pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Southcentral Regional Office**
**CLEAN WATER PROGRAM**

| | | | |
|---|---|---|---|
| Application Type | **Renewal** | Application No. | **PA0020923** |
| Facility Type | **Municipal** | APS ID | **3418** |
| Major / Minor | **Major** | Authorization ID | **1333681** |

# NPDES PERMIT FACT SHEET
# INDIVIDUAL SEWAGE

## Applicant and Facility Information

| | | | |
|---|---|---|---|
| Applicant Name | **New Oxford Municipal Authority**<br>**Adams County** | Facility Name | **New Oxford STP** |
| Applicant Address | 409 Water Works Road<br>New Oxford, PA 17350-1511 | Facility Address | 106 Tracey Avenue<br>New Oxford, PA 17350-1000 |
| Applicant Contact | Adam Winters | Facility Contact | Adam Winters |
| Applicant Phone | (717) 624-9399 | Facility Phone | (717) 624-9399 |
| Client ID | 28744 | Site ID | 252254 |
| Ch 94 Load Status | Not Overloaded | Municipality | New Oxford Borough |
| Connection Status | No Limitations | County | Adams |
| Date Application Received | November 17, 2020 | EPA Waived? | No |
| Date Application Accepted | November 19, 2020 | If No, Reason | Major Facility, Significant CB Discharge |
| Purpose of Application | NPDES permit renewal. | | |

## Summary of Review

New Oxford Municipal Authority has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its NPDES permit. The permit was reissued on May 23, 2016 and became effective on June 1, 2016. The permit expired on May 31, 2021 but the terms and conditions of the permit have been extended since that time.

This report has been developed for the renewal of the NPDES permit New Oxford Municipal Authority's STP. The facility has an average annual design flow of 1.788 MGD and a hydraulic design capacity of 2.682 MGD. The organic design capacity is 6,681 lbs/day.

In order of percent contribution, this facility serves the areas of New Oxford Borough (60%), Oxford Township (36%), and Hamilton Township (4%). The 2020 application lists a total of five industrial contributors to the sewer system – an aluminum foundry, a turkey slaughterer/processor, a shipping container and packaging manufacturer, a perishable prepared food manufacturer, and a paper tube and core manufacturer.

WQM No. 0107402 was originally issued on 9/24/2007, and WQM No. 0107402 A-1 was issued on 9/20/2018 to increase the organic loading capacity from 4,846 lbs $BOD_5$ /day to 6,681 lbs/day and redefine the treatment system from Modified Extended Aeration Process to Modified Combined Carbon Oxidation-Nitrification Process.

Sludge use and disposal description and location(s): N/A due to the sludge is hauled away by Synagro Central, LLC.

Changes from the previous permit: Unit of Fecal Coliform changed from CFU/100 ml to No./100 ml. The E. Coli. monitoring and report requirements will add to the permit. The summer average monthly $CBOD_5$ limit in the proposed permit was changed from 15.0 mg/L to 12.0 mg/L (weekly average & IMAX limits changed to 18.0 mg/L & 24.0 mg/L).

Based on the review outline in this fact sheet, it is recommended that the permit be drafted and published in the Pennsylvania Bulletin for public comments for 30 days.

| Approve | Deny | Signatures | Date |
|---|---|---|---|
| X | | *Hilaryle*<br>Hilary H. Le / Environmental Engineering Specialist | August 27, 2021 |
| X | | Daniel W. Martin<br>Daniel W. Martin, P.E. / Environmental Engineer Manager | September 23, 2021 |

| Discharge, Receiving Waters and Water Supply Information | | | |
|---|---|---|---|
| Outfall No. | 001 | Design Flow (MGD) | 1.788 |
| Latitude | 39º 52' 12.35" | Longitude | -77º 4' 6.21" |
| Quad Name | McShrrystown | Quad Code | |
| Wastewater Description: | Sewage Effluent | | |
| Receiving Waters | South Branch Conewago Creek (WWF) | Stream Code | 08813 |
| NHD Com ID | 57473293 | RMI | 3.36 miles |
| Drainage Area | 67.8 mi.$^2$ | Yield (cfs/mi$^2$) | 0.055 |
| $Q_{7-10}$ Flow (cfs) | 3.76 | $Q_{7-10}$ Basis | USGS StreamStats |
| Elevation (ft) | 464 | Slope (ft/ft) | |
| Watershed No. | 7-F | Chapter 93 Class. | WWF |
| Existing Use | | Existing Use Qualifier | |
| Exceptions to Use | | Exceptions to Criteria | |
| Assessment Status | Attaining Use(s) | | |
| Cause(s) of Impairment | | | |
| Source(s) of Impairment | | | |
| TMDL Status | | Name | |
| Nearest Downstream Public Water Supply Intake | Wrightsville Water Supply Co., York County | | |
| PWS Waters | Susquehanna River | Flow at Intake (cfs) | |
| PWS RMI | 29 miles | Distance from Outfall (mi) | Approximate 67 miles |

Changes Since Last Permit Issuance: none

**Drainage Area**
The discharge is to South Branch Conewago Creek at RMI 3.36 mile. A drainage area upstream of the discharge is estimated to be 67.8 mi.$^2$, according to USGS StreamStats available at https://streamstats.usgs.gov/ss/.

**Stream Flow**
According to StreamStats, the point of first use has a $Q_{7-10}$ of 3.76 cfs and a drainage area of 67.8 mi$^2$, which results in a $Q_{7-10}$ low flow yield of 0.055 cfs/mi$^2$. This information is used to obtain a chronic or 30-day ($Q_{30-10}$), and an acute or 1-day ($Q_{1-10}$) exposure stream flow for the discharge point as follows (Guidance No. 391-2000-023):

$Q_{7-10}$ = 3.76 cfs
Low Flow Yield = 3.76 cfs / 67.8 mi$^2$ = 0.055 cfs/mi$^2$
$Q_{30-10}$ = 1.36 * 3.76 cfs = 5.11 cfs
$Q_{1-10}$ = 0.64 * 3.76 cfs = 2.41 cfs

The resulting $Q_{7-10}$ dilution ratio is: $Q_{stream}$ / $Q_{discharge}$ = 3.76 cfs / [1.788 MGD * (1.547 cfs/MGD)] = 1.36:1

**South Branch Conewago Creek**
25 Pa. Code § 93.9o classifies South Branch Conewago Creek as Warm Water Fishes (WWF) surface water. Based on the 2020 Integrated Report, South Branch Conewago Creek, assessment unit IDs 18831 & 18586, is not impaired. A TMDL currently does not exist for this stream segment, therefore, no TMDL has been taken into consideration during this review.

**Public Water Supply**
The nearest downstream public water supply intake is the Wrightsville Water Supply Co. on Susquehanna River in York County, approximately 67 miles downstream of this discharge. Given the nature and dilution, the discharge is not expected to significantly impact the water supply.

| Treatment Facility Summary | | | | |
|---|---|---|---|---|
| **Treatment Facility Name:** New Oxford Municipal Authority WWTP | | | | |
| **WQM Permit No.** | **Issuance Date** | | | |
| 0107402 | 9/24/2007 | | | |
| 0107402 A-1 | 9/20/2018 | | | |
| **Waste Type** | **Degree of Treatment** | **Process Type** | **Disinfection** | **Avg Annual Flow (MGD)** |
| Sewage | Secondary | Activated Sludge | Chlorine With Dechlorination | 1.788 |
| | | | | |
| **Hydraulic Capacity (MGD)** | **Organic Capacity (lbs/day)** | **Load Status** | **Biosolids Treatment** | **Biosolids Use/Disposal** |
| 2.682 | 6,681 | Not Overloaded | | |

Changes Since Last Permit Issuance: none

The overall WWTP train is as follows:

Bar Screen (1) ⇒ Grit/Grease Removal Unit (1) ⇒ Aeration/Anoxic Tanks (2) ⇒ Clarifiers (2) ⇒ Chlorine Contact Tank (1) ⇒ Discharge

The system incorporates the chemical additions of chlorine gas (for disinfection), sulfur dioxide gas (for dechlorination), and aluminum sulfate (for phosphorus removal). A polymer is used as a sludge thickening agent.

