pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHCENTRAL REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0027197**
Facility Type	**Sewage**	APS ID	**276152**
Major / Minor	**Major**	Authorization ID	**1032943**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Capital Region Water**	Facility Name	**Harrisburg Advanced Wastewater Treatment Facility**
Applicant Address	3003 N Front Street Harrisburg, PA 17110-1224	Facility Address	1662 S Cameron Street Harrisburg, PA 17104-3145
Applicant Contact	Claire Maulhardt	Facility Contact	Jess Rosentel
Applicant Phone	(717) 216-5255	Facility Phone	(717) 736-9742
Client ID	43333	Site ID	454377
SIC Code	4952	Municipality	Harrisburg City
SIC Description	Trans. & Utilities - Sewerage Systems	County	Dauphin
Date Published in PA Bulletin	December 2, 2023	EPA Waived?	No
Comment Period End Date	January 2, 2023	If No, Reason	Major Sewage w/ CSO
Purpose of Application	NPDES Renewal		

Internal Review and Recommendations

A draft permit was prepared on November 13, 2023 and published in the *Pennsylvania Bulletin* on December 2, 2023 for public comments for 30 days. During this 30-day public commenting period, a number of draft permit comments were received and DEP has addressed these comments as follows:

1. **Total Residual Chlorine (TRC)**
   Based on the comments received from the permittee (Capital Region Water), the Department has determined to provide the permittee an opportunity to conduct a site-specific study that would include a site-specific dilution study, evaluation of the best available technologies and selection of technology. The permittee requested 22 months as the interim period to conduct the study. The Department has determined that this request is reasonable and therefore, the new WQBELs will be in effect 22 months after issuance of the permit IF the Department's Water Quality Model (i.e., TRC_CALC spreadsheet) using their study results still shows that new WQBELs listed in the November 13, 2023 draft permit are still needed. Therefore, the following compliance schedule will be provided in Part C of the permit.

   I. REQUIREMENTS FOR TOTAL RESIDUAL CHLORINE (TRC)

   A. The permittee shall achieve compliance with the final water quality based effluent limitations (WQBELs) for TRC in Part A of this permit in accordance with the following schedule:

a) Submit a Site-Specific Study plan	Within 2 months from the permit effective date
b) Conduct a Site-Specific Study	Upon the study plan approval from the Department

Approve	Return	Deny	Signatures	Date
X			Jinsu Kim Jinsu Kim / Environmental Engineering Specialist	April 25, 2024
X			Maria D. Bebenek Daniel W. Martin, P.E. / Environmental Engineer Manager	May 2, 2024
X			Maria D. Bebenek Maria D. Bebenek, P.E. / Program Manager	May 2, 2024

Internal Review and Recommendations

c) Submit a Site-Specific Study Results	Within 18 months from the permit effective date
d) Evaluate and Select the Best Available Technology	See Part C of this Section
e) Compliance with Effluent Limits	See Part C of this Section
f) Submit Progress Reports	First day of each month

B. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to DEP a written notice of compliance or non-compliance with the specific schedule requirement. Each notice of non-compliance shall include the following information:

1. A short description of the non-compliance.
2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirement.
3. A description of any factors which tend to explain or mitigate the non-compliance.
4. An estimate of the date that compliance with the elapsed schedule requirement will be achieved and an assessment of the probability that the next scheduled requirement will be met on time.

C. Depending on the results of the study, The Department may modify the WQBELs in a manner that is either more or less stringent than the final WQBELs specified in this permit. Therefore, the Permittee shall evaluate and select the Best Available Technology within 22 months from the permit effective date if a site-specific dilution study shows that the Permittee must achieve compliance with final Water Quality Based Effluent Limits (WQBELs) listed in Part A of this permit or other WQBELs that are more stringent than the interim Effluent Limits listed in Part A of this permit. If such study shows that the interim Effluent Limits listed in Part A of this permit are protective of water quality, the Permittee is not required to evaluate and select the technology that the Permittee must achieve compliance with the interim Effluent Limits listed in Part A of this permit for the remainder of this permit term. The Department may reopen this permit based on the study results.

