

Application Type Renewal  
Facility Type Municipal  
Major / Minor Major

Application No. PA0027294  
APS ID 1109856  
Authorization ID 1477541

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

**Applicant and Facility Information**

|                           |  |                  |   |
|---------------------------|--|------------------|---|
| Applicant Name            | <b>Bristol Borough Water &amp; Sewer Authority</b> | Facility Name    | <b>Bristol Borough WPC Plant</b>        |
| Applicant Address         | 250 Pond Street<br>Bristol, PA 19007-4937          | Facility Address | 8 Maple Beach Road<br>Bristol, PA 19007 |
| Applicant Contact         | James Dillon                                       | Facility Contact | James Dillon                            |
| Applicant Phone           | (215) 788-3828                                     | Facility Phone   | (215) 788-3828                          |
| Client ID                 | 87477  | Site ID          | 263095                                  |
| Ch 94 Load Status         | Not Overloaded                                     | Municipality     | Bristol Borough                         |
| Connection Status         | No Limitations                                     | County           | Bucks                                   |
| Date Application Received | <u>March 4, 2024</u>                               | EPA Waived?      | No                                      |
| Date Application Accepted |  | If No, Reason    | Major NPDES Permit, TMDL Discharge      |
| Purpose of Application    | Permit renewal.                                    |                  |   |

**Summary of Review**

The applicant requests renewal of an NPDES permit to discharge 2.7 MGD of treated sewage from the sewage treatment plant into Otter Creek a tidal tributary to the Delaware River Estuary, Zone 2.

The treatment plant consists of grit chamber, bar screen, two (2) primary clarifiers, four (4) first stage trickling filters with rock media, six (6) rotating biological contactors, and two (2) secondary clarifiers, and chlorine disinfection. Following secondary clarification, disinfection occurs via flow paced chlorination equipment. After disinfection, scum dewatering takes place before effluent is discharged into Otter Creek, a tributary to Delaware River Estuary Zone 2. Sludge generated at facility is digested in an anaerobic digester. The plant includes a two-stage sludge anaerobic digestion system. The sludge is then removed as a liquid and disposed of at DELCORA WWTP.

The treatment plant serves Bristol Township and Bristol Borough.

Effluent limits for conventional parameters will remain the same in this permit renewal. The permit has CBOD5 limit of 17 mg/l based on FSOD allocation of 640 lbs/day for Bristol Borough WPC Plant by DRBC. Mass limits are calculated based on an annual average flow of 2.7 MGD. The DRBC Docket No. D-1969-066 CP-4 includes load limit for CBOD5 and % removal (88.5 %) requirement for CBOD5 in place of CBOD20 as in the previous permit. The Docket also includes effluent limit of 1000 mg/l for Total Dissolved Solids (TDS). Therefore, this permit renewal will continue with effluent limits for TDS and mass limit for CBOD5 in place of CBOD20. Based on the Discharge Monitoring Reports, the discharge is generally in compliance with all the parameters. We have revised the effluent limit for Ammonia to 20 mg/l from 35 mg/l for this permit renewal. DRBC is working on updating criteria for Ammonia in Delaware River. It appears from the e-DMRs that treatment plant can meet new Ammonia limit. We also have included monitoring requirement for E. Coli for this permit renewal and is consistent with SOP.

| Approve | Deny | Signatures  | Date       |
|---------|------|---|------------|
| X       |      | <i>Ketan Thaker</i><br>Ketan Thaker / Project Manager                         | 8/7/2024   |
| X       |      | <i>Pravin Patel</i><br>Pravin C. Patel, P.E. / Environmental Engineer Manager | 08/07/2024 |

**Summary of Review**

This permit renewal includes quarterly monitoring requirement for PFOA, PFOS, PFBS and HFPO-DA as all these four PFAS related compounds were detected in the effluent which is consistent with SOP. The permittee may discontinue monitoring for PFOA, PFOS, PFBS and HFPO-DA if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limit of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. Influent monitoring requirements for BOD5, CBOD5, and Total Suspended Solids (TSS) will continue for this permit renewal.