Also on site are a sludge digester, centrifuge, and de-watering apparatus.

| Compliance History | |
|---|---|
| **Summary of DMRs:** | The DMRs reported from July 1, 2020 to June 30, 2021 are summarized in the Table below (Pages # 4, 5, & 6). |
| **Summary of Inspections:** | 4/29/2020: Mr. Bettinger, DEP's WQS, conducted an administrative inspection due to pandemic. There were no violations noted during the inspection.<br><br>11/25/2019: Mr. Bettinger & Mr. Benham, SCRO DEP's inspectors, conducted a compliance evaluation inspection. There was recommendation to ensure gas cylinders at all times are prevented from falling. The field test results were within permitted limits. There were no violations identified during inspection.<br><br>3/15/2018: Mr. Bowen & Ms. Tomtishen, SCRO DEP's inspectors, conducted a compliance evaluation inspection. There were recommendations to complete influent sampler wiring to make composite sample flow proportional and record disposal location on hauled-in municipal waste form. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection.<br><br>1/3/2017: Mr. Haines, DEP's WQS, conducted a compliance evaluation inspection. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection.<br><br>9/13/2016: Mr. Haines, DEP's WQS, conducted a compliance evaluation inspection. There were recommendations to complete annual stormwater reporting, use current supplemental forms, adjust aliquot volume of composite samples, and ensure preservation temp of 6 $^0$C or less during composite sample collection. The field test results were within permitted limits. Effluent appeared clear. There were no violations identified during inspection. |
| **Other Comments:** | There are no open violations against the facility or the permittee. |

## Compliance History

**DMR Data for Outfall 001 (from July 1, 2020 to June 30, 2021)**

| Parameter | JUN-21 | MAY-21 | APR-21 | MAR-21 | FEB-21 | JAN-21 | DEC-20 | NOV-20 | OCT-20 | SEP-20 | AUG-20 | JUL-20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flow (MGD) Average Monthly | 1.216 | 1.248 | 1.277 | 1.519 | 1.709 | 1.346 | 1.566 | 1.160 | 1.134 | 1.046 | 1.337 | 1.057 |
| Flow (MGD) Daily Maximum | 1.835 | 1.731 | 1.635 | 3.201 | 3.232 | 1.864 | 4.413 | 1.933 | 1.863 | 1.415 | 2.786 | 1.345 |
| pH (S.U.) Daily Minimum | 7.12 | 7.1 | 7.08 | 6.94 | 6.90 | 7.01 | 6.99 | 7.02 | 7.10 | 7.04 | 7.04 | 7.06 |
| pH (S.U.) Instantaneous Maximum | 7.36 | 7.3 | 7.26 | 7.14 | 7.18 | 7.16 | 7.23 | 7.26 | 7.25 | 7.26 | 7.25 | 7.38 |
| DO (mg/L) Daily Minimum | 5.75 | 5.7 | 5.16 | 7.22 | 6.14 | 6.61 | 6.55 | 6.30 | 5.72 | 5.51 | 5.31 | 5.44 |
| TRC (mg/L) Average Monthly | 0.12 | 0.08 | 0.07 | 0.09 | 0.05 | 0.05 | 0.04 | 0.05 | 0.10 | 0.05 | 0.04 | 0.07 |
| TRC (mg/L) Instantaneous Maximum | 0.59 | 0.40 | 0.24 | 0.43 | 0.42 | 0.23 | 0.12 | 0.14 | 0.14 | 0.12 | 0.13 | 0.25 |
| CBOD5 (lbs/day) Average Monthly | 32 | 34 | 33 | 43 | 45 | 36 | 38 | 30 | 30 | 32 | 37 | 29 |
| CBOD5 (lbs/day) Weekly Average | 34 | 37 | 37 | 72 | 64 | 45 | 44 | 36 | 34 | 40 | 56 | 34 |
| CBOD5 (mg/L) Average Monthly | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| CBOD5 (mg/L) Weekly Average | 3.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 |
| BOD5 (lbs/day) Raw Sewage Influent Average Monthly | 2898 | 2356 | 2666 | 2906 | 3929 | 2624 | 2541 | 2105 | 2398 | 2536 | 2617 | 2108 |
| BOD5 (lbs/day) Raw Sewage Influent Daily Maximum | 4224 | 3058 | 4139 | 4199 | 6032 | 3577 | 4201 | 2854 | 3311 | 3355 | 3096 | 3480 |
| BOD5 (mg/L) Raw Sewage Influent Average Monthly | 268 | 201 | 234 | 230 | 282 | 226 | 208 | 204 | 235 | 249 | 222 | 213 |
| TSS (lbs/day) Average Monthly | 26 | 31 | 41 | 48 | 56 | 45 | 42 | 52 | 33 | 42 | 61 | 23 |
| TSS (lbs/day) Raw Sewage Influent Average Monthly | 2956 | 2507 | 2602 | 2183 | 3081 | 2942 | 2292 | 2479 | 2614 | 2209 | 1880 | 2066 |
| TSS (lbs/day) Raw Sewage Influent Daily Maximum | 4068 | 3180 | 3204 | 2767 | 5780 | 3664 | 2657 | 3465 | 4412 | 2691 | 2263 | 3153 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TSS (lbs/day)<br>Weekly Average | 31 | 34 | 62 | 71 | 71 | 56 | 62 | 106 | 36 | 83 | 106 | 29 |
| TSS (mg/L)<br>Average Monthly | 3.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 5.0 | 3.0 | 4.0 | 5.0 | 3.0 |
| TSS (mg/L)<br>Raw Sewage Influent<br>Average Monthly | 272 | 226 | 227 | 163 | 282 | 247 | 175 | 228 | 249 | 233 | 160 | 210 |
| TSS (mg/L)<br>Weekly Average | 3.0 | 3.0 | 6.0 | 5.0 | 7.0 | 5.0 | 4.0 | 10.0 | 4.0 | 8.0 | 9.0 | 4.0 |
| Fecal Coliform<br>(No./100 ml)<br>Geometric Mean | 7 | 3 | 4 | 22 | 45 | 23 | 7 | 8 | 7 | 25 | 17 | 9 |
| Fecal Coliform<br>(No./100 ml)<br>Instantaneous<br>Maximum | 16.9 | 6.3 | 7.5 | 1986 | 152.9 | 146.7 | 29.2 | 18.7 | 13.2 | 119.8 | 48 | 34.5 |
| Nitrate-Nitrite (mg/L)<br>Average Monthly | 1.196 | 1.547 | 1.444 | 2.58 | 2.06 | 2.25 | 3.46 | 3.35 | 3.23 | 2.96 | 3.91 | 2.195 |
| Nitrate-Nitrite (lbs)<br>Total Monthly | 372 | 506 | 490 | 1084 | 770 | 885 | 1355 | 1012 | 1013 | 787 | 1394 | 627 |
| Total Nitrogen (mg/L)<br>Average Monthly | 2.371 | 2.673 | 3.078 | 3.90 | 3.96 | 3.476 | 4.249 | 4.70 | 4.384 | 4.43 | 5.6 | 3.705 |
| Total Nitrogen (lbs)<br>Effluent Net<br>Total Monthly | 732 | 882 | 1030 | 1645 | 1430 | 1328 | 1647 | 1434 | 1371 | 1170 | 2046 | 1055 |
| Total Nitrogen (lbs)<br>Total Monthly | 732 | 882 | 1030 | 1645 | 1430 | 1328 | 1647 | 1434 | 1371 | 1170 | 2046 | 1055 |
| Total Nitrogen (lbs)<br>Effluent Net<br>Total Annual | | | | | | | | | | 20688 | | |
| Total Nitrogen (lbs)<br>Total Annual | | | | | | | | | | 13538 | | |
| Ammonia (lbs/day)<br>Average Monthly | 2 | 2 | 2 | 5 | 5 | 3 | 2 | 1 | 1 | 3 | 5 | 1 |
| Ammonia (mg/L)<br>Average Monthly | 0.234 | 0.169 | 0.206 | 0.337 | 0.429 | 0.274 | 0.172 | 0.134 | 0.111 | 0.325 | 0.307 | 0.153 |
| Ammonia (lbs)<br>Total Monthly | 71 | 56 | 69 | 169 | 143 | 100 | 70 | 44 | 34 | 88 | 152 | 43 |
| Ammonia (lbs)<br>Total Annual | | | | | | | | | | 1286 | | |
| TKN (mg/L)<br>Average Monthly | 1.174 | 1.127 | 1.634 | 1.32 | 1.90 | 1.223 | 0.785 | 1.35 | 1.152 | 1.47 | 1.69 | 1.51 |
| TKN (lbs)<br>Total Monthly | 360 | 376 | 540 | 561 | 660 | 443 | 293 | 422 | 358 | 383 | 652 | 428 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Phosphorus (lbs/day) Average Monthly | 4 | 4 | 5 | 4 | 5 | 7 | 4 | 7 | 7 | 6 | 10 | 5 |
| Total Phosphorus (mg/L) Average Monthly | 0.407 | 0.375 | 0.451 | 0.338 | 0.402 | 0.613 | 0.321 | 0.692 | 0.647 | 0.674 | 0.882 | 0.546 |
| Total Phosphorus (lbs) Effluent Net Total Monthly | 123 | 123 | 152 | 138 | 142 | 225 | 131 | 210 | 206 | 178 | 317 | 154 |
| Total Phosphorus (lbs) Total Monthly | 123 | 123 | 152 | 138 | 142 | 225 | 131 | 210 | 206 | 178 | 317 | 154 |
| Total Phosphorus (lbs) Effluent Net Total Annual | | | | | | | | | | 2398 | | |
| Total Phosphorus (lbs) Total Annual | | | | | | | | | | 2086 | | |

