | 0 | 0 | | 0 | 43 | 43.0 | 71.6 | |
| Nitrobenzene | 0 | 0 | | 0 | 810 | 810 | 1,348 | |
| n-Nitrosodimethylamine | 0 | 0 | | 0 | 3,400 | 3,400 | 5,659 | |
| n-Nitrosodi-n-Propylamine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| n-Nitrosodiphenylamine | 0 | 0 | | 0 | 59 | 59.0 | 98.2 | |
| Phenanthrene | 0 | 0 | | 0 | 1 | 1.0 | 1.66 | |
| Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2,4-Trichlorobenzene | 0 | 0 | | 0 | 26 | 26.0 | 43.3 | |

☑ ***THH*** CCT (min): 2.634 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | 500,000 | 500,000 | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | 250,000 | 250,000 | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | 250,000 | 250,000 | N/A | |
| Total Aluminum | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Antimony | 0 | 0 | | 0 | 5.6 | 5.6 | 9.32 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Arsenic | 0 | 0 | | 0 | 10 | 10.0 | 16.6 | |
| Total Barium | 0 | 0 | | 0 | 2,400 | 2,400 | 3,994 | |
| Total Boron | 0 | 0 | | 0 | 3,100 | 3,100 | 5,160 | |
| Total Cadmium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Chromium (III) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexavalent Chromium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cobalt | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Free Cyanide | 0 | 0 | | 0 | 4 | 4.0 | 6.66 | |
| Dissolved Iron | 0 | 0 | | 0 | 300 | 300 | 499 | |
| Total Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Lead | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Manganese | 0 | 0 | | 0 | 1,000 | 1,000 | 1,664 | |
| Total Mercury | 0 | 0 | | 0 | 0.050 | 0.05 | 0.083 | |
| Total Nickel | 0 | 0 | | 0 | 610 | 610 | 1,015 | |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | 5 | 5.0 | N/A | |
| Total Selenium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Silver | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Thallium | 0 | 0 | | 0 | 0.24 | 0.24 | 0.4 | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Acrolein | 0 | 0 | | 0 | 3 | 3.0 | 4.99 | |
| Acrylonitrile | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bromoform | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Carbon Tetrachloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chlorobenzene | 0 | 0 | | 0 | 100 | 100.0 | 166 | |
| Chlorodibromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chloroethyl Vinyl Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloroform | 0 | 0 | | 0 | 5.7 | 5.7 | 9.49 | |
| Dichlorobromomethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichloroethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,1-Dichloroethylene | 0 | 0 | | 0 | 33 | 33.0 | 54.9 | |
| 1,2-Dichloropropane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,3-Dichloropropylene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Ethylbenzene | 0 | 0 | | 0 | 68 | 68.0 | 113 | |
| Methyl Bromide | 0 | 0 | | 0 | 100 | 100.0 | 166 | |
| Methyl Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Methylene Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,1,2,2-Tetrachloroethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Tetrachloroethylene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Toluene | 0 | 0 | | 0 | 57 | 57.0 | 94.9 | |
| 1,2-trans-Dichloroethylene | 0 | 0 | | 0 | 100 | 100.0 | 166 | |
| 1,1,1-Trichloroethane | 0 | 0 | | 0 | 10,000 | 10,000 | 16,644 | |
| 1,1,2-Trichloroethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Trichloroethylene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Vinyl Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chlorophenol | 0 | 0 | | 0 | 30 | 30.0 | 49.9 | |
| 2,4-Dichlorophenol | 0 | 0 | | 0 | 10 | 10.0 | 16.6 | |
| 2,4-Dimethylphenol | 0 | 0 | | 0 | 100 | 100.0 | 166 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4,6-Dinitro-o-Cresol | 0 | 0 | | 0 | 2 | 2.0 | 3.33 | |
| 2,4-Dinitrophenol | 0 | 0 | | 0 | 10 | 10.0 | 16.6 | |
| 2-Nitrophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 4-Nitrophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| p-Chloro-m-Cresol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Pentachlorophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Phenol | 0 | 0 | | 0 | 4,000 | 4,000 | 6,657 | |
| 2,4,6-Trichlorophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Acenaphthene | 0 | 0 | | 0 | 70 | 70.0 | 117 | |
| Anthracene | 0 | 0 | | 0 | 300 | 300 | 499 | |
| Benzidine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzo(a)Anthracene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzo(a)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 3,4-Benzofluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzo(k)Fluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Chloroethyl)Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Chloroisopropyl)Ether | 0 | 0 | | 0 | 200 | 200 | 333 | |
| Bis(2-Ethylhexyl)Phthalate | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 4-Bromophenyl Phenyl Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Butyl Benzyl Phthalate | 0 | 0 | | 0 | 0.1 | 0.1 | 0.17 | |
| 2-Chloronaphthalene | 0 | 0 | | 0 | 800 | 800 | 1,331 | |
| Chrysene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dibenzo(a,h)Anthrancene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichlorobenzene | 0 | 0 | | 0 | 1,000 | 1,000 | 1,664 | |
| 1,3-Dichlorobenzene | 0 | 0 | | 0 | 7 | 7.0 | 11.7 | |
| 1,4-Dichlorobenzene | 0 | 0 | | 0 | 300 | 300 | 499 | |
| 3,3-Dichlorobenzidine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Diethyl Phthalate | 0 | 0 | | 0 | 600 | 600 | 999 | |
| Dimethyl Phthalate | 0 | 0 | | 0 | 2,000 | 2,000 | 3,329 | |
| Di-n-Butyl Phthalate | 0 | 0 | | 0 | 20 | 20.0 | 33.3 | |
| 2,4-Dinitrotoluene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,6-Dinitrotoluene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Diphenylhydrazine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluoranthene | 0 | 0 | | 0 | 20 | 20.0 | 33.3 | |
| Fluorene | 0 | 0 | | 0 | 50 | 50.0 | 83.2 | |
| Hexachlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobutadiene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorocyclopentadiene | 0 | 0 | | 0 | 4 | 4.0 | 6.66 | |
| Hexachloroethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Indeno(1,2,3-cd)Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Isophorone | 0 | 0 | | 0 | 34 | 34.0 | 56.6 | |
| Naphthalene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Nitrobenzene | 0 | 0 | | 0 | 10 | 10.0 | 16.6 | |
| n-Nitrosodimethylamine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| n-Nitrosodi-n-Propylamine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| n-Nitrosodiphenylamine | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Phenanthrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Pyrene | 0 | 0 | | 0 | 20 | 20.0 | 33.3 | |
| 1,2,4-Trichlorobenzene | 0 | 0 | | 0 | 0.07 | 0.07 | 0.12 | |