**Biomonitoring:** As per DRBC Toxic waste load allocation program for Delaware River Estuary Zone 2, Final WLA of 5.5 TUC has been allocated to Bristol Borough. The permittee submitted four WET Chronic test reports with renewal application and test results show no toxicity in the effluent. Monitoring requirements for Chronic Toxicity will continue in this permit renewal based on our SOP.

**PCB Minimization Plan:** On December 15, 2003, the U.S. EPA Regions 2 and 3 adopted a Total Maximum Daily Load (TMDL) for Polychlorinated Biphenyls (PCB) for Zones 2, 3, 4, and 5 for the tidal Delaware River. The TMDL requires that the facilities identified as discharging PCBs to Delaware River prepare and implement a PCB Waste Minimization and Reduction Program also known as Pollution Minimization Plan (PMP).

This facility has been identified as a Group 2 dischargers with a rank within those facilities which contribute 99 percent cumulative PCB loading to the Delaware River. The WLA for Total PCBs for Bristol Borough is 102.68 ug/day. The total effluent loadings for PCBs from 2003 and 2005 sampling results is 36828 ug/day. DRBC and PADEP need a reasonable amount of PCB effluent data to characterize PCB variability. Such data over a period of up to ten years will be used to develop a level of existing effluent quality (EEQ) for PCBs. Based on discussion with DRBC it was decided that the facilities in the top 99 percent cumulative PCBs loading to Delaware River should be required to collect a minimum of four samples (two dry and two wet weather samples) annually. Bristol Borough has implemented PMP for PCBs and has been submitting annual report as required under the permit.

**Pretreatment Program:** This facility does not have a pretreatment program as there are no significant industrial facilities contributing industrial waste into the treatment plant. There are three industrial users (Acme Uniforms, Urban Outfitters, Inc. and DOW-Union Carbide) which contribute very little amount of sewage and industrial waste into the Bristol Borough sewage treatment plant.

Bristol Borough and Bucks County received written notification on February 29, 2024 regarding application to PADEP.

Following are effluent limits:

| PARAMETER                   | EFFLUENT LIMITS (AV. MO in Mg/l) | BASIS                                    |
|-----------------------------|----------------------------------|--|
| CBOD5                       | 17                               | DRBC Docket D-1969-066-CP-4              |
| Ammonia-Nitrogen            | 20                               | BPJ                                      |
| Total Suspended Solids      | 30                               | 25 Pa Code 92a.47                        |
| Dissolved Oxygen            | 4.0 Minimum                      | BPJ                                      |
| Total Residual Chlorine     | 0.5                              | 25 Pa Code 92a.47-48,<br>TRC Spreadsheet |
| pH (SU)                     | 6.0 to 9.0 SU                    | 25 Pa Code 92a.47, 95.2                  |
| Fecal Coliform (No./100 ml) | 200 (Geo Mean)                   | 25 Pa Code 92a.47                        |
| Total Phosphorus            | Report                           | 25 Pa Code 92a.61                        |
| Total Nitrogen              | Report                           | 25 Pa Code 92a.61                        |
| Total Dissolved Solids      | 1000                             | DRBC Docket D-1969-066-CP-4              |
| CBOD5 % Removal             | 88.5 %                           | DRBC Docket D-1969-066-CP-4              |
| PCBs (Dry Weather) pg/l     | Report                           | DRBC Docket D-1969-066-CP-4              |
| PCBs (Wet Weather) pg/l     | Report                           | DRBC Docket D-1969-066-CP-4              |
| Chronic Toxicity (TUC)      | Report                           | DRBC Docket D-1969-066-CP-4              |
| E. Coli (No./100 ml)        | Report                           | 25 Pa Code 92a.61                        |
| PFOA (ng/L)                 | Report                           | SOP for PFAS related compounds           |
| PFOS (ng/L)                 | Report                           | SOP for PFAS related compounds           |
| PFBS (ng/L)                 | Report                           | SOP for PFAS related compounds           |
| HFPO-DA (ng/L)              | Report                           | SOP for PFAS related compounds           |

### Summary of Review

Sludge use and disposal description and location(s): The sludge is removed as liquid and disposed offsite via incineration at the DELCORA WWTP.