## Development of Effluent Limitations

**Outfall No.** 001 **Design Flow (MGD)** 1.788
**Latitude** 39º 52' 12.37" **Longitude** -77º 4' 6.25"
**Wastewater Description:** Sewage Effluent

### Technology-Based Limitations

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

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

### Water Quality-Based Limitations

**Ammonia ($NH_3$-N):**
$NH_3$-N calculations were based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the in-stream $NH_3$-N criteria used in the attached computer model of the stream:

- Discharge pH 7.0 (Default per 391-2000-007)
- Discharge Temperature 25°C (Default per 391-2000-007)
- Stream pH 7.0 (Default per 391-2000-006)
- Stream Temperature 25°C (Default for WWF per 391-2000-003)
- Background $NH_3$-N 0 mg/L (Assumed since no nearby upstream WWTPs)

Regarding $NH_3$-N limits, the attached computer printout of the WQM 7.0 stream model (version 1.1) indicates that a limit of 3.45 mg/L $NH_3$-N as a monthly average (AML) and 6.9 mg/L $NH_3$-N instantaneous maximum (IMAX) are necessary to protect the aquatic life from toxicity effects. These values are slightly more stringent than the existing limits and round off will be the same as the summer in existing limits of 3.5 mg/L AML & 7.0 mg/L IMAX and will remain in the proposed permit. Per anti-backsliding policy, the existing winter limit of 7.5 mg/L will remain in place. Recent DMRs and inspection reports indicate that the facility has been consistently achieving these limits. Mass limits are calculated as follows:

Summer average monthly mass limit: 3.5 mg/L x 1.788 MGD x 8.34 = 52 lbs/day
Winter average monthly mass limit: 7.5 mg/L x 1.788 MGD x 8.34 = 112 lbs/day

**Dissolved Oxygen (D.O.):**
The D.O. goal is 6.0 mg/L. However, a minimum D.O. of 5.0 mg/L is required per 25 Pa. Code § 93.7. It is recommended that this limit be maintained in the proposed permit to ensure the protection of water quality standards. This approach is consistent with DEP's current Standard Operating Procedure (SOP) No. BPNPSM-PMT-033 and has been applied to other point source dischargers throughout the state.

**pH:**
The effluent discharge pH should remain above 6.0 and below 9.0 standard units according to 25 Pa. Code § 95.2(1).

**Carbonaceous Biochemical Oxygen Demand ($CBOD_5$):**
The attached computer printout of the WQM 7.0 stream model (ver. 1.1) indicates that a monthly average limit (AML) of 11.51 mg/L, or secondary treatment, is adequate to protect the water quality of the stream. The 11.5 mg/L round off 12.0 mg/L as AML, 18.0 mg/L as weekly average limit (AWL), & 24.0 mg/L as IMAX are more stringent and will be in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Summer average monthly mass limit: 12.0 mg/L x 1.788 MGD x 8.34 = 178.94 (179.0) lbs/day
Summer average weekly mass limit: 18.0 mg/L x 1.788 MGD x 8.34 = 268.0 lbs/day

The existing winter limits of 25.0 mg/L AML, 40.0 mg/L AWL, & 50.0 mg/L IMAX will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has typically been achieving concentrations below this limit. Mass limits are calculated as follows:

Winter average monthly mass limit: 25 mg/L x 1.788 MGD x 8.34 = 373 lbs/day
Winter average weekly mass limit: 40 mg/L x 1.788 MGD x 8.34 = 596 lbs/day

**Fecal Coliform:**
The recent coliform guidance in 25 Pa. code § 92a.47.(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and an instantaneous maximum not greater than 1,000/100ml and 25 Pa. Code § 92a.47.(a)(5) requires a winter limit of 2,000/100ml as a geometric mean and an instantaneous maximum not greater than 10,000/100ml.

**E. Coli:**
As recommended by DEP's SOP no. BPNPSM-PMT-033, a routine monitoring for E. Coli will be included in the permit under 25 Pa Code §92a.61. This requirement applies to all sewage dischargers greater than 0.002 MGD in their new and reissued permits. A monitoring frequency of 2/week will be included permit to be consistent with the recommendation from this SOP.

**Total Residual Chlorine (TRC):**
Based on the attached TRC Excel Spreadsheet calculator, which uses the equations and calculations from the Department's May 1, 2003 "Implementation Guidance for Total Residual Chlorine" (ID No. 391-2000-015), the facility's discharge must meet a monthly average limit of 0.21 mg/L and an instantaneous maximum limit of 0.68 mg/L. However, the existing limits of 0.19 mg/L monthly average & 0.61 mg/L IMAX were more stringent and will remain in the proposed permit. Recent DMRs and inspection reports show that the facility has been consistently achieving these limits.

**Total Phosphorus:**
The existing permit has phosphorus limitations of 2.0 mg/L average monthly and 4.0 mg/L instantaneous maximum. The most recent 24 months of DMR data indicate consistent compliance with the existing limits, which will remain in the proposed permit. Mass limits are calculated as follows:

Average monthly mass limit: 2.0 mg/L x 1.788 MGD x 8.34 = 30 lbs/day

**Chesapeake Bay:**
In the Phase 3 WIP Wastewater Supplement revised on December 17, 2019, Table 5 of this document shows that New Oxford Municipal Authority has been allocated 32,657 lbs/year of TN and 4,354 lbs/year of TP. This approach is consistent with the Chesapeake Bay TMDL was based on the actual performance data previously evaluated by the Department. Since the permittee is easily capable of achieving compliance with these loads, the Department determines that no "compliance schedule" for the requirements associated with the Chesapeake Bay Strategy is necessary. Accordingly, the Chesapeake Bay nutrient existing limitations and monitoring requirements will remain in the proposed permit.

This facility is currently a significant discharger. Therefore, the facility's waste load allocation (WLA) will be tracked under an individual WLA as a significant discharger in the Phase 2 WIP Wastewater Supplement. Monitoring frequency for TN constituents will be increased to 2/week to match the other parameters since this is a major facility with Cap Loads.

**Toxics:**
Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.0 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Based on effluent sample results reported on the application, the Toxics Management Spreadsheet did not recommend any limits or monitoring requirements.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. Spreadsheet results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Pollutant testing results on the current (2020) application were reviewed in comparison with DEP's Toxic Management Spreadsheet, version 1.3, March 2021, to determine that:

- Total Aluminum (Al), total Copper (Cu), dissolved Iron (Fe), and total Zinc (Zn) pollutants have no reasonable potential (no RP) discharge concentration > 10% of WQBELs, and based upon the data provided in the application, monitoring requirements for these parameters are not necessary in the proposed permit.

- Free Cyanide pollutant has reasonable potential (RP) greater than or equal to 50% WQBEL, and based upon the data provided in the application (Maximum Value 0.044 lbs/day and Average Value 0.040 lbs/day) (page 15) which is below the Mass Limits (MDL 0.22 lbs/day and AML 0.14 lbs/day) in DEP Toxics Management Spreadsheet. Therefore, the limit or monitoring requirement of this parameter is not necessary to add to the proposed permit.

- The Hexachlorobutadiene pollutant have reasonable potential (RP) discharge concentration greater than or equal to 50% WQBEL, and based upon the data provided in the application (Maximum Value 0.048 lbs/day and Average Value 0.046 lbs/day) (page 21) which is below the Mass Limits (MDL 0.097 lbs/day and AML 0.062 lbs/day) in DEP Toxics Management Spreadsheet. Therefore, the limit or monitoring requirement of this parameter is not necessary to add to the proposed permit.