☑ *CRL* CCT (min): 5.015 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

| Pollutants | Stream Conc | Stream CV | Trib Conc (µg/L) | Fate Coef | WQC (µg/L) | WQ Obj (µg/L) | WLA (µg/L) | Comments |
|---|---|---|---|---|---|---|---|---|
| Total Dissolved Solids (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloride (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Sulfate (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Aluminum | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Antimony | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Arsenic | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Barium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Boron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cadmium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Chromium (III) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexavalent Chromium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Cobalt | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Copper | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Free Cyanide | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dissolved Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Iron | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Lead | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Manganese | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Mercury | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Nickel | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Phenols (Phenolics) (PWS) | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Selenium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Silver | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Thallium | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Total Zinc | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Acrolein | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Acrylonitrile | 0 | 0 | | 0 | 0.06 | 0.06 | 0.33 | |
| Benzene | 0 | 0 | | 0 | 0.58 | 0.58 | 3.23 | |
| Bromoform | 0 | 0 | | 0 | 7 | 7.0 | 39.0 | |
| Carbon Tetrachloride | 0 | 0 | | 0 | 0.4 | 0.4 | 2.23 | |
| Chlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chlorodibromomethane | 0 | 0 | | 0 | 0.8 | 0.8 | 4.45 | |
| 2-Chloroethyl Vinyl Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chloroform | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dichlorobromomethane | 0 | 0 | | 0 | 0.95 | 0.95 | 5.29 | |
| 1,2-Dichloroethane | 0 | 0 | | 0 | 9.9 | 9.9 | 55.1 | |
| 1,1-Dichloroethylene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-Dichloropropane | 0 | 0 | | 0 | 0.9 | 0.9 | 5.01 | |
| 1,3-Dichloropropylene | 0 | 0 | | 0 | 0.27 | 0.27 | 1.5 | |
| Ethylbenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Methyl Bromide | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Methyl Chloride | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Methylene Chloride | 0 | 0 | | 0 | 20 | 20.0 | 111 | |
| 1,1,2,2-Tetrachloroethane | 0 | 0 | | 0 | 0.2 | 0.2 | 1.11 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene | 0 | 0 | | 0 | 10 | 10.0 | 55.7 | |
| Toluene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2-trans-Dichloroethylene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,1,1-Trichloroethane | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,1,2-Trichloroethane | 0 | 0 | | 0 | 0.55 | 0.55 | 3.06 | |
| Trichloroethylene | 0 | 0 | | 0 | 0.6 | 0.6 | 3.34 | |
| Vinyl Chloride | 0 | 0 | | 0 | 0.02 | 0.02 | 0.11 | |
| 2-Chlorophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4-Dichlorophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4-Dimethylphenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 4,6-Dinitro-o-Cresol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4-Dinitrophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Nitrophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 4-Nitrophenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| p-Chloro-m-Cresol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Pentachlorophenol | 0 | 0 | | 0 | 0.030 | 0.03 | 0.17 | |