#### 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)            | 2.7                              |
| Latitude                                      | 40° 5' 24.45"                    | Longitude                    | -74° 51' 26.86"                  |
| Quad Name                                     |                                  | Quad Code                    |                                  |
| Wastewater Description:                       | Sewage Effluent                  |                              |                                  |
| Receiving Waters                              | Delaware River (WWF, MF)         | Stream Code                  |                                  |
| NHD Com ID                                    | 25474988                         | RMI                          |                                  |
| Drainage Area                                 |                                  | Yield (cfs/mi <sup>2</sup> ) |                                  |
| Q <sub>7-10</sub> Flow (cfs)                  |                                  | Q <sub>7-10</sub> Basis      |                                  |
| Elevation (ft)                                |                                  | Slope (ft/ft)                |                                  |
| Watershed No.                                 | 2-E                              | Chapter 93 Class.            | WWF, MF                          |
| Existing Use                                  |                                  | Existing Use Qualifier       |                                  |
| Exceptions to Use                             |                                  | Exceptions to Criteria       |                                  |
| Assessment Status                             | Impaired                         |                              |                                  |
| Cause(s) of Impairment                        | POLYCHLORINATED BIPHENYLS (PCBS) |                              |                                  |
| Source(s) of Impairment                       | SOURCE UNKNOWN                   |                              |                                  |
| TMDL Status                                   | Final                            | Name                         | Delaware River Estuary PCB TMDLs |
| Background/Ambient Data                       |                                  | Data Source                  |                                  |
| pH (SU)                                       |                                  |                              |                                  |
| Temperature (°F)                              |                                  |                              |                                  |
| Hardness (mg/L)                               |                                  |                              |                                  |
| Other:  |                                  |                              |                                  |
| Nearest Downstream Public Water Supply Intake |                                  |                              |                                  |
| PWS Waters                                    |                                  | Flow at Intake (cfs)         |                                  |
| PWS RMI                                       |                                  | Distance from Outfall (mi)   |                                  |

| Treatment Facility Summary                                |                            |                                |                     |                        |
|---|----------------------------|--------------------------------|---------------------|------------------------|
| <b>Treatment Facility Name:</b> Bristol Borough WPC Plant |                            |                                |                     |                        |
| <b>WQM Permit No.</b>                                     |                            | <b>Issuance Date</b>           |                     |                        |
| 0918404   |                            | 1/29/2019                      |                     |                        |
| 0915402   |                            | 5/1/2015                       |                     |                        |
| Waste Type  | Degree of Treatment        | Process Type                   | Disinfection        | Avg Annual Flow (MGD)  |
| Sewage  | Secondary                  | Trickling Filter with Settling | Gas Chlorine        | 2.7                    |
| Hydraulic Capacity (MGD)                                  | Organic Capacity (lbs/day) | Load Status                    | Biosolids Treatment | Biosolids Use/Disposal |
| 5.8   | 5100                       | Not Overloaded                 | Anaerobic Digestion | Landfill               |

**Whole Effluent Toxicity (WET)**

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

- For the permit renewal application (4 tests).
- Annual throughout the permit term.
- Quarterly throughout the permit term and a TIE/TRE was conducted.
- Other:

The dilution series used for the tests was: 100%, 57%, 14%, 7%, and 4%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 14.

The test results show all the Chronic Tests passed, there is no reasonable potential. Monitoring requirements for Chronic Toxicity will continue in this permit renewal based on our SOP.