TMS
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**Stormwater:**
According to the 2020 application, the WWTP has one stormwater outfall (Outfall 002) which has a total drainage area (including offsite areas) of approximately 18,000 $ft^2$. To control stormwater, chemical storage is contained inside buildings. No fertilizers or pesticides are used onsite. All areas of operation are routinely inspected.

**Antidegradation (93.4):**
The effluent limits for this discharge have been developed to ensure that existing in-stream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

**303d Listed Streams:**
The facility does not discharge to a 303(d) listed stream segment.

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

**Additional Considerations**

Flow Monitoring
Flow monitoring is recommended by the permit guidance and is also required by 25 Pa. Code §§ 92a.27 and 92a.61.

Influent Monitoring
As a result of negotiation with EPA, influent monitoring of TSS and $BOD_5$ are required for any POTWs; therefore, influent sampling of $BOD_5$ and TSS will be included in the draft permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for TSS and $CBOD_5$ in the effluent.

Total Dissolved Solids (TDS)

Total Dissolved Solids and its major constituents including Bromide, Chloride, and Sulfate have become statewide pollutants of concern and threats to DEP's mission to prevent violations of water quality standards. The requirement to monitor these pollutants is necessary under the following DEP Central Office directive:

*For point source discharges and upon issuance or reissuance of an individual NPDES permit:*

- *Where the concentration of TDS in the discharge exceeds 1,000 mg/L, or the net TDS load from a discharge exceeds 20,000 lbs/day, and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for TDS, sulfate, chloride, and bromide. Discharges of 0.1 MGD or less should monitor and report for TDS, sulfate, chloride, and bromide if the concentration of TDS in the discharge exceeds 5,000 mg/L.*
- *Where the concentration of bromide in a discharge exceeds 1 mg/L and the discharge flow exceeds 0.1 MGD, Part A of the permit should include monitor and report for bromide. Discharges of 0.1 MGD or less should monitor and report for bromide if the concentration of bromide in the discharge exceeds 10 mg/L.*

The facility has no record of monitoring these pollutants. However, the application shows a maximum influent concentration of 580 mg/L for TDS. The effluent concentration is not expected to exceed 1,000 mg/L. No monitoring is necessary.

Local TMDL

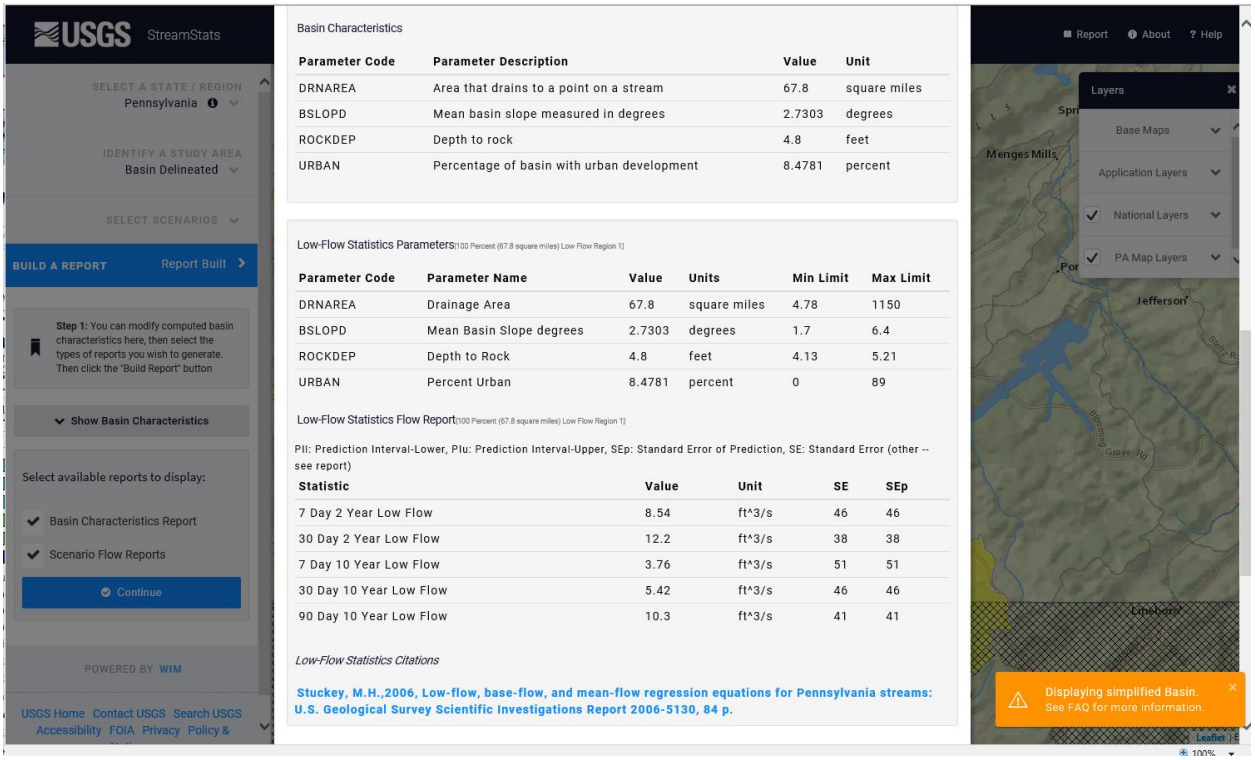
According to eMapPA (http://www.emappa.dep.state.pa.us/emappa/viewer.htm), the proposed discharge will be located in a stream segment listed as attaining uses. Considering nature of the discharge, the facility will not contribute to the impairment. No local TMDL has been taken into consideration during this permit review process.

Mass Loading Limitation

All mass loading effluent limitations recommended in the draft permit are concentration-based, calculated using a formula: design flow (MGD) x concentration limit (mg/L) x conversion factor of 8.34.

**WQM 7.0 Data:**

| | | |
|---|---|---|
| Node 1: | Outfall 001 on South Branch Conewago Creek (08813) | |
| | Elevation: | 464 ft (USGS National Map Viewer) |
| | Drainage Area: | 67.8 $mi^2$ (USGS PA StreamStats) |
| | River Mile Index: | 3.36 (PA DEP eMapPA) |
| | Low Flow Yield: | 0.055 $cfs/mi^2$ |
| | Discharge Flow: | 1.788 MGD |
| Node 2: | Just before confluence with UNT 08827 | |
| | Elevation: | 451 ft (USGS National Map Viewer) |
| | Drainage Area: | 69.0 (69.0) $mi^2$ (USGS PA StreamStats) |
| | River Mile Index: | 2.05 (PA DEP eMapPA) |
| | Low Flow Yield: | 0.055 $cfs/mi^2$ |
| | Discharge Flow: | 0.000 MGD |




Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 67.8 | square miles |
| BSLOPD | Mean basin slope measured in degrees | 2.7303 | degrees |
| ROCKDEP | Depth to rock | 4.8 | feet |
| URBAN | Percentage of basin with urban development | 8.4781 | percent |

Low-Flow Statistics Parameters[100 Percent (67.8 square miles) Low Flow Region 1]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 67.8 | square miles | 4.78 | 1150 |
| BSLOPD | Mean Basin Slope degrees | 2.7303 | degrees | 1.7 | 6.4 |
| ROCKDEP | Depth to Rock | 4.8 | feet | 4.13 | 5.21 |
| URBAN | Percent Urban | 8.4781 | percent | 0 | 89 |