| Phenol | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4,6-Trichlorophenol | 0 | 0 | | 0 | 1.5 | 1.5 | 8.35 | |
| Acenaphthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Anthracene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Benzidine | 0 | 0 | | 0 | 0.0001 | 0.0001 | 0.0006 | |
| Benzo(a)Anthracene | 0 | 0 | | 0 | 0.001 | 0.001 | 0.006 | |
| Benzo(a)Pyrene | 0 | 0 | | 0 | 0.0001 | 0.0001 | 0.0006 | |
| 3,4-Benzofluoranthene | 0 | 0 | | 0 | 0.001 | 0.001 | 0.006 | |
| Benzo(k)Fluoranthene | 0 | 0 | | 0 | 0.01 | 0.01 | 0.056 | |
| Bis(2-Chloroethyl)Ether | 0 | 0 | | 0 | 0.03 | 0.03 | 0.17 | |
| Bis(2-Chloroisopropyl)Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Bis(2-Ethylhexyl)Phthalate | 0 | 0 | | 0 | 0.32 | 0.32 | 1.78 | |
| 4-Bromophenyl Phenyl Ether | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Butyl Benzyl Phthalate | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2-Chloronaphthalene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Chrysene | 0 | 0 | | 0 | 0.12 | 0.12 | 0.67 | |
| Dibenzo(a,h)Anthrancene | 0 | 0 | | 0 | 0.0001 | 0.0001 | 0.0006 | |
| 1,2-Dichlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,3-Dichlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,4-Dichlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 3,3-Dichlorobenzidine | 0 | 0 | | 0 | 0.05 | 0.05 | 0.28 | |
| Diethyl Phthalate | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Dimethyl Phthalate | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Di-n-Butyl Phthalate | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 2,4-Dinitrotoluene | 0 | 0 | | 0 | 0.05 | 0.05 | 0.28 | |
| 2,6-Dinitrotoluene | 0 | 0 | | 0 | 0.05 | 0.05 | 0.28 | |
| 1,2-Diphenylhydrazine | 0 | 0 | | 0 | 0.03 | 0.03 | 0.17 | |
| Fluoranthene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Fluorene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachlorobenzene | 0 | 0 | | 0 | 0.00008 | 0.00008 | 0.0004 | |
| Hexachlorobutadiene | 0 | 0 | | 0 | 0.01 | 0.01 | 0.056 | |
| Hexachlorocyclopentadiene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Hexachloroethane | 0 | 0 | | 0 | 0.1 | 0.1 | 0.56 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-cd)Pyrene | 0 | 0 | | 0 | 0.001 | 0.001 | 0.006 | |
| Isophorone | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Naphthalene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Nitrobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| n-Nitrosodimethylamine | 0 | 0 | | 0 | 0.0007 | 0.0007 | 0.004 | |
| n-Nitrosodi-n-Propylamine | 0 | 0 | | 0 | 0.005 | 0.005 | 0.028 | |
| n-Nitrosodiphenylamine | 0 | 0 | | 0 | 3.3 | 3.3 | 18.4 | |
| Phenanthrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| Pyrene | 0 | 0 | | 0 | N/A | N/A | N/A | |
| 1,2,4-Trichlorobenzene | 0 | 0 | | 0 | N/A | N/A | N/A | |

☑ ***Recommended WQBELs & Monitoring Requirements***

**No. Samples/Month:** 4

| | *Mass Limits* | | *Concentration Limits* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Pollutants | AML (lbs/day) | MDL (lbs/day) | AML | MDL | IMAX | Units | Governing WQBEL | WQBEL Basis | Comments |
| Total Aluminum | Report | Report | Report | Report | Report | µg/L | 800 | AFC | Discharge Conc > 10% WQBEL (no RP) |
| Total Copper | Report | Report | Report | Report | Report | µg/L | 24.2 | AFC | Discharge Conc > 10% WQBEL (no RP) |
| Dissolved Iron | Report | Report | Report | Report | Report | µg/L | 499 | THH | Discharge Conc > 10% WQBEL (no RP) |
| Total Zinc | Report | Report | Report | Report | Report | µg/L | 176 | AFC | Discharge Conc > 10% WQBEL (no RP) |
| | | | | | | | | | |