| WET Summary and Evaluation    |                              |           |           |           |           |
|-------------------------------|------------------------------|-----------|-----------|-----------|-----------|
| Facility Name                 | Bristol Borough WPC Plant    |           |           |           |           |
| Permit No.                    | PA0027294                    |           |           |           |           |
| Design Flow (MGD)             | 2.7                          |           |           |           |           |
| Q <sub>7-10</sub> Flow (cfs)  | 25                           |           |           |           |           |
| PMF <sub>a</sub>              | 1                            |           |           |           |           |
| PMF <sub>c</sub>              | 1                            |           |           |           |           |
| Test Results (Pass/Fail)      |                              |           |           |           |           |
| Species                       | Endpoint                     | Test Date | Test Date | Test Date | Test Date |
| Ceriodaphnia                  | Survival                     | 11/25/19  | 11/10/20  | 2/8/22    | 12/12/22  |
| Ceriodaphnia                  | Reproduction                 | PASS      | PASS      | PASS      | PASS      |
| Test Results (Pass/Fail)      |                              |           |           |           |           |
| Species                       | Endpoint                     | Test Date | Test Date | Test Date | Test Date |
| Ceriodaphnia                  | Reproduction                 | 11/25/19  | 11/10/20  | 2/8/22    | 12/12/22  |
| Ceriodaphnia                  | Reproduction                 | PASS      | PASS      | PASS      | PASS      |
| Test Results (Pass/Fail)      |                              |           |           |           |           |
| Species                       | Endpoint                     | Test Date | Test Date | Test Date | Test Date |
| Pimephales                    | Growth                       | 11/26/19  | 11/10/20  | 2/8/22    | 12/13/22  |
| Pimephales                    | Growth                       | PASS      | PASS      | PASS      | PASS      |
| Test Results (Pass/Fail)      |                              |           |           |           |           |
| Species                       | Endpoint                     | Test Date | Test Date | Test Date | Test Date |
| Pimephales                    | Survival                     | 11/26/19  | 11/10/20  | 2/8/22    | 12/13/22  |
| Pimephales                    | Survival                     | PASS      | PASS      | PASS      | PASS      |
| Reasonable Potential?         | NO                           |           |           |           |           |
| <u>Permit Recommendations</u> |                              |           |           |           |           |
| Test Type                     | Chronic                      |           |           |           |           |
| TIWC                          | 14 % Effluent                |           |           |           |           |
| Dilution Series               | 4, 7, 14, 57, 100 % Effluent |           |           |           |           |
| Permit Limit                  | None                         |           |           |           |           |
| Permit Limit Species          |                              |           |           |           |           |

### TRC EVALUATION

| Input appropriate values in A3:A9 and D3:D9 |                                | Bristol Borough WPC Plant  |                                      |
|---|--------------------------------|--|--------------------------------------|
| 2500  | = Q stream (cfs)               | 0.5  | = CV Daily                           |
| 2.7   | = Q discharge (MGD)            | 0.5  | = CV Hourly                          |
| 30  | = no. samples                  | 1  | = AFC_Partial Mix Factor             |
| 0.3   | = Chlorine Demand of Stream    | 1  | = CFC_Partial Mix Factor             |
| 0   | = Chlorine Demand of Discharge | 15   | = AFC_Criteria Compliance Time (min) |
| 0.5   | = BAT/BPJ Value                | 720  | = CFC_Criteria Compliance Time (min) |
| 0   | = % Factor of Safety (FOS)     |  | =Decay Coefficient (K)               |
| Source                                      | Reference                      | AFC Calculations   | CFC Calculations                     |
| TRC   | 1.3.2.iii                      | WLA_afc = 190.950  | 1.3.2.iii                            |
| PENTOXSD TRG                                | 5.1a                           | LTAMULT_afc = 0.373  | 5.1c                                 |
| PENTOXSD TRG                                | 5.1b                           | LTA_afc= 71.153  | 5.1d                                 |
| Source                                      |                                | Effluent Limit Calculations  |                                      |
| PENTOXSD TRG                                | 5.1f                           | AML MULT = 1.231   |                                      |
| PENTOXSD TRG                                | 5.1g                           | AVG MON LIMIT (mg/l) = 0.500   | BAT/BPJ                              |
|   |                                | INST MAX LIMIT (mg/l) = 1.635  |                                      |
| WLA_afc                                     |                                | (.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...<br>...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100) |                                      |
| LTAMULT_afc                                 |                                | EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)   |                                      |
| LTA_afc                                     |                                | wla_afc*LTAMULT_afc  |                                      |
| WLA_cfc                                     |                                | (.011/e(-k*CFC_tc)) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...<br>...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100) |                                      |
| LTAMULT_cfc                                 |                                | EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)                                     |                                      |
| LTA_cfc                                     |                                | wla_cfc*LTAMULT_cfc  |                                      |
| AML_MULT                                    |                                | EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))                                     |                                      |
| AVG_MON_LIMIT                               |                                | MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)   |                                      |
| INST_MAX_LIMIT                              |                                | 1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)  |                                      |