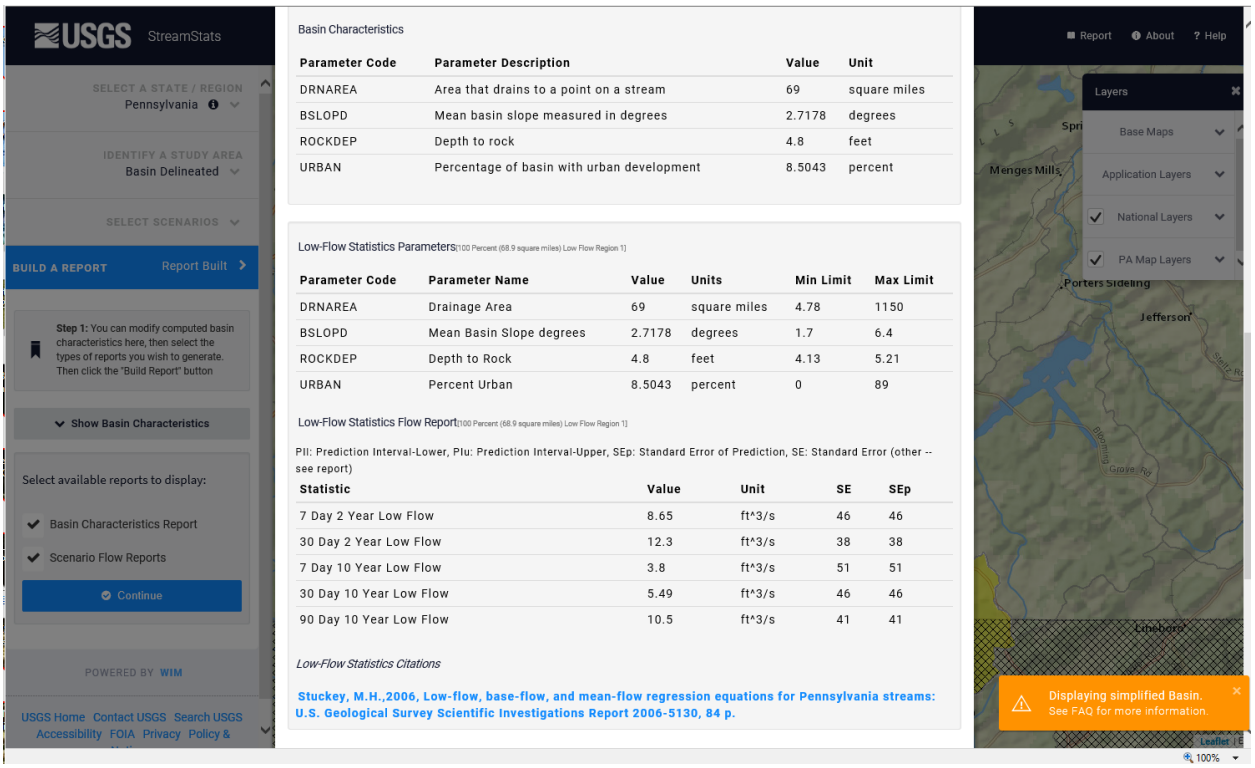
Low-Flow Statistics Flow Report[100 Percent (67.8 square miles) Low Flow Region 1]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

| Statistic | Value | Unit | SE | SEp |
|---|---|---|---|---|
| 7 Day 2 Year Low Flow | 8.54 | ft^3/s | 46 | 46 |
| 30 Day 2 Year Low Flow | 12.2 | ft^3/s | 38 | 38 |
| 7 Day 10 Year Low Flow | 3.76 | ft^3/s | 51 | 51 |
| 30 Day 10 Year Low Flow | 5.42 | ft^3/s | 46 | 46 |
| 90 Day 10 Year Low Flow | 10.3 | ft^3/s | 41 | 41 |

*Low-Flow Statistics Citations*

**Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.**




Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 69 | square miles |
| BSLOPD | Mean basin slope measured in degrees | 2.7178 | degrees |
| ROCKDEP | Depth to rock | 4.8 | feet |
| URBAN | Percentage of basin with urban development | 8.5043 | percent |

Low-Flow Statistics Parameters[100 Percent (68.9 square miles) Low Flow Region 1]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 69 | square miles | 4.78 | 1150 |
| BSLOPD | Mean Basin Slope degrees | 2.7178 | degrees | 1.7 | 6.4 |
| ROCKDEP | Depth to Rock | 4.8 | feet | 4.13 | 5.21 |
| URBAN | Percent Urban | 8.5043 | percent | 0 | 89 |

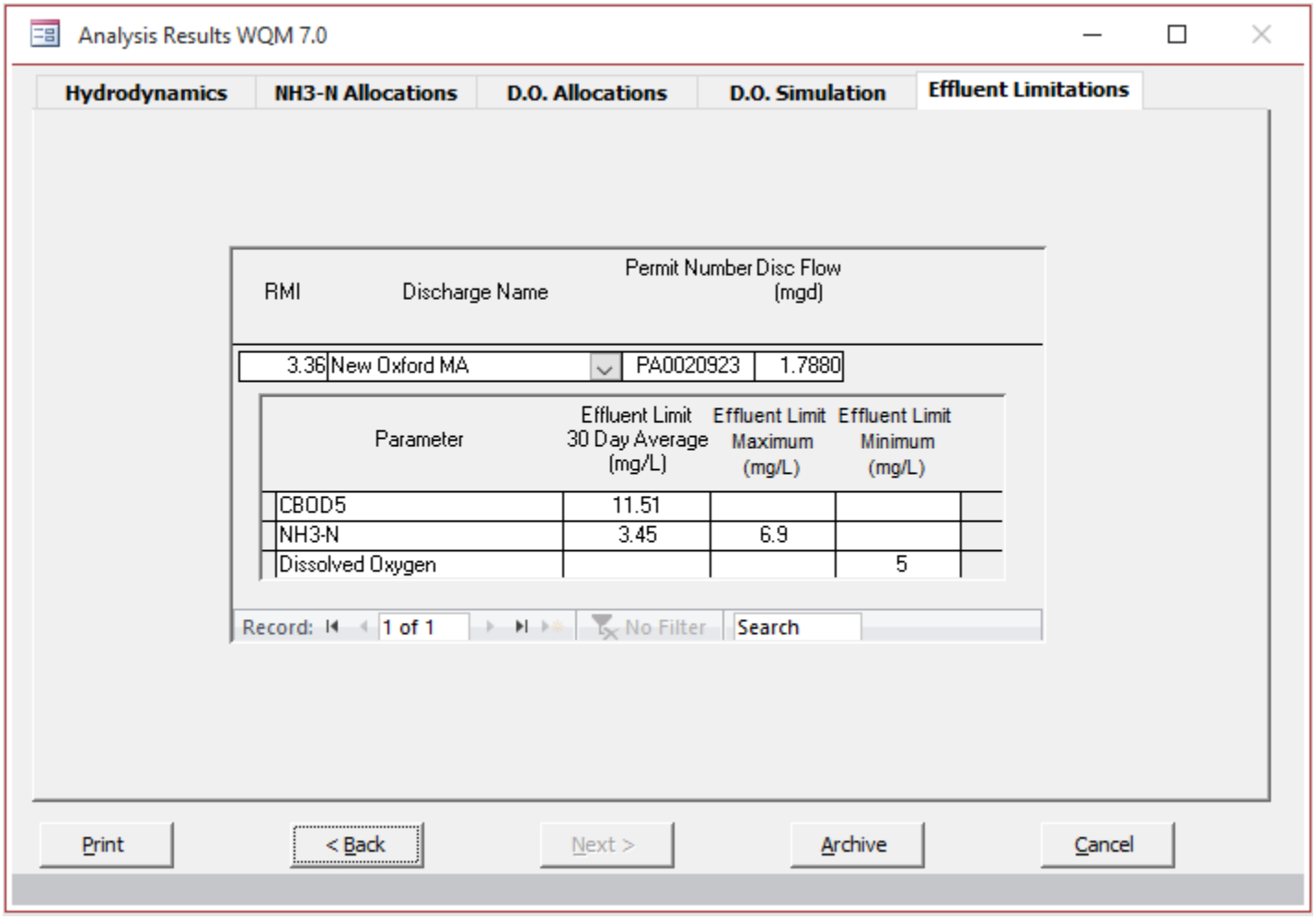
Low-Flow Statistics Flow Report[100 Percent (68.9 square miles) Low Flow Region 1]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

| Statistic | Value | Unit | SE | SEp |
|---|---|---|---|---|
| 7 Day 2 Year Low Flow | 8.65 | ft^3/s | 46 | 46 |
| 30 Day 2 Year Low Flow | 12.3 | ft^3/s | 38 | 38 |
| 7 Day 10 Year Low Flow | 3.8 | ft^3/s | 51 | 51 |
| 30 Day 10 Year Low Flow | 5.49 | ft^3/s | 46 | 46 |
| 90 Day 10 Year Low Flow | 10.5 | ft^3/s | 41 | 41 |