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

| Pollutants | Governing WQBEL | Units | Comments |
|---|---|---|---|
| Total Dissolved Solids (PWS) | N/A | N/A | PWS Not Applicable |
| Chloride (PWS) | N/A | N/A | PWS Not Applicable |
| Bromide | N/A | N/A | No WQS |
| Sulfate (PWS) | N/A | N/A | PWS Not Applicable |
| Total Antimony | N/A | N/A | Discharge Conc < TQL |
| Total Arsenic | N/A | N/A | Discharge Conc < TQL |
| Total Barium | 3,994 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Beryllium | N/A | N/A | No WQS |
| Total Boron | 2,663 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Cadmium | 0.6 | µg/L | Discharge Conc < TQL |
| Total Chromium (III) | 195 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Hexavalent Chromium | 17.3 | µg/L | Discharge Conc < TQL |
| Total Cobalt | 31.6 | µg/L | Discharge Conc < TQL |
| Free Cyanide | 6.66 | µg/L | Discharge Conc ≤ 25% WQBEL |
| Total Cyanide | N/A | N/A | No WQS |
| Total Iron | 2,497 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Lead | 8.56 | µg/L | Discharge Conc < TQL |
| Total Manganese | 1,664 | µg/L | Discharge Conc ≤ 10% WQBEL |

| | | | |
|---|---|---|---|
| Total Mercury | 0.083 | µg/L | Discharge Conc < TQL |
| Total Nickel | 119 | µg/L | Discharge Conc ≤ 10% WQBEL |
| Total Phenols (Phenolics) (PWS) | | µg/L | PWS Not Applicable |
| Total Selenium | 8.3 | µg/L | Discharge Conc < TQL |
| Total Silver | 7.72 | µg/L | Discharge Conc < TQL |
| Total Thallium | 0.4 | µg/L | Discharge Conc < TQL |
| Total Molybdenum | N/A | N/A | No WQS |
| Acrolein | 3.2 | µg/L | Discharge Conc < TQL |
| Acrylonitrile | 0.33 | µg/L | Discharge Conc < TQL |
| Benzene | 3.23 | µg/L | Discharge Conc < TQL |
| Bromoform | 39.0 | µg/L | Discharge Conc < TQL |
| Carbon Tetrachloride | 2.23 | µg/L | Discharge Conc < TQL |
| Chlorobenzene | 166 | µg/L | Discharge Conc ≤ 25% WQBEL |
| Chlorodibromomethane | 4.45 | µg/L | Discharge Conc < TQL |
| Chloroethane | N/A | N/A | No WQS |
| 2-Chloroethyl Vinyl Ether | 5,825 | µg/L | Discharge Conc < TQL |
| Chloroform | 9.49 | µg/L | Discharge Conc < TQL |
| Dichlorobromomethane | 5.29 | µg/L | Discharge Conc < TQL |
| 1,1-Dichloroethane | N/A | N/A | No WQS |
| 1,2-Dichloroethane | 55.1 | µg/L | Discharge Conc < TQL |
| 1,1-Dichloroethylene | 54.9 | µg/L | Discharge Conc < TQL |
| 1,2-Dichloropropane | 5.01 | µg/L | Discharge Conc < TQL |
| 1,3-Dichloropropylene | 1.5 | µg/L | Discharge Conc < TQL |
| 1,4-Dioxane | N/A | N/A | No WQS |
| Ethylbenzene | 113 | µg/L | Discharge Conc < TQL |
| Methyl Bromide | 166 | µg/L | Discharge Conc < TQL |
| Methyl Chloride | 9,154 | µg/L | Discharge Conc < TQL |
| Methylene Chloride | 111 | µg/L | Discharge Conc < TQL |
| 1,1,2,2-Tetrachloroethane | 1.11 | µg/L | Discharge Conc < TQL |
| Tetrachloroethylene | 55.7 | µg/L | Discharge Conc < TQL |
| Toluene | 94.9 | µg/L | Discharge Conc < TQL |
| 1,2-trans-Dichloroethylene | 166 | µg/L | Discharge Conc < TQL |
| 1,1,1-Trichloroethane | 1,015 | µg/L | Discharge Conc < TQL |
| 1,1,2-Trichloroethane | 3.06 | µg/L | Discharge Conc < TQL |
| Trichloroethylene | 3.34 | µg/L | Discharge Conc < TQL |
| Vinyl Chloride | 0.11 | µg/L | Discharge Conc < TQL |
| 2-Chlorophenol | 49.9 | µg/L | Discharge Conc < TQL |
| 2,4-Dichlorophenol | 16.6 | µg/L | Discharge Conc < TQL |
| 2,4-Dimethylphenol | 166 | µg/L | Discharge Conc < TQL |
| 4,6-Dinitro-o-Cresol | 3.33 | µg/L | Discharge Conc < TQL |
| 2,4-Dinitrophenol | 16.6 | µg/L | Discharge Conc < TQL |
| 2-Nitrophenol | 2,663 | µg/L | Discharge Conc < TQL |
| 4-Nitrophenol | 782 | µg/L | Discharge Conc < TQL |
| p-Chloro-m-Cresol | 171 | µg/L | Discharge Conc < TQL |
| Pentachlorophenol | 0.17 | µg/L | Discharge Conc < TQL |
| Phenol | 6,657 | µg/L | Discharge Conc < TQL |
| 2,4,6-Trichlorophenol | 8.35 | µg/L | Discharge Conc < TQL |
| Acenaphthene | 28.3 | µg/L | Discharge Conc < TQL |
| Acenaphthylene | N/A | N/A | No WQS |