Bristol Borough STP – PA0027294

**First Stage Oxygen Demand (FSOD)** which is also equal to CBOD20 (as per Ron Rulon of DRBC because it is the first stage of oxygen demand, before the nitrogenous oxygen demand applies), was approved by DRBC for the wastewater discharge from the Bristol Borough STP = 640 lbs/day as an average monthly loading.

Based on the data provided by the Authority we have:

$$\text{CBOD20/BOD5} = 1.44 \quad \text{1.}$$

Ron Rulon also used the following ratio to convert BOD5 to CBOD5:

BOD5/CBOD5 = 1.25 ..... 2.

Using the above two relationships we can say that:

**CBOD20/1.25 CBOD5 = 1.44**

Using CBOD<sub>20</sub> value of 640 lbs/day we have,

$$\text{CBOD}_5 = \frac{640}{1.25 \times 1.4}$$

$$= 365.7 \text{ lbs/day}$$

The concentration limits for CBOD5 based on an annual average flow of 2.7 mgd:

$$\text{CBOD5 mass loading} = 8.34 \times \text{Flow in mgdxCBOD5 concentration}$$

$$365.7 = 8.34 \times 2.7 \times \text{CBOD5}$$

$$\text{Therefore, CBOD5} = 365.7/8.34 \times 10$$

$$= 16.25 \text{ mg/l} \sim 17 \text{ mg/l}$$

Compliance History

DMR Data for Outfall 001 (from June 1, 2023 to May 31, 2024)

| Parameter  | MAY-24 | APR-24 | MAR-24 | FEB-24 | JAN-24 | DEC-23 | NOV-23 | OCT-23 | SEP-23 | AUG-23 | JUL-23 | JUN-23 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Flow (MGD)<br>Average Monthly                                      | 1.409  | 2.248  | 2.261  | 1.747  | 2.122  | 1.659  | 1.167  | 1.316  | 1.383  | 1.262  | 1.372  | 1.357  |
| Flow (MGD)<br>Daily Maximum  | 1.752  | 3.670  | 3.353  | 2.138  | 2.824  | 2.554  | 1.471  | 1.639  | 1.859  | 1.647  | 1.647  | 2.022  |
| pH (S.U.)<br>Instantaneous<br>Minimum                              | 6.88   | 6.40   | 6.68   | 6.43   | 6.36   | 6.31   | 6.20   | 6.20   | 6.36   | 6.37   | 6.42   | 6.57   |
| pH (S.U.)<br>Instantaneous<br>Maximum                              | 7.34   | 7.16   | 7.09   | 7.03   | 7.08   | 6.95   | 7.14   | 7.05   | 6.93   | 7.05   | 7.00   | 7.05   |
| DO (mg/L)<br>Instantaneous<br>Minimum                              | 8.17   | 8.49   | 9.18   | 8.20   | 8.37   | 8.26   | 8.34   | 7.99   | 7.50   | 7.56   | 7.19   | 7.62   |
| TRC (mg/L)<br>Average Monthly                                      | 0.32   | 0.39   | 0.36   | 0.23   | 0.40   | 0.35   | 0.39   | 0.29   | 0.32   | 0.31   | 0.26   | 0.29   |
| TRC (mg/L)<br>Instantaneous<br>Maximum                             | 0.57   | 0.73   | 0.46   | 0.34   | 0.55   | 0.50   | 0.72   | 0.51   | 0.58   | 0.52   | 0.44   | 0.40   |
| CBOD5 (lbs/day)<br>Average Monthly                                 | 57.6   | 90.0   | 81.7   | 101.4  | 87.4   | 71.5   | 45.6   | 44.5   | 35.7   | 36.8   | 52.1   | 46.1   |
| CBOD5 (lbs/day)<br>Raw Sewage Influent<br><br/> Average<br>Monthly | 1673.5 | 2192.9 | 1754.4 | 1703.5 | 1700.5 | 2197.7 | 1937.0 | 2045.7 | 1826.9 | 1633.1 | 2167.5 | 1687.1 |
| CBOD5 (lbs/day)<br>Weekly Average                                  | 65.0   | 163.9  | 92.2   | 122.1  | 123.5  | 97.4   | 64.0   | 50.3   | 39.5   | 41.1   | 58.8   | 56.1   |
| CBOD5 (mg/L)<br>Average Monthly                                    | 4.9    | 4.4    | 4.3    | 7.1    | < 4.8  | 4.9    | 4.4    | 4.0    | 3.1    | 3.5    | 4.3    | 3.9    |
| CBOD5 (mg/L)<br>Raw Sewage Influent<br><br/> Average<br>Monthly    | 125.1  | 102.2  | 86.4   | 108.8  | 88.0   | 142.9  | 171.7  | 166.4  | 141.3  | 138.4  | 156.8  | 131.9  |
| CBOD5 (mg/L)<br>Weekly Average                                     | 5.5    | 6.0    | 4.5    | 8.9    | 7.5    | 5.5    | 5.5    | 4.5    | 3.5    | 4.0    | 4.5    | 4.5    |