*Low-Flow Statistics Citations*

**Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.**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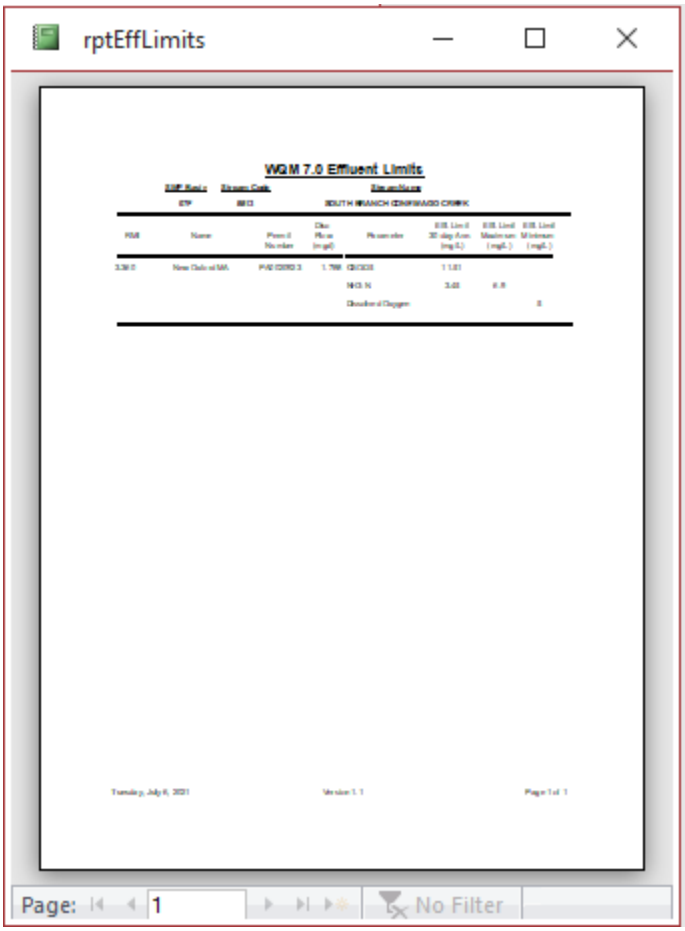
Hydrodynamics
NH3-N Allocations
D.O. Allocations
D.O. Simulation
Effluent Limitations
RMI
Discharge Name
Permit Number
Disc Flow (mgd)
3.36
New Oxford MA
PA0020923
1.7880
Parameter
Effluent Limit 30 Day Average (mg/L)
Effluent Limit Maximum (mg/L)
Effluent Limit Minimum (mg/L)
CBOD5
11.51
NH3-N
3.45
6.9
Dissolved Oxygen
5
Record: 1 of 1
No Filter
Search
Print
< Back
Next >
Archive
Cancel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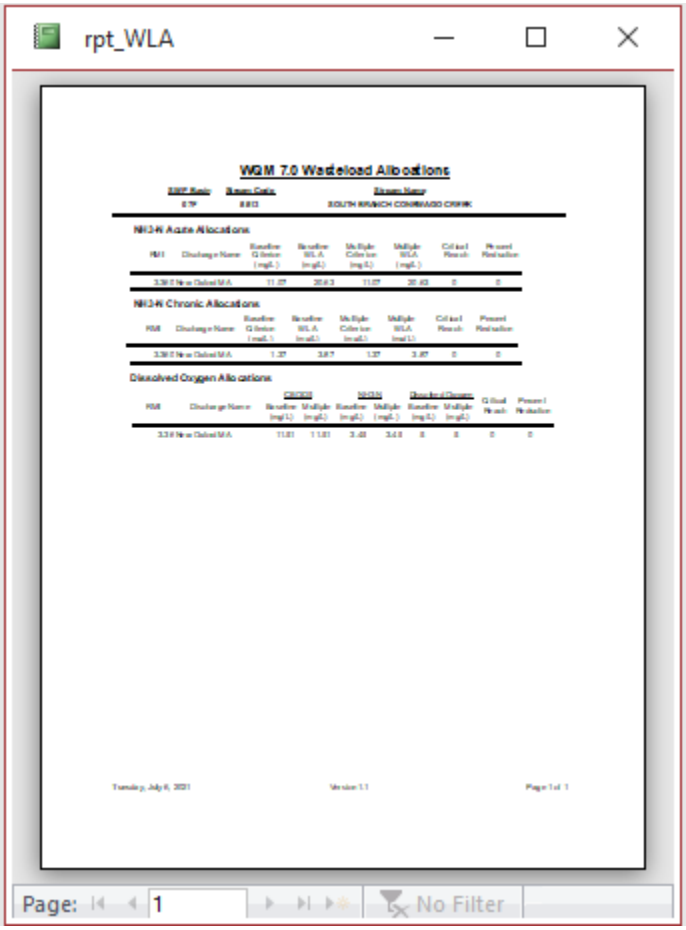