2. Standard Conditions of the NPDES Permit

The permittee has requested clarification of certain standard conditions listed in the NPDES permit. These are as follows:

1. Oil/Grease condition (Part A.I.A.1.b),
2. Sanitary Sewer Overflow Prohibition (Part B.I.H),
3. Representative Sampling Requirement (Part A.III.A.1),
4. Sufficiently Sensitive Test Methods Requirement (Part A.III.A.4),
5. Planned Changes to Waste Stream (Part A.III.C.2),
6. Reporting Requirements for Hauled-in Residual Waste (Part A.III.C.3.a),
7. Reporting Requirements for Hauled-In Municipal Waste (Part A.III.C.3.b)
8. Solids Management Inventory (Part B.I.C.4.c)

These are standard conditions listed in Part A and B of the NPDES permit for all POTWs and other sewage treatment facilities. The Department has therefore determined that no further clarification is needed, except for no. 8 where “Solids Management Inventory” condition listed in Part C of the permit will be modified to reflect the existing “Solids Management Inventory” condition listed in the current permit. This Part C condition is often modified on a case-by-base reflecting the site-specific condition.

3. Total Zinc & Total Aluminum Monitoring Requirements

The permittee has requested clarification of the basis of new monitoring requirements for Total Zinc and Total Aluminum. The basis has been explained in the fact sheet developed on June 1, 2023 that the Department’s water quality analysis based on the sample results provided in the permit application resulted a routine monitoring requirement for these parameters.

Internal Review and Recommendations

4. CSO Requirements (Part C.II.D.1.b, Part B.II.D.1.c, & Part B.II.G)

Any reporting requirements listed in the permit are separate requirements from any reporting requirements listed in the Consent Decree. Additionally, regarding EPA's comments related to the CSO-related bypass condition, the facility has been upgraded previously that would maximize the volume to be treated through the secondary treatment process and CSO-related bypass discharges through the main outfall in which such bypass condition is to be implementing the previously-approved LTCP and potentially new LTCP expected to be completed by the end of this year.

5. Part C Pretreatment Conditions

Part C Pretreatment Conditions have been updated recently. As a result, the updated conditions will be included in the draft permit.

6. **Monitoring of PFAS**

Based on the recent directive from the Bureau of Clean Water, a quarterly monitoring of PFAS (PFOA, PFOS, HFPO-DA and PFBS) will be included in the permit. The quarterly monitoring requirement rather than the annual monitoring requirement will be included as the permittee receives wastewater from those industrial users considered industrial categories (i.e., landfills, electroplating, etc.). If the permittee demonstrates that they do not receive wastewater from these industrial users, the annual monitoring requirement will be included in the permit.

Given a number of changes made to the November 13, 2023 draft permit, it is recommended that the revised draft permit be issued and re-published in the *Pennsylvania Bulletin* for another 30 days.

CAPITAL REGION WATER

January 16, 2024

Ms. Maria D. Bebenek, P.E.
Environmental Program Manager
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110-8200

RE: Comments of Capital Region Water on Draft NPDES Permit – Sewage
Harrisburg Advanced Wastewater Treatment Facility
Application No. PA0027197; Authorization ID No. 1032943
Harrisburg City, Dauphin County

Dear Ms. Bebenek:

Capital Region Water (CRW) appreciates the opportunity to provide comments on Draft NPDES Permit No. PA0027197 (the Draft Permit), issued to the Harrisburg Advanced Wastewater Treatment Facility (AWTF) by the Pennsylvania Department of Environmental Protection (PADEP). CRW is primarily concerned about the proposed limits for total residual chlorine (TRC), which are only one-tenth of the current limits and would significantly impair CRW's ability to properly disinfect its treated effluent. In addition, CRW has a number of comments and suggestions concerning other terms and conditions contained in the Draft Permit, all of which are described in detail below.

I. Total Residual Chlorine Limits (Part A.I.A, Page 3)

The Draft Permit includes a 90 percent reduction in the current limits for TRC, from 0.5 mg/l to 0.05 mg/l as a monthly average, and from 1.6 mg/l to 0.16 mg/l as an instantaneous maximum, to be achieved at the conclusion of a 12-month compliance schedule. Please refer to Part A.I.A, Page 3. In order to allow a proper opportunity for full review and comment, PADEP should have provided details of all calculations leading to the proposed limits. Regardless, however, CRW believes that these limits were inappropriately calculated, would preclude achievement of fecal kill requirements using existing disinfection technology at the AWTF, would force CRW to implement alternative disinfection technologies at significant cost, and cannot be met within the compliance period PADEP has proposed. CRW requests that the proposed TRC limits be recalculated, and the compliance schedule extended, if necessary, to allow CRW sufficient time to comply. Alternatively, CRW requests a variance from the applicable TRC standard to allow continued compliance with both fecal coliform and TRC limits. Note that a variance may also be required if CRW is unable to acquire

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sufficient additional property to allow for installation of alternative disinfection and/or dechlorination systems, as discussed below.