| | | | |
|---|---|---|---|
| Anthracene | 499 | µg/L | Discharge Conc < TQL |
| Benzidine | 0.0006 | µg/L | Discharge Conc < TQL |
| Benzo(a)Anthracene | 0.006 | µg/L | Discharge Conc < TQL |
| Benzo(a)Pyrene | 0.0006 | µg/L | Discharge Conc < TQL |
| 3,4-Benzofluoranthene | 0.006 | µg/L | Discharge Conc < TQL |
| Benzo(ghi)Perylene | N/A | N/A | No WQS |
| Benzo(k)Fluoranthene | 0.056 | µg/L | Discharge Conc < TQL |
| Bis(2-Chloroethoxy)Methane | N/A | N/A | No WQS |
| Bis(2-Chloroethyl)Ether | 0.17 | µg/L | Discharge Conc < TQL |
| Bis(2-Chloroisopropyl)Ether | 333 | µg/L | Discharge Conc < TQL |
| Bis(2-Ethylhexyl)Phthalate | 1.78 | µg/L | Discharge Conc < TQL |
| 4-Bromophenyl Phenyl Ether | 89.9 | µg/L | Discharge Conc < TQL |
| Butyl Benzyl Phthalate | 0.17 | µg/L | Discharge Conc < TQL |
| 2-Chloronaphthalene | 1,331 | µg/L | Discharge Conc < TQL |
| 4-Chlorophenyl Phenyl Ether | N/A | N/A | No WQS |
| Chrysene | 0.67 | µg/L | Discharge Conc < TQL |
| Dibenzo(a,h)Anthrancene | 0.0006 | µg/L | Discharge Conc < TQL |
| 1,2-Dichlorobenzene | 266 | µg/L | Discharge Conc < TQL |
| 1,3-Dichlorobenzene | 11.7 | µg/L | Discharge Conc < TQL |
| 1,4-Dichlorobenzene | 250 | µg/L | Discharge Conc < TQL |
| 3,3-Dichlorobenzidine | 0.28 | µg/L | Discharge Conc < TQL |
| Diethyl Phthalate | 999 | µg/L | Discharge Conc < TQL |
| Dimethyl Phthalate | 832 | µg/L | Discharge Conc < TQL |
| Di-n-Butyl Phthalate | 33.3 | µg/L | Discharge Conc < TQL |
| 2,4-Dinitrotoluene | 0.28 | µg/L | Discharge Conc < TQL |
| 2,6-Dinitrotoluene | 0.28 | µg/L | Discharge Conc < TQL |
| Di-n-Octyl Phthalate | N/A | N/A | No WQS |
| 1,2-Diphenylhydrazine | 0.17 | µg/L | Discharge Conc < TQL |
| Fluoranthene | 33.3 | µg/L | Discharge Conc < TQL |
| Fluorene | 83.2 | µg/L | Discharge Conc < TQL |
| Hexachlorobenzene | 0.0004 | µg/L | Discharge Conc < TQL |
| Hexachlorobutadiene | 0.056 | µg/L | Discharge Conc < TQL |
| Hexachlorocyclopentadiene | 1.66 | µg/L | Discharge Conc < TQL |
| Hexachloroethane | 0.56 | µg/L | Discharge Conc < TQL |
| Indeno(1,2,3-cd)Pyrene | 0.006 | µg/L | Discharge Conc < TQL |
| Isophorone | 56.6 | µg/L | Discharge Conc < TQL |
| Naphthalene | 71.6 | µg/L | Discharge Conc < TQL |
| Nitrobenzene | 16.6 | µg/L | Discharge Conc < TQL |
| n-Nitrosodimethylamine | 0.004 | µg/L | Discharge Conc < TQL |
| n-Nitrosodi-n-Propylamine | 0.028 | µg/L | Discharge Conc < TQL |
| n-Nitrosodiphenylamine | 18.4 | µg/L | Discharge Conc < TQL |
| Phenanthrene | 1.66 | µg/L | Discharge Conc < TQL |
| Pyrene | 33.3 | µg/L | Discharge Conc < TQL |
| 1,2,4-Trichlorobenzene | 0.12 | µg/L | Discharge Conc < TQL |

## 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 | 542 | WEST BRANCH CHESTER CREEK | 4.680 | 215.00 | 10.29 | 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 | 1.85 | 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 |
|---|---|---|---|---|---|---|---|
| Concord Twp Cen | PA0055212 | 0.0000 | 0.0000 | 1.8000 | 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 | 20.00 | 2.00 | 0.00 | 1.50 |
| Dissolved Oxygen | 5.00 | 8.24 | 0.00 | 0.00 |
| NH3-N | 2.00 | 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 | 542 | WEST BRANCH CHESTER CREEK | 4.230 | 195.00 | 10.74 | 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 | 1.95 | 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 |
|---|---|---|---|---|---|---|---|
| | | 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 Hydrodynamic Outputs

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 03G | 542 | WEST 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** | | | | | | | | | | | | |
| 4.680 | 1.85 | 0.00 | 1.85 | 2.7846 | 0.00842 | .633 | 23.61 | 37.29 | 0.31 | 0.089 | 23.00 | 7.00 |
| **Q1-10 Flow** | | | | | | | | | | | | |
| 4.680 | 1.18 | 0.00 | 1.18 | 2.7846 | 0.00842 | NA | NA | NA | 0.28 | 0.097 | 23.51 | 7.00 |
| **Q30-10 Flow** | | | | | | | | | | | | |
| 4.680 | 2.52 | 0.00 | 2.52 | 2.7846 | 0.00842 | NA | NA | NA | 0.33 | 0.082 | 22.63 | 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 | | |

# WQM 7.0 D.O.Simulation

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 03G | 542 | WEST BRANCH CHESTER CREEK |

| RMI | Total Discharge Flow (mgd) | Analysis Temperature (°C) | Analysis pH |
|---|---|---|---|
| 4.680 | 1.800 | 23.004 | 7.000 |
| **Reach Width (ft)** | **Reach Depth (ft)** | **Reach WDRatio** | **Reach Velocity (fps)** |
| 23.611 | 0.633 | 37.294 | 0.310 |
| **Reach CBOD5 (mg/L)** | **Reach Kc (1/days)** | **Reach NH3-N (mg/L)** | **Reach Kn (1/days)** |
| 12.81 | 1.400 | 1.20 | 0.882 |
| **Reach DO (mg/L)** | **Reach Kr (1/days)** | **Kr Equation** | **Reach DO Goal (mg/L)** |
| 6.295 | 26.629 | Tsivoglou | 5 |
| **Reach Travel Time (days)** | | | |
| 0.089 | | | |

**Subreach Results**

| TravTime (days) | CBOD5 (mg/L) | NH3-N (mg/L) | D.O. (mg/L) |
|---|---|---|---|
| 0.009 | 12.63 | 1.19 | 6.51 |
| 0.018 | 12.45 | 1.18 | 6.69 |
| 0.027 | 12.28 | 1.17 | 6.84 |
| 0.035 | 12.10 | 1.16 | 6.95 |
| 0.044 | 11.93 | 1.16 | 7.05 |
| 0.053 | 11.76 | 1.15 | 7.13 |
| 0.062 | 11.60 | 1.14 | 7.19 |
| 0.071 | 11.43 | 1.13 | 7.25 |
| 0.080 | 11.27 | 1.12 | 7.30 |
| 0.089 | 11.11 | 1.11 | 7.34 |