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NH3-N Acute Allocations
NH3-N Chronic Allocations
Dissolved Oxygen Allocations
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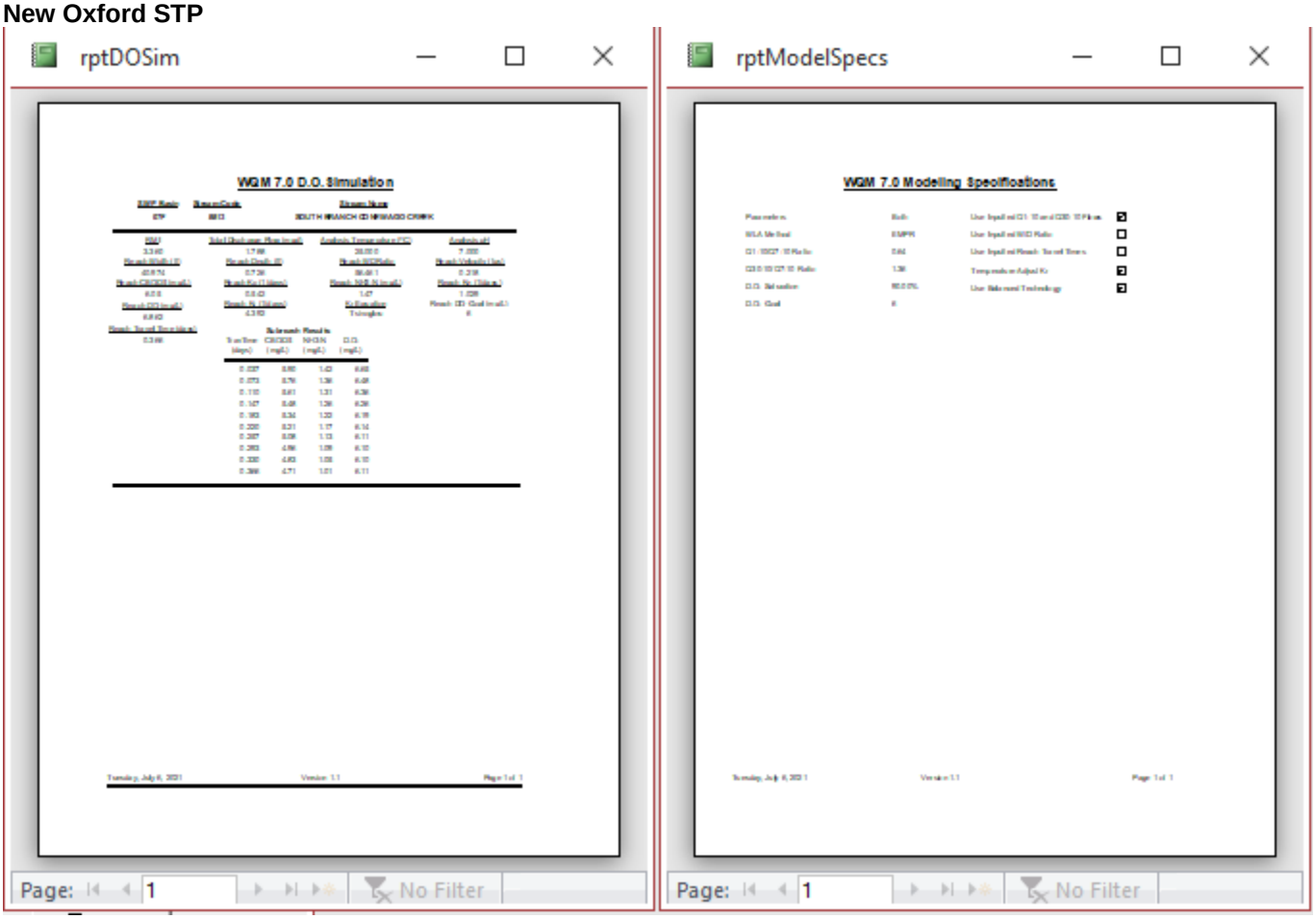
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WQM 7.0 D.O. Simulation
rptModelSpecs
WQM 7.0 Modeling Specifications
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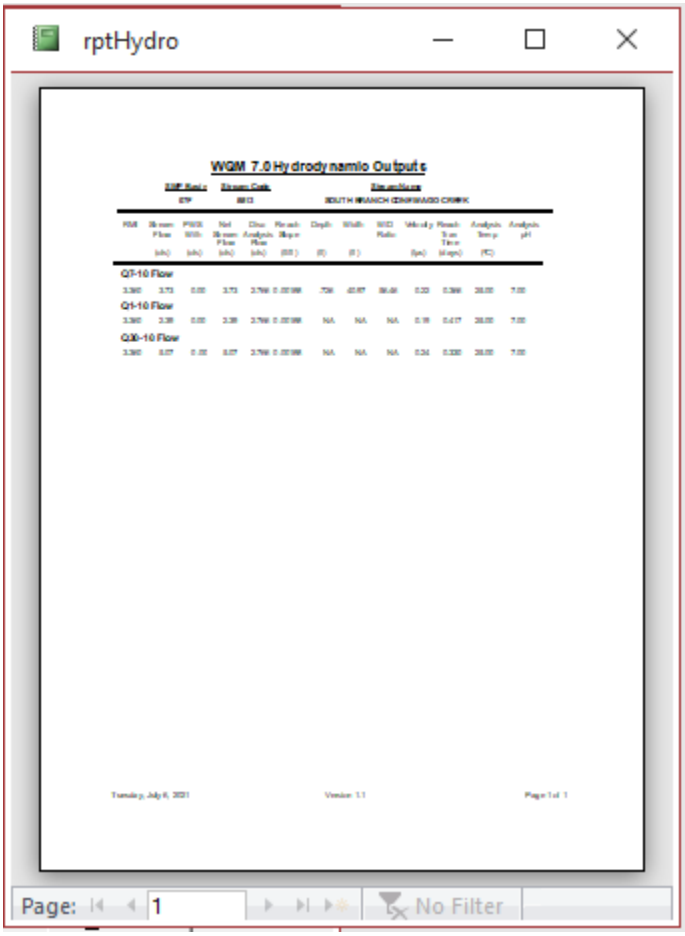
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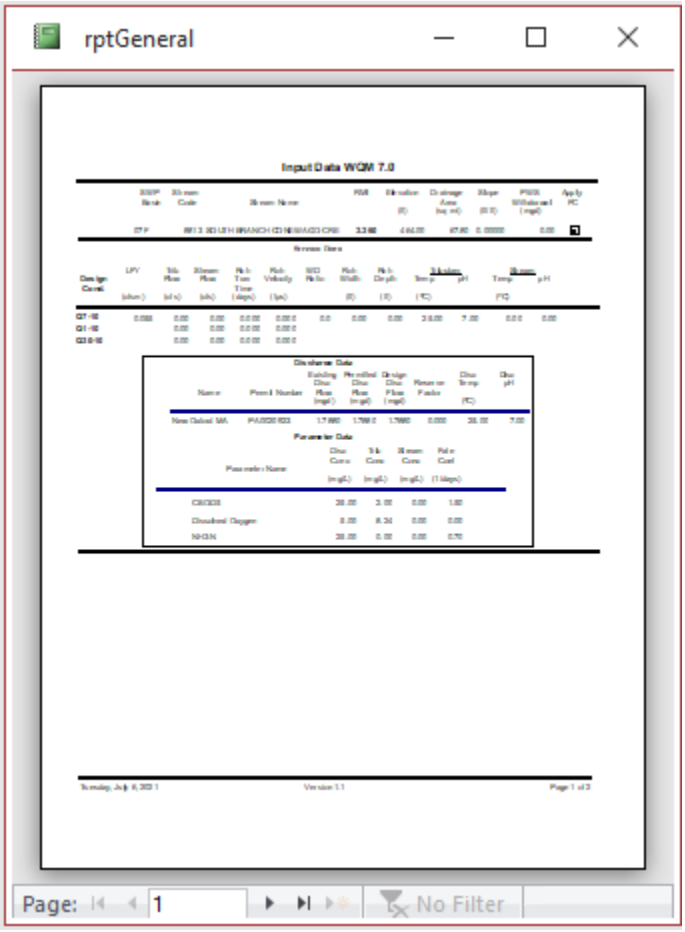
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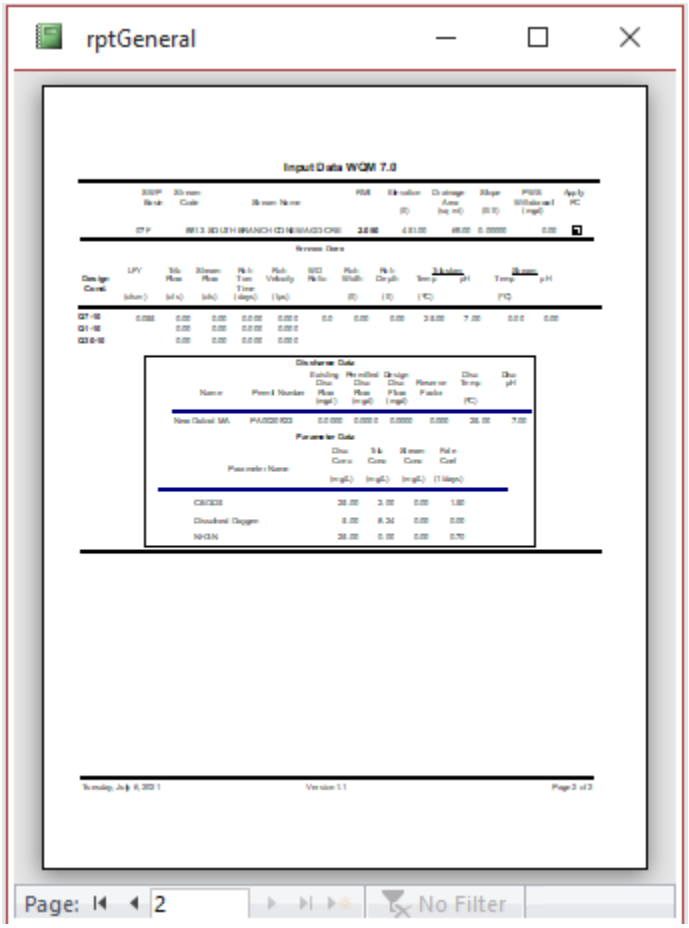
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Input Data WQM 7.0
Page: 2
No Filter

## TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

| | | | |
|---|---|---|---|
| 3.76 | = Q stream (cfs) | 0.5 | = CV Daily |
| 1.788 | = 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 | Reference | CFC Calculations |
|---|---|---|---|---|
| TRC | 1.3.2.iii | WLA afc = 0.453 | 1.3.2.iii | WLA cfc = 0.434 |
| PENTOXSD TRG | 5.1a | LTAMULT afc = 0.373 | 5.1c | LTAMULT cfc = 0.581 |
| PENTOXSD TRG | 5.1b | LTA_afc= 0.169 | 5.1d | LTA_cfc = 0.252 |

| Source | | Effluent Limit Calculations | |
|---|---|---|---|
| PENTOXSD TRG | 5.1f | AML MULT = 1.231 | |
| PENTOXSD TRG | 5.1g | AVG MON LIMIT (mg/l) = 0.208 | AFC |
| | | INST MAX LIMIT (mg/l) = 0.679 | |

| | |
|---|---|
| WLA afc | **(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...** **...+ 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) )...** **...+ 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)** |

## 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:

The dilution series used for the tests was: 100%, 77%, 43%, 22%, and 11%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 43%.

**Summary of Four Most Recent Test Results**

TST Data Analysis

*(NOTE – In lieu of recording information below, the application manager may attach the DEP WET Analysis Spreadsheet).*

| Test Date | *Ceriodaphnia* Results (Pass/Fail) | | *Pimephales* Results (Pass/Fail) | |
|---|---|---|---|---|
| | Survival | Reproduction | Survival | Growth |
| Oct & Nov 2016 | Pass | Pass | Pass | Pass |
| Oct 2017 | Pass | Pass | Pass | Pass |
| Aug & Sept 2018 | Pass | Pass | Pass | Pass |
| June 2019 | Pass | Pass | Pass | Pass |
| Mar & Apr 2020 | Pass | Pass | Pass | Pass |

***** *A "passing" result is that in which the replicate data for the TIWC is not statistically significant from the control condition. This is exhibited when the calculated t value ("T-Test Result") is greater than the critical t value. A "failing" result is exhibited when the calculated t value ("T-Test Result") is less than the critical t value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

**Comments:**

**Evaluation of Test Type, IWC and Dilution Series for Renewed Permit**

Toxic Management Spreadsheet was used to obtain acute and chronic partial mix factors. Results are attached.

Acute Partial Mix Factor (PMFa): **0.728** Chronic Partial Mix Factor (PMFc): **1.0**

**1. Determine IWC – Acute (IWCa)**:

$(Q_d \times 1.547) / ((Q_{7\text{-}10} \times PMFa) + (Q_d \times 1.547))$

[(1.788 MGD x 1.547) / ((3.76 cfs x 0.728) + (1.788 MGD x 1.547))] x 100 = **50.3%**

Is IWCa < 1%? ☐ **YES** ☒ **NO**

**Type of Test for Permit Renewal**: **Chronic**

**2b. Determine Target IWCc (If Chronic Tests Required)**

$(Q_d \times 1.547) / (Q_{7\text{-}10} \times PMFc) + (Q_d \times 1.547)$

[(1.788 MGD x 1.547) / ((3.76 cfs x 1) + (1.788 MGD x 1.547))] x 100 = **42.4%**

**3. Determine Dilution Series**

*(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).*

Dilution Series = 100%, 72%, 43%, 22%, and 11%.

**WET Limits**

Has reasonable potential been determined? ☐ YES ☒ NO

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

If WET limits will be established, identify the species and the limit values for the permit (TU).
N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits.
N/A

## Existing Effluent Limitations and Monitoring Requirements

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Flow (MGD) | Report | Report | XXX | XXX | XXX | XXX | Continuous | Measured |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 5.0 | XXX | XXX | XXX | 1/day | Grab |
| TRC | XXX | XXX | XXX | 0.19 | XXX | 0.61 | 1/day | Grab |
| CBOD5<br>May 1 - Oct 31 | 224 | 328<br>Wkly Avg | XXX | 15.0 | 22.0 | 30 | 2/week | 24-Hr<br>Composite |
| CBOD5<br>Nov 1 - Apr 30 | 373 | 596<br>Wkly Avg | XXX | 25.0 | 40.0 | 50 | 2/week | 24-Hr<br>Composite |
| TSS | 447 | 671<br>Wkly Avg | XXX | 30.0 | 45.0 | 60 | 2/week | 24-Hr<br>Composite |
| BOD5<br>Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr<br>Composite |
| TSS<br>Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr<br>Composite |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30 | XXX | XXX | XXX | 200<br>Geo Mean | XXX | 1,000 | 2/week | Grab |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30 | XXX | XXX | XXX | 2,000<br>Geo Mean | XXX | 10,000 | 2/week | Grab |
| Ammonia<br>May 1 - Oct 31 | 52 | XXX | XXX | 3.5 | XXX | 7 | 2/week | 24-Hr<br>Composite |
| Ammonia<br>Nov 1 - Apr 30 | 112 | XXX | XXX | 7.5 | XXX | 15 | 2/week | 24-Hr<br>Composite |
| Total Phosphorus | 30 | XXX | XXX | 2.0 | XXX | 4 | 2/week | 24-Hr<br>Composite |

## Existing Effluent Limitations and Monitoring Requirements

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Monthly | Annual | Monthly | Monthly Average | Maximum | Instant. Maximum | | |
| Ammonia--N | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Kjeldahl--N | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Nitrate-Nitrite as N | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Total Nitrogen | Report | Report | XXX | Report | XXX | XXX | 1/month | Calculation |
| Total Phosphorus | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Net Total Nitrogen | Report | 32,657 | XXX | XXX | XXX | XXX | 1/month | Calculation |
| Net Total Phosphorus | Report | 4,354 | XXX | XXX | XXX | XXX | 1/month | Calculation |

## 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" (362-0400-001), SOPs and/or BPJ.

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Average Monthly | Daily Maximum | Minimum | Average Monthly | Weekly Average | Instant. Maximum | | |
| Flow (MGD) | Report | Report | XXX | XXX | XXX | XXX | Continuous | Measured |
| pH (S.U.) | XXX | XXX | 6.0 | XXX | XXX | 9.0 | 1/day | Grab |
| DO | XXX | XXX | 5.0 | XXX | XXX | XXX | 1/day | Grab |
| TRC | XXX | XXX | XXX | 0.19 | XXX | 0.61 | 1/day | Grab |
| CBOD5<br>May 1 - Oct 31 | 179.0 | 268.0<br>Wkly Avg | XXX | 12.0 | 18.0 | 24.0 | 2/week | 24-Hr<br>Composite |
| CBOD5<br>Nov 1 - Apr 30 | 373.0 | 596.0<br>Wkly Avg | XXX | 25.0 | 40.0 | 50.0 | 2/week | 24-Hr<br>Composite |
| TSS | 447.0 | 671.0<br>Wkly Avg | XXX | 30.0 | 45.0 | 60.0 | 2/week | 24-Hr<br>Composite |
| BOD5<br>Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr<br>Composite |
| TSS<br>Raw Sewage Influent | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr<br>Composite |
| Fecal Coliform (No./100 ml)<br>May 1 - Sep 30 | XXX | XXX | XXX | 200<br>Geo Mean | XXX | 1,000 | 2/week | Grab |
| Fecal Coliform (No./100 ml)<br>Oct 1 - Apr 30 | XXX | XXX | XXX | 2,000<br>Geo Mean | XXX | 10,000 | 2/week | Grab |
| E. Coli (No./100 ml) | XXX | XXX | XXX | XXX | XXX | Report | 2/week | Grab |
| Ammonia<br>May 1 - Oct 31 | 52.0 | XXX | XXX | 3.5 | XXX | 7.0 | 2/week | 24-Hr<br>Composite |
| Ammonia<br>Nov 1 - Apr 30 | 112.0 | XXX | XXX | 7.5 | XXX | 15.0 | 2/week | 24-Hr<br>Composite |
| Total Phosphorus | 30.0 | XXX | XXX | 2.0 | XXX | 4.0 | 2/week | 24-Hr<br>Composite |

Compliance Sampling Location:

## 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" (362-0400-001), SOPs and/or BPJ.

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

| Parameter | Effluent Limitations | | | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Mass Units (lbs/day) (1) | | Concentrations (mg/L) | | | | Minimum (2) Measurement Frequency | Required Sample Type |
| | Monthly | Annual | Monthly | Monthly Average | Maximum | Instant. Maximum | | |
| Ammonia--N | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Kjeldahl--N | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Nitrate-Nitrite as N | Report | XXX | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Total Nitrogen | Report | Report | XXX | Report | XXX | XXX | 1/month | Calculation |
| Total Phosphorus | Report | Report | XXX | Report | XXX | XXX | 2/week | 24-Hr Composite |
| Net Total Nitrogen | Report | 32,657 | XXX | XXX | XXX | XXX | 1/month | Calculation |
| Net Total Phosphorus | Report | 4,354 | XXX | XXX | XXX | XXX | 1/month | Calculation |

Compliance Sampling Location:

Other Comments:

| Tools and References Used to Develop Permit | |
|---|---|
| | |
| ☒ | WQM for Windows Model (see Attachment ) |
| ☒ | Toxics Management Spreadsheet (see Attachment ) |
| ☒ | TRC Model Spreadsheet (see Attachment ) |
| ☐ | Temperature Model Spreadsheet (see Attachment ) |
| ☒ | Water Quality Toxics Management Strategy, 361-0100-003, 4/06. |
| ☐ | Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97. |
| ☐ | Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98. |
| ☐ | Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96. |
| ☐ | Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97. |
| ☐ | Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97. |
| ☐ | Pennsylvania CSO Policy, 385-2000-011, 9/08. |
| ☒ | Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03. |
| ☐ | Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97. |
| ☒ | Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97. |
| ☐ | Implementation Guidance Design Conditions, 391-2000-006, 9/97. |
| ☒ | Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004. |
| ☐ | Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997. |
| ☒ | Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99. |
| ☐ | Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004. |
| ☒ | Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97. |
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