A. TRC Limits Should Be Recalculated

CRW recognizes that use of the default dilution factors of 1 to calculate both acute and chronic water quality-based effluent limits (WQBELs) may not be appropriate for a river as large as the Susquehanna due to the high velocity and shallow depth. However, CRW does not believe that the partial mix factors used in the Draft Permit were calculated correctly. The Draft Fact Sheet did not include the basis for the calculation of the partial mix factors, but the methodology should be based on empirical equations that calculate the distance and time to complete lateral mixing, as described in U.S. EPA's Technical Support Document for Water Quality-Based Toxics Control (1991 edition, p77). A partial mix factor is calculated as the ratio of the time to complete lateral mixing compared to the 15-minute and 12-hour acute and chronic durations applied for TRC.

Preliminary analysis conducted for CRW was able to back-calculate the assumptions underlying the proposed TRC limits. CRW was able to replicate PADEP's partial mix factors presented in the Draft Fact Sheet using the assumptions listed below in **Table 1**.

Table 1 – PENTOXSD Assumptions used by CRW to Replicate PADEP's Partial Mix Factor Calculation

Parameter	Assumed Value	Source
m	0.315	Default in PENTOXSD
Stream width (w)	1066.5 m	Measured in GIS
Flow velocity at low flow (u)	0.213 m/s	Estimated from HEC-RAS[1]
Water depth at low flow (d)	0.652 m	Estimated from HEC-RAS[1]
Channel slope (s)	0.00015 m/m	Estimated from HEC-RAS[1]
Lateral dispersion coefficient (D_y)	0.6	Equation 16 in EPA 1991[2]
Design flow	37.3 mgd	Fact Sheet
7Q10 flow	3,200 cfs	Fact Sheet

Notes: 1. HEC-RAS model developed by the United States Army Corps of Engineers and modified by CRW to model the 7Q10 flow used by PADEP in the Draft Fact Sheet. Attachment 1.
2. EPA. 1991. Technical Support Document for Water Quality-based Toxics Control (TSD). EPA/505/2-90-001. Attachment 2.

The partial mix factors are calculated by first calculating the distance to complete mix using Equation A1a in Appendix A to the Technical Guidance for PENTOXSD for Windows Single Discharge Wasteload Allocation Program for Toxics Version 2.0[1] (DEP 2023). Using the assumptions listed in **Table 1**, CRW calculated the distance to complete mix to be 6,258,785 meters (3,890 miles).

[1] Pennsylvania Department of Environmental Protection (DEP). 2023. Technical Guidance for PENTOXSD for Windows PA Single Discharge Wasteload Allocation Program for Toxics Version 2.0.
https://greenport.pa.gov/elibrary/GetDocument?docId=5333779&DocName=TECHNICAL%20REFERENCE%20GUIDE%20(TRG)%20PENTOXSD%20FOR%20WINDOWS%20PA%20SINGLE%20DISCHARGE%.

The next step in calculating the partial mix factors is to adjust the stream width to account for the fact that the stream is wide (Equation A1b in DEP 2023), and then to estimate the time to complete mixing using Equation A2 in DEP 2023. Using the assumptions in **Table 1**, this analysis yields an AFC partial mix factor of 0.0056 and a CFC partial mix factor of 0.039 (close to the DEP AFC partial mix factor of 0.005 and CFC partial mix factor of 0.035).

Since the distance to complete lateral mixing needs to be close to 4,000 miles to match the partial mix factors cited in DEP's Fact Sheet, DEP's assumptions are clearly unreasonable and cannot be used to assess the lateral mixing extent in the 15-minute and 12-hour durations associated with the acute and chronic effluent limits. While there is uncertainty in the extent of lateral mixing in the Susquehanna River downstream of the AWTF outfall, complete lateral mixing is likely to occur by Three Mile Island due to the large bend in the river and the downstream hydroelectric plant (**Figure 1**), far closer than 4,000 miles.

In addition, CRW notes that the default parameters used in the PENTOXSD equations are not applicable to the Susquehanna River or to CRW's outfall.