NPDES Permit Fact Sheet  
Bristol Borough WPC Plant

NPDES Permit No. PA0027294

|   |       |       |       |        |       |        |       |       |        |       |       |        |
|---|-------|-------|-------|--------|-------|--------|-------|-------|--------|-------|-------|--------|
| BOD5 (lbs/day)<br>Raw Sewage Influent<br><br/> Average<br>Monthly             | 1987  | 2576  | 2215  | 2172   | 2190  | 2585   | 2265  | 2367  | 2204   | 1900  | 2463  | 1992   |
| BOD5 (mg/L)<br>Raw Sewage Influent<br><br/> Average<br>Monthly                | 148.6 | 120.6 | 108.1 | 138.1  | 114.0 | 167.8  | 200.4 | 192.0 | 170.0  | 161.4 | 178.3 | 155.1  |
| CBOD5 % Removal<br>(%)<br>Percent Removal<br><br/> Minimum<br>Monthly Average | 95.35 | 91.30 | 94.59 | 93.50  | 94.25 | 94.85  | 97.44 | 97.32 | 96.84  | 96.40 | 96.75 | 95.16  |
| TSS (lbs/day)<br>Average Monthly  | 61.2  | 130.2 | 115.8 | 144.0  | 162.0 | 130.2  | 44.2  | 61.1  | 38.5   | 56.3  | 94.1  | 70.8   |
| TSS (lbs/day)<br>Raw Sewage Influent<br><br/> Average<br>Monthly              | 3083  | 3324  | 1516  | 2300   | 3786  | 3706   | 2320  | 2784  | 3350   | 3415  | 4689  | 3560   |
| TSS (lbs/day)<br>Weekly Average   | 138.7 | 167.4 | 250.6 | 216.7  | 228.8 | 193.5  | 69.7  | 101.2 | 60.4   | 62.6  | 145.6 | 106.7  |
| TSS (mg/L)<br>Average Monthly   | 5.0   | 6.8   | 6.5   | 10.0   | 8.8   | 9.0    | 4.2   | 5.4   | < 3.3  | 5.5   | 7.8   | 5.8    |
| TSS (mg/L)<br>Raw Sewage Influent<br><br/> Average<br>Monthly                 | 230.2 | 155.8 | 72.0  | 146.0  | 196.8 | 241.0  | 200.2 | 224.2 | 255.8  | 288.4 | 341.5 | 292.0  |
| TSS (mg/L)<br>Weekly Average  | 10.0  | 8.0   | 15.5  | 16.0   | 14.0  | 11.5   | 7.0   | 9.0   | 4.5    | 6.0   | 12.5  | 7.0    |
| Total Dissolved Solids<br>(lbs/day)<br>Average Quarterly                      |       |       |       | 4908.8 |       | 3117.7 |       |       | 7168.2 |       |       | 2787.2 |
| Total Dissolved Solids<br>(lbs/day)<br>Daily Maximum                          |       |       |       | 4908.8 |       | 3117.7 |       |       | 7168.2 |       |       | 2787.2 |
| Total Dissolved Solids<br>(mg/L)<br>Average Quarterly                         |       |       |       | 344.0  |       | 264.0  |       |       | 626.0  |       |       | 242.0  |
| Total Dissolved Solids<br>(mg/L)<br>Daily Maximum                             |       |       |       | 344.0  |       | 264.0  |       |       | 626.0  |       |       | 242.0  |
| Fecal Coliform<br>(No./100 ml)<br>Geometric Mean                              | < 2.7 | < 2.7 | < 2.2 | < 3.9  | < 1   | < 1.3  | < 2.9 | < 9.7 | < 3.9  | < 2.4 | < 2.3 | < 2    |