# WQM 7.0 Wasteload Allocations

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 03G | 542 | WEST 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 |
|---|---|---|---|---|---|---|---|
| 4.680 | Concord Twp Ce | 7.52 | 4 | 7.52 | 4 | 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 |
|---|---|---|---|---|---|---|---|
| 4.680 | Concord Twp Ce | 1.59 | 2 | 1.59 | 2 | 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) | | |
| 4.68 | Concord Twp Cen | 20 | 20 | 2 | 2 | 5 | 5 | 0 | 0 |

## WQM 7.0 Effluent Limits

| SWP Basin | Stream Code | Stream Name |
|---|---|---|
| 03G | 542 | WEST 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) |
|---|---|---|---|---|---|---|---|
| 4.680 | Concord Twp Cen | PA0055212 | 0.000 | CBOD5 | 20 | | |
| | | | | NH3-N | 2 | 4 | |
| | | | | Dissolved Oxygen | | | 5 |

## Development of Effluent Limitations

| | | | |
|---|---|---|---|
| **Outfall No.** | 002 | **Design Flow (MGD)** | 0 |
| **Latitude** | 39º 52' 24.00" | **Longitude** | -75º 30' 41.00" |

**Wastewater Description:** Stormwater

The existing stormwater parameters, pH, CBOD5, COD, TSS, Oil and Grease, Fecal Coliform, TKN, Total Phosphorus and Dissolved Iron are carried over to the new permit. For TSS and COD, benchmark values are also incorporated in Part C condition in the draft permit. This requirement is consistent with the requirements of other similar dischargers in the area.

## Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: quarterly from the beginning of permit term and then annually

The dilution series used for the tests was: 100%, 80%, 60%, 30%, and 15%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 60%.

### WET Summary and Evaluation

| | |
|---|---|
| **Facility Name** | Concord Twp Central STP |
| **Permit No.** | PA0055212 |
| **Design Flow (MGD)** | 1.8 |
| **$Q_{7-10}$ Flow (cfs)** | 1.85 |
| **$PMF_a$** | 1 |
| **$PMF_c$** | 1 |

| | | Test Results (Pass/Fail) | | | |
|---|---|---|---|---|---|
| | | Test Date | Test Date | Test Date | Test Date |
| **Species** | **Endpoint** | 6/9/20 | 9/22/20 | 12/14/21 | 10/18/22 |
| Pimephales | Survival | Pass | Pass | Pass | Pass |

| | | Test Results (Pass/Fail) | | | |
|---|---|---|---|---|---|
| | | Test Date | Test Date | Test Date | Test Date |
| **Species** | **Endpoint** | 6/9/20 | 9/22/20 | 12/14/21 | 10/18/22 |
| Pimephales | Growth | Pass | Pass | Pass | Pass |

| | | Test Results (Pass/Fail) | | | |
|---|---|---|---|---|---|
| | | Test Date | Test Date | Test Date | Test Date |
| **Species** | **Endpoint** | 6/8/20 | 9/21/20 | 12/14/21 | 10/17/22 |
| Ceriodaphnia | Survival | Pass | Pass | Pass | Pass |

| | | Test Results (Pass/Fail) | | | |
|---|---|---|---|---|---|
| | | Test Date | Test Date | Test Date | Test Date |
| **Species** | **Endpoint** | 6/8/20 | 9/21/20 | 12/14/21 | 10/17/22 |
| Ceriodaphnia | Reproduction | Pass | Pass | Pass | Pass |

**Reasonable Potential?** NO

**Permit Recommendations**

| | |
|---|---|
| Test Type | Chronic |
| TIWC | 60 % Effluent |
| Dilution Series | 15, 30, 60, 80, 100 % Effluent |
| Permit Limit | None |
| Permit Limit Species | |

**NPDES Permit No. PA0055212**
**Concord Township Central STP**
**WET Limits**

Has reasonable potential been determined? ☐ YES ☒ NO

Will WET limits be established in the permit? ☐ YES ☒ NO

Based on the review of the recent WET results, test of significant toxicity (TST) was performed using DEP's WET Analysis Spreadsheet. No reasonable potential was determined, and no limits are recommended in the draft permit.
The standard WET condition based on the DEP WET SOP is incorporated in Part C of the draft permit.

Current WET limit is eliminated from the permit. New monitoring data constitutes new information and anti-backsliding exception applies here and thereby justifies the elimination of the current WET limit.

**Proposed Effluent Limitations and Monitoring Requirements**

**Outfall 001, Effective Period: Permit Effective Date through Start of Final Period.**

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Total Phosphorus | 30 | XXX | XXX | 2.0 | XXX | 4 | 2/week | 24-Hr Composite |

## Proposed Effluent Limitations and Monitoring Requirements

**Outfall 001, Effective Period: Start of Final Period through Permit Expiration Date**.

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Maximum | Instant. Maximum | | |
| Total Phosphorus (Apr 1 to Oct 31) | 15 | XXX | XXX | 1.0 | XXX | 2 | 2/week | 24-Hr Composite |
| Total Phosphorus (Nov 1 to Mar 31) | 30 | XXX | XXX | 2.0 | XXX | 4.0 | 2/week | 24-Hr Composite |

**Proposed Effluent Limitations and Monitoring Requirements**

**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 | Recorded |
| pH (S.U.) | XXX | XXX | 6.0 Inst Min | XXX | XXX | 9.0 | 1/day | Grab |
| Dissolved Oxygen | XXX | XXX | 5.0 Inst Min | Report | XXX | XXX | 1/day | Grab |
| Total Residual Chlorine (TRC) | XXX | XXX | XXX | 0.11 | XXX | 0.35 | 1/day | Grab |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) Nov 1 - Apr 30 | 375 | 600 | XXX | 25.0 | 40.0 | 50 | 2/week | 24-Hr Composite |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) May 1 - Oct 31 | 300 | 450 | XXX | 20.0 | 30.0 | 40 | 2/week | 24-Hr Composite |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Biochemical Oxygen Demand (BOD5) Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Total Suspended Solids | 450 | 675 | XXX | 30.0 | 45.0 | 60 | 2/week | 24-Hr Composite |
| Total Suspended Solids Raw Sewage Influent | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Total Dissolved Solids | 15012 | XXX | XXX | 1000.0 Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |
| Fecal Coliform (No./100 ml) Oct 1 - Apr 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 2/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 | | |
| Fecal Coliform (No./100 ml) May 1 - Sep 30 | XXX | XXX | XXX | 200 Geo Mean | XXX | 1000 | 2/week | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | XXX | Report | 1/month | Grab |
| Ultraviolet light intensity (µw/cm²) | XXX | XXX | Report | XXX | XXX | XXX | 1/day | Metered |
| Total Nitrogen | XXX | XXX | XXX | Report | XXX | XXX | 2/month | 24-Hr Composite |
| Ammonia-Nitrogen Nov 1 - Apr 30 | 90 | XXX | XXX | 6.0 | XXX | 12 | 2/week | 24-Hr Composite |
| Ammonia-Nitrogen May 1 - Oct 31 | 30 | XXX | XXX | 2.0 | XXX | 4 | 2/week | 24-Hr Composite |
| Copper, Total | 0.375 | 0.57 Daily Max | XXX | 0.025 | 0.038 Daily Max | 0.05 | 1/month | 24-Hr Composite |
| Aluminum, Total | Report Avg Qrtly | XXX | XXX | Report Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |
| Iron, Dissolved | Report Avg Qrtly | XXX | XXX | Report Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |
| Zinc, Total | Report Avg Qrtly | XXX | XXX | Report Avg Qrtly | XXX | XXX | 1/quarter | 24-Hr Composite |
| Toxicity, Chronic - Ceriodaphnia Survival (TUc) | XXX | XXX | XXX | Report Daily Max | XXX | XXX | See Permit | 24-Hr Composite |
| Toxicity, Chronic - Ceriodaphnia Reproduction (TUc) | XXX | XXX | XXX | Report Daily Max | XXX | XXX | See Permit | 24-Hr Composite |
| Toxicity, Chronic - Pimephales Survival (TUc) | XXX | XXX | XXX | Report Daily Max | XXX | XXX | See Permit | 24-Hr Composite |
| Toxicity, Chronic - Pimephales Growth (TUc) | XXX | XXX | XXX | Report Daily Max | XXX | XXX | See Permit | 24-Hr Composite |

**Proposed Effluent Limitations and Monitoring Requirements**

**Outfall 002, Effective Period: Permit Effective Date through Permit Expiration Date.**

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Average Weekly | Minimum | Average Monthly | Daily Maximum | Instant. Maximum | | |
| pH (S.U.) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Carbonaceous Biochemical Oxygen Demand (CBOD5) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Chemical Oxygen Demand (COD) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Total Suspended Solids | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Oil and Grease | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Fecal Coliform (No./100 ml) | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Total Kjeldahl Nitrogen | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Total Phosphorus | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |
| Iron, Dissolved | XXX | XXX | XXX | XXX | Report | XXX | 1/year | Grab |