- The parameter m is described in the TSD as "a parameter whose value depends on the degree of uniformity used to define 'complete mixing' and on the transverse location of the outfall in the stream" (EPA 1991 at 77). The default value used by DEP (0.315) is close to the value given by EPA for a shoreline discharge. CRW's outfall is a 3-port diffuser located near the middle of the channel between the shoreline and Redbuds Island. The diffuser will enhance mixing and will result in a lower value for the parameter m, resulting in a shorter distance to complete mix (see EPA 1991 at 77).
- The lateral dispersion coefficient (Dy) can vary significantly depending on the characteristics of the channel cross section from the default value of 0.6 in Equation 16 of the TSD. Near the AWTF outfall, the Susquehanna River is characterized by islands across the cross section. Additional analysis would need to be completed to justify the use of the default lateral dispersion coefficient in this case. EPA (1991) indicates that "the coefficient [...] can vary from 0.3 to above 1.0 depending on the type and degree of irregularity of the channel cross-sections."
- The islands in the river limit the width and flow available for mixing, especially for the 15-minute mixing time associated with the acute partial mix factor. The use of the full river width and flow is overly conservative in this case.

Based on this assessment, significant additional dilution is occurring that is not represented in PADEP's calculations of the proposed TRC limits. Use of inappropriate partial dilution factors likely resulted in proposed TRC limits that are more stringent than necessary considering the configuration of CRW's diffused discharge and the physical conditions present in the Susquehanna River. CRW requests that DEP recalculate the partial and complete mix factors using methods that address the technical concerns identified by CRW, and that those calculations be supplied to CRW for review before the Draft Permit is finalized.

If DEP uses the PENTOXSD analytical model to develop revised partial mix factors, additional analysis must be completed to justify the parametrization given following:

- impact of CRW's diffuser on mixing and dilution,

- uncertainties in the lateral dispersion coefficient, and
- the irregular nature of the cross section due to the islands in the vicinity of the outfall, and the location of the outfall near the middle of the river.

This information should be included in DEP's analysis of the acute and chronic partial mix factors for CRW's TRC WQBELs.

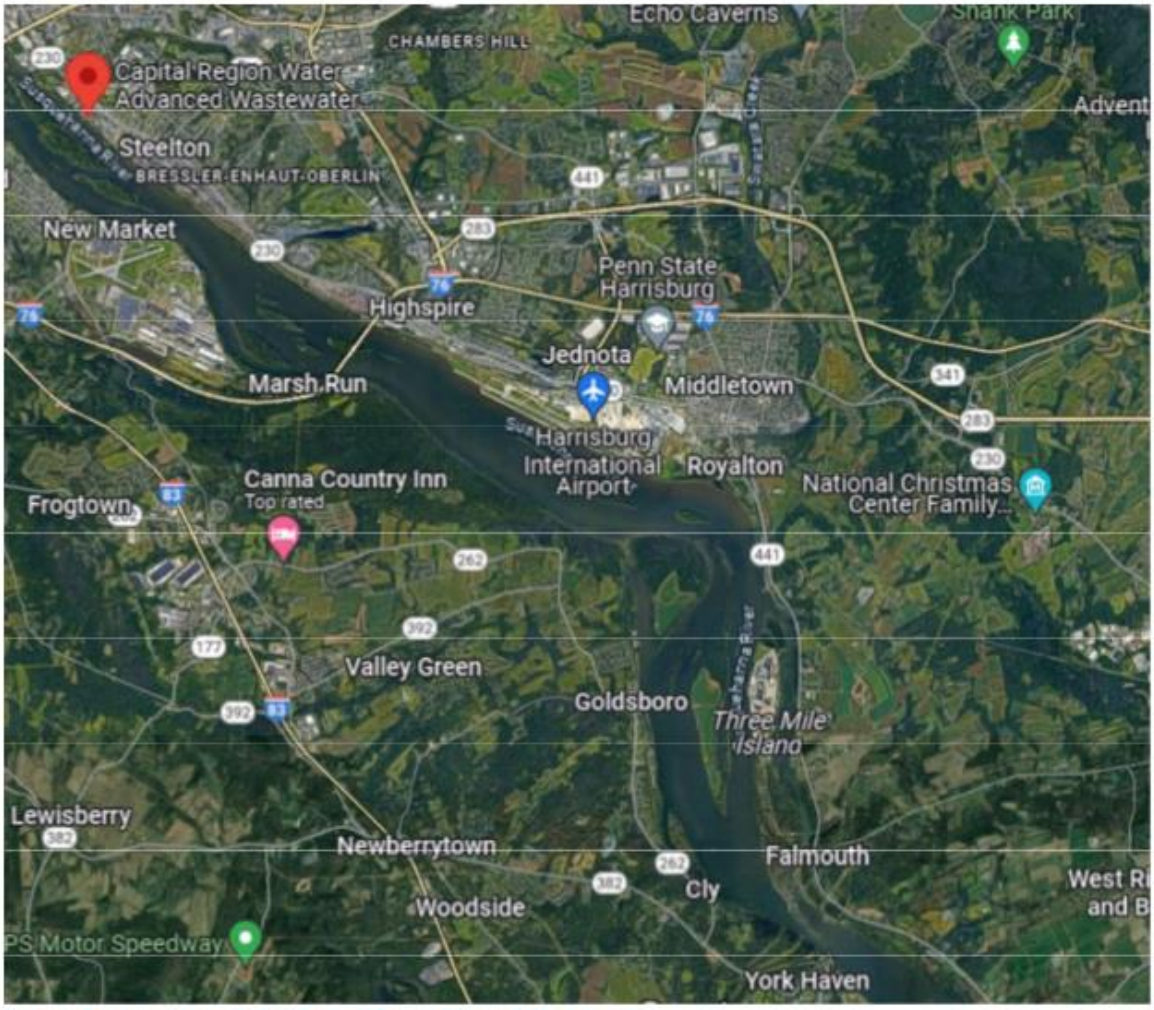

Figure 1 – Location of CRW's AWTF and Three Mile Island

If additional modeling or analysis is required to determine an appropriate WQBEL, CRW recommends that at least 12 months of additional time be added to the TRC compliance schedule to allow for implementation of a dye study at low flow conditions. An analytical model such as CORMIX could be used but would also require additional time to calculate and comply with an appropriate WQBEL.

B. Proposed TRC Limits Would Preclude Attainment with Fecal Coliform Limits

CRW chlorinates its effluent as necessary to comply with monthly average limits for fecal coliform of 2,000 colonies/100 ml October 1 – April 30 and 200 colonies/100 ml May 1 – September 30 (Part I.A, p3). CRW carefully manages chlorine dosages to meet the current TRC limits of 0.5 mg/l as a monthly average and 1.6 mg/l as an instantaneous maximum. Reducing chlorination sufficient to meet the proposed TRC limits would prevent CRW from achieving sufficient fecal kill during disinfection to meet the applicable fecal coliform limits using existing disinfection and dechlorination technologies in place at the AWTF. As a result, if PADEP intends to retain the proposed TRC limits included in the Draft Permit, CRW requests that PADEP consider a variance from the water quality standards to avoid fecal coliform violations, which are less desirable from a public health perspective. If PADEP determines not to consider a variance, CRW would need a compliance schedule of at least 4 to 5 years (after a study is completed to recalculate an appropriate WQBEL) to evaluate additional disinfection and dechlorination technologies and practices, as described below.

C. Alternative Technologies Would Be Required to Meet Proposed TRC Limits

Because the current disinfection technologies and practices would not allow CRW to meet both the fecal coliform and proposed TRC limits contained in the Draft Permit, evaluation and implementation of alternative technologies and practices would be required. Options may include replacing chlorination with ultraviolet disinfection, dechlorination compounds, alternative chemical disinfectants, or some combination.

Ultraviolet (UV) disinfection systems utilize electromagnetic energy emitted from mercury arc lamps to disrupt the genetic material (DNA and RNA) in microorganisms, effectively preventing their reproduction. The effectiveness of UV disinfections systems is dependent on a number of factors, including wastewater characteristics such as concentration of colloidal and particulate substances, UV transmittance, undisinfected indicator organism concentrations, and UV system design criteria such as UV dose and hydraulic head-loss. The wastewater characteristics, such as concentration of colloidal and particulate substances, must be evaluated to determine whether UV might be effective at CRW, where primary and secondary treated wastestreams are blended before disinfection during wet weather conditions. This blended flow may have low UV transmittance, high total suspended solids concentrations, and high particle sizes, all of which must be evaluated to ensure that a UV system would provide effective disinfection.

If effective, a UV disinfection system would require a substantial investment, and acquisition of additional land, as well as additional time to install. The current footprint of the AWTF is not sufficient to install a UV disinfection system. The capital cost of such a system has been estimated at approximately $25 million. However, it is difficult to account for current supply chain issues, changes in raw material costs, and constructability challenges that could increase the investment and time required. The estimate provided to CRW is only a Class 5 cost estimate at this point, with accuracy ranging from -50% on the low side and +100%

on the high side. The estimated time for construction of a new UV disinfection system can range from 4 to 5 years, which would include 6-12 months for studies and design, followed by 54-60 months for land acquisition, construction, and operational handoff. Additionally, a small-scale pilot study may be necessary as a first step to determine applicability of this technology which would extend this timeframe beyond the 5-year estimate.

Pending the outcome of the studies described above, CRW currently believes that UV disinfection likely would be required to meet the proposed TRC limits due to the variability in flow volume from dry weather to wet weather conditions experienced at the AWTF. If chlorination continues, however, evaluation of dechlorination compounds would require a study of the efficacy of alternative compounds at various dosages. If the required dosage cannot be accomplished within the existing facility design, then additional studies would be needed to determine the enhanced facility modifications, associated design, and installation requirements. Additional land would also need to be acquired, because the current footprint of the AWTF cannot accommodate additional dechlorination facilities. CRW believes this process could take an additional 4 to 5 years (after a study is completed to recalculate an appropriate WQBEL).

Finally, CRW is aware that alternative chemical disinfection methods, including peracids such as peracetic acid or performic acid, a combination of chemical disinfectants, or a chemical disinfectant combined with UV, have been found effective in some studies. Bench and pilot studies would be needed to better understand the design doses necessary, as well as the capital investment and life cycle costs, to select an alternative disinfection technology or approach that warrants further evaluation and discussion with PADEP.

D. The Proposed TRC Limits Cannot Bet Met Within the Proposed Compliance Schedule

The Draft Permit includes a 12-month compliance schedule for CRW to design and construct facility improvements to meet the more stringent TRC WQBELs. As discussed in detail above, CRW's AWTF does not currently have the ability to dechlorinate its effluent, so in order to meet a more stringent effluent limit, CRW will need to complete land acquisition and a facility upgrade. This is not feasible within the 12-month compliance schedule.

CRW's findings outlined above indicate that the WQBELs will need to be recalculated. If DEP's revised TRC WQBELs results in more stringent TRC limits, CRW requests a up to a 60-month compliance schedule to comply with this new limit, with interim TRC limits equal to the effluent limits in the previous permit remaining in place until design and construction is completed.

In addition, given the uncertainties related to dilution described above, CRW may wish to complete a detailed study to develop a site-specific dilution factor to be used to calculate the TRC WQBEL. Therefore, CRW requests that the permit includes an off-ramp that allows time to conduct a study to re-calculate the WQBELs. The need for this study is not known until DEP revises the WQBELs based on CRW's comments. Depending on DEP's response it may take CRW approximately 15 months to conduct the required dilution study.

II. Other Proposed Limitations

A. Oil and Grease Limit (Part A.I.A.1.b, page 4)

The Draft Permit includes a proposed prohibition on the discharge of oil and grease, as follows:

> 1. The permittee may not discharge:
>
> ***
>
> b. Oil and grease in amounts that cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline, or that exceed 15 mg/l as a daily average or 30 mg/l at any time (or lesser amounts if specified in this permit). (25 Pa. Code § 92a.47(a)(7), § 95.2(2)).

Draft Permit Part A.I.A.1.b, p4.

CRW requests clarification of when this prohibition would be applicable to the CRW discharge. For example, it is not clear that this prohibition could be met during times of bypass.

B. Sanitary Sewer Overflow Prohibition (Part B.I.H, page 22)

The Draft Permit includes a proposed prohibition on sanitary sewer overflows (SSOs), as follows:

> An SSO is an overflow of wastewater, or other untreated discharge from a separate sanitary sewer system (which is not a combined sewer system), which results from a flow in excess of the carrying capacity of the system or from some other cause prior to reaching the headworks of the sewage treatment facility. SSOs are not authorized under this permit. The permittee shall immediately report any SSO to DEP in accordance with Part A.III.C.4 of this permit.

Draft Permit Part B.I.H, p22.

CRW requests that this prohibition be modified to define an SSO as an overflow that reaches jurisdictional waters, defined as a "discharge" under state and federal law. Overflows or releases from the sanitary sewer system are not entirely preventable, even in the best-operated and best-maintained systems, and such overflows or releases that do not reach jurisdictional waters and are not caused by improper operation and maintenance of the AWTF and associated collection system should not be considered violations of the NPDES permit.

In addition, PADEP should ensure that the Draft Permit provisions governing SSOs are consistent with the applicable Consent Decree governing unauthorized discharges, including basement backups. For example, the proposed prohibition appears to include overflows from the sanitary sewer from "some other cause," which could include conditions in private laterals that are not CRW's responsibility.

C. Chlorine Dosage Optimization Requirement (Part C.VII.D, page 40)

The Draft Permit includes proposed chlorine dosage optimization, as follows:

> The permittee shall optimize chlorine dosages used for disinfection or other purposes to minimize the concentration of Total Residual Chlorine (TRC) in the effluent, meet applicable effluent limitations, and reduce the possibility of adversely affecting the receiving waters. Optimization efforts may include an evaluation of wastewater characteristics, mixing characteristics, and contact times, adjustments to process controls, and maintenance of the disinfection facilities. If DEP determines that effluent TRC is causing adverse water quality impacts, DEP may reopen this permit to apply new or more stringent effluent limitations and/or require implementation of control measures or operational practices to eliminate such impacts.

Draft Permit Part VII.D, p40.

As discussed in detail above, CRW believes that evaluation of alternative technologies or chlorine dosage adjustments will be required to meet both the proposed TRC limits and applicable fecal coliform limits. CRW has requested above that the proposed TRC limits be recalculated, that PADEP consider a variance from the applicable TRC water quality standard, and that additional time be provided in the form of a longer compliance schedule to meet any recalculated TRC limits.

It is unclear how the proposed chlorine dosage optimization requirement above will be implemented in coordination with CRW's efforts to meet the proposed (or recalculated) TRC limits. First, the requirement to "minimize the concentration of Total Residual Chlorine (TRC) in the effluent" is undefined, and inconsistent with the imposition of numeric limits for TRC. Second, as discussed above, it currently is not possible for CRW to meet both the proposed TRC limits and the applicable fecal coliform limits using its existing disinfection technologies and practices. Additional time will be necessary before the proposed optimization requirement can become effective and enforceable. Third, "adverse water quality impacts" are not defined, so it is not clear what levels of TRC can be discharged by CRW without causing such impacts. And if no such adverse water quality impacts exist now, there should be no need to impose reduced TRC limits on CRW's discharge at this time.

Therefore, CRW requests that the proposed chlorine optimization requirement be removed or clarified to better define applicable terms and to allow time to comply in coordination with efforts to comply with the proposed (or recalculated) TRC limits.

D. Prohibition on Acceptance of Hauled-In Wastes (Part C.VII.E, page 40)

The Draft Permit includes a new proposed prohibition on the acceptance of hauled-in wastes, as follows:

> The permittee shall not accept hauled-in wastes at the treatment facility under the following conditions, unless otherwise approved by DEP in writing:
>
> ***
>
> - When the instantaneous flow at the treatment facility exceeds 45 MGD (the Chapter 94 hydraulic design capacity of the facility multiplied by a peaking factor of three), and for 24 hours following exceedance of this threshold.

Draft Permit Part C.VII.E, p40.

CRW disagrees that the threshold for accepting hauled-in wastes should be set at 45 MGD (the Chapter 94 hydraulic design capacity of the facility multiplied by a peaking factor of three), and that the prohibition should continue for 24 hours. The proposed prohibition is not necessary to ensure compliance with CRW's effluent limits and would unnecessarily limit the ability of local customers to continue using CRW even if the AWTF is operating well below design capacity.

In addition, CRW will rely on hauled-in wastes for effective operation of its Energy Recovery Project, which is planned to begin construction in April 2024, as required by the applicable Consent Decree. The proposed prohibition will significantly hamper CRW's energy recovery efforts and is inconsistent with the applicable Consent Decree.

CRW requests that the proposed prohibition be removed from the Draft Permit, or revised to allow CRW to continue to accept hauled-in wastes at any time when flows are below 37.7 MGD. In addition, CRW requests that PADEP allow it to accept hauled-in wastes any time it is not necessary to blend primary and secondary treated flows, which can occur up to 50 MGD.

III. Proposed Monitoring Requirements

A. Total Aluminum Weekly Monitoring (Part A.I.A, page 3)

The Draft Permit includes proposed total aluminum monitoring once per week. CRW requests clarification of the basis for this proposed new monitoring requirement. CRW does not currently monitor for total aluminum and is not aware of any water quality concern related to total aluminum that would justify a new monitoring requirement.

B. Total Zinc Weekly Monitoring (Part A.I.A, page 3)

The Draft Permit includes proposed total zinc monitoring once per week. CRW requests clarification of the basis for this proposed new monitoring requirement. CRW has demonstrated historically low total zinc levels in evaluating biosolids, local limits, and priority pollutants testing, and is not aware of any water quality concern related to total zinc that would justify a new monitoring requirement.

C. Representative Sampling Requirement (Part A.III.A.1, page 13)

The Draft Permit includes a proposed representative sampling requirement, as follows:

> Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR 122.41(i)(1)). Representative sampling includes the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance, and changes in treatment plant loading. If possible, effluent samples must be collected where the effluent is well mixed near the center of the discharge conveyance and at the approximate mid-depth point, where the turbulence is at a maximum and the settlement of solids is minimized. (40 CFR 122.48, 25 Pa. Code § 92a.71)

Draft Permit Part A.III.A.1, p13 (emphasis added).

CRW requests clarification concerning how PADEP intends permittees to comply with the proposed definition of representative sampling. For example, the emphasized language above includes conditions that are necessarily non-representative of normal AWTF activity. It is not clear whether or how CRW should change its sampling practices or schedule to ensure that it complies with this provision.

D. Sufficiently Sensitive Test Methods Requirement (Part A.III.A.4, page 13)

The Draft Permit includes a proposed requirement to use sufficiently sensitive test methods, as follows:

> Test procedures (methods) for the analysis of pollutants or pollutant parameters shall be sufficiently sensitive. A method is sufficiently sensitive when 1) the method minimum level is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or 3) the method is specified in the permit or has been otherwise approved in writing by DEP for the measured pollutant or pollutant parameter. Permittees have the option of providing matrix or sample-specific minimum levels rather than the published levels. (40 CFR 122.44(i)(1)(iv))

Draft Permit Part A.III.A.4, p13.

CRW requests clarification of how PADEP expects permittees to comply with this provision. CRW intends to use test methods specified in the permit first. If no method is specified in the permit, CRW intends to use a method that has been approved under 40 CFR Part 136. CRW does not intend to use a test method that has not been specified in the permit or approved under 40 CFR Part 136 for compliance purposes.

IV. Proposed Reporting Requirements

A. Planned Changes to Waste Stream (Part A.III.C.2, pages 15-16)

The Draft Permit includes new proposed provisions requiring notification of planned changes to waste stream, as follows:

> Under the authority of 25 Pa. Code § 92a.24(a) and 40 CFR 122.42(b), the permittee shall provide notice to DEP and EPA as soon as possible but no later than 45 days prior to any planned changes in the volume or pollutant concentration of its influent waste stream as a result of indirect discharges or hauled-in wastes, as specified in paragraphs 2.a. and 2.b., below.

Draft Permit Part A.III.C.2, p15.

CRW recognizes that 40 CFR 122.42(b) requires "adequate" notice of such changes but does not believe that notice should be required 45 days prior to any planned changes. CRW requests that PADEP modify the language above to either mirror the federal regulation to require "adequate" notice or reduce the notification time to 30 days prior to any planned changes.

In addition, the Draft Permit prohibits introduction of new pollutants without written approval from PADEP, as follows:

> The permittee shall provide notification of the introduction of new pollutants in accordance with paragraph 2 above. The permittee may not authorize the introduction of new pollutants until the permittee receives DEP's written approval.

Draft Permit Part A.III.C.2.a, p16.

CRW recognizes that some planned changes that involve new pollutants might require written approval under 25 Pa. Code § 92a.24(a), but the proposed language is overly inclusive. State law requires written approval only under certain circumstances, as follows:

> Facility expansions, production increases, process modifications, or any change of wastestream, that may result in an increase of pollutants that have the potential to exceed ELGs or violate effluent limitations specified in the permit, or that may result in a new

> discharge, or a discharge of new or increased pollutants for which no effluent limitation has been issued, must be approved in writing by the Department before the permittee may commence the new or increased discharge, or change of wastestream. The Department will determine if a permittee will be required to submit a new permit application and obtain a new or amended permit before commencing the new or increased discharge, or change of wastestream.

25 Pa. Code § 92a.24(a).

CRW requests that the Draft Permit be modified to require advance approval by PADEP only when CRW plans to allow introduction of new pollutants 1) that may have the potential to exceed effluent limitation guidelines (ELGs) or violate effluent limitations; or 2) for which no effluent limitation has been issued. If there is no potential to violate permit limits, and if the pollutant already is limited in the permit, CRW should be allowed to accept the introduction of new pollutants without PADEP approval. Further, it is not clear how long the PADEP approval process is intended to take. CRW requests that the permit specifies a period during which PADEP will respond to any notification made under this requirement.

B. Reporting Requirements for Hauled-In Residual Waste (Part A.III.C.3.a, pages 16-17)

The Draft Permit includes new proposed provisions requiring documentation and monthly reporting on the receipt of residual waste, including information required to be maintained by the transporter under 25 Pa. Code § 299.219. CRW requests clarification on how PADEP intends permittees to comply with the proposed