|  |      |      |       |      |      |        |       |      |        |       |      |        |
|--|------|------|-------|------|------|--------|-------|------|--------|-------|------|--------|
| Fecal Coliform<br>(No./100 ml)<br>Instantaneous<br>Maximum           | 180  | 24   | 120   | 11   | 6    | 10     | 12    | 140  | 15     | 200   | 8    | 8      |
| Total Nitrogen<br>(lbs/day)<br>Average Quarterly                     |      |      | 27.68 |      |      | 151.87 |       |      | 184.82 |       |      | 175.64 |
| Total Nitrogen (mg/L)<br>Average Quarterly                           |      |      |       | 1.94 |      |        | 12.86 |      |        | 16.14 |      | 15.25  |
| Ammonia (lbs/day)<br>Average Monthly                                 | 3.7  | 8.9  | 10.0  | 9.9  | 14.1 | 12.7   | 8.5   | 6.3  | 4.2    | 3.9   | 3.3  | 5.98   |
| Ammonia (mg/L)<br>Average Monthly                                    | 0.31 | 0.43 | 0.51  | 0.68 | 0.77 | 0.86   | 0.82  | 0.56 | 0.36   | 0.38  | 0.28 | 0.50   |
| Total Phosphorus<br>(lbs/day)<br>Average Quarterly                   |      |      | 20.0  |      |      | 11.9   |       |      | 14.7   |       |      | 24.2   |
| Total Phosphorus<br>(mg/L)<br>Average Quarterly                      |      |      |       | 1.4  |      |        | 1.01  |      |        | 1.28  |      | 2.10   |
| PCBs (Dry Weather)<br>(pg/L)<br>Daily Maximum                        |      |      |       |      |      | FF     |       |      |        |       |      | 8660   |
| PCBs (Wet Weather)<br>(pg/L)<br>Daily Maximum                        |      |      |       |      |      | FF     |       |      |        |       |      | 6850   |
| Chronic WET -<br>Ceriodaphnia Survival<br>(TUC)<br>Daily Maximum     |      |      | 1.0   |      |      | E      |       |      | GG     |       |      | GG     |
| Chronic WET -<br>Ceriodaphnia<br>Reproduction (TUC)<br>Daily Maximum |      |      |       | 1.0  |      | E      |       |      | GG     |       |      | GG     |
| Chronic WET -<br>Pimephales Survival<br>(TUC)<br>Daily Maximum       |      |      |       | 1.0  |      | E      |       |      | GG     |       |      | GG     |
| Chronic WET -<br>Pimephales Growth<br>(TUC)<br>Daily Maximum         |      |      |       | 1.0  |      | E      |       |      | GG     |       |      | GG     |

**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) <sup>(1)</sup> |                     | Concentrations (mg/L)   |                     |                |                  | Minimum <sup>(2)</sup> Measurement Frequency | Required Sample Type |
|   | Average Monthly                     | Weekly Average      | Minimum Monthly Average | Average Monthly     | Daily Maximum  | Instant. Maximum |  |                      |
| Flow (MGD)                                    | Report                              | Report Daily Max    | XXX                     | XXX                 | XXX            | XXX              | Continuous                                   | Recorded             |
| pH (S.U.)                                     | XXX                                 | XXX                 | 6.0<br>Inst Min         | XXX                 | XXX            | 9.0              | 1/day  | Grab                 |
| DO  | XXX                                 | XXX                 | 4.0<br>Inst Min         | XXX                 | XXX            | XXX              | 1/day  | Grab                 |
| TRC   | XXX                                 | XXX                 | XXX                     | 0.5                 | XXX            | 1.6              | 1/day  | Grab                 |
| CBOD5   | 366                                 | 549                 | XXX                     | 17                  | 26<br>Wkly Avg | 34               | 2/week                                       | 24-Hr Composite      |
| CBOD5<br>Raw Sewage Influent                  | Report                              | XXX                 | XXX                     | Report              | XXX            | XXX              | 2/week                                       | 24-Hr Composite      |
| BOD5<br>Raw Sewage Influent                   | Report                              | XXX                 | XXX                     | Report              | XXX            | XXX              | 2/week                                       | 24-Hr Composite      |
| CBOD5 % Removal (%)<br>Percent Removal        | XXX                                 | XXX                 | 88.50                   | XXX                 | XXX            | XXX              | 2/week                                       | 24-Hr Composite      |
| TSS   | 676                                 | 1013                | XXX                     | 30                  | 45<br>Wkly Avg | 60               | 2/week                                       | 24-Hr Composite      |
| TSS<br>Raw Sewage Influent                    | Report                              | XXX                 | XXX                     | Report              | XXX            | XXX              | 2/week                                       | 24-Hr Composite      |
| Total Dissolved Solids                        | Report<br>Avg Qrtly                 | Report<br>Daily Max | XXX                     | 1000.0<br>Avg Qrtly | 2000.0         | 2500             | 1/quarter                                    | 24-Hr Composite      |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30 | XXX                                 | XXX                 | XXX                     | 200<br>Geo Mean     | XXX            | 1000             | 2/week                                       | Grab                 |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30 | XXX                                 | XXX                 | XXX                     | 200<br>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) <sup>(1)</sup> |                | Concentrations (mg/L)   |                  |               |                  | Minimum <sup>(2)</sup><br>Measurement Frequency | Required Sample Type |
|   | Average Monthly                     | Weekly Average | Minimum Monthly Average | Average Monthly  | Daily Maximum | Instant. Maximum |   |                      |
| E. Coli (No./100 ml)                          | XXX                                 | XXX            | XXX                     | XXX              | XXX           | Report           | 1/month   | Grab                 |
| Total Nitrogen                                | Report Avg Qrtly                    | XXX            | XXX                     | Report Avg Qrtly | XXX           | XXX              | 1/quarter                                       | 24-Hr Composite      |
| Ammonia                                       | 450                                 | XXX            | XXX                     | 20.0             | XXX           | 40               | 2/week  | 24-Hr Composite      |
| Total Phosphorus                              | Report Avg Qrtly                    | XXX            | XXX                     | Report Avg Qrtly | XXX           | XXX              | 1/quarter                                       | 24-Hr Composite      |
| PCBs (Dry Weather) (pg/L)                     | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/6 months                                      | 24-Hr Composite      |
| PCBs (Wet Weather) (pg/L)                     | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/6 months                                      | 24-Hr Composite      |
| PFOA (ng/L)                                   | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/quarter                                       | Grab                 |
| PFOS (ng/L)                                   | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/quarter                                       | Grab                 |
| PFBS (ng/L)                                   | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/quarter                                       | Grab                 |
| HFPO-DA (ng/L)                                | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | 1/quarter                                       | Grab                 |
| Chronic WET - Ceriodaphnia Survival (TUC)     | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | See Permit                                      | 24-Hr Composite      |
| Chronic WET - Ceriodaphnia Reproduction (TUC) | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | See Permit                                      | 24-Hr Composite      |
| Chronic WET - Pimephales Survival (TUC)       | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | See Permit                                      | 24-Hr Composite      |
| Chronic WET - Pimephales Growth (TUC)         | XXX                                 | XXX            | XXX                     | XXX              | Report        | XXX              | See Permit                                      | 24-Hr Composite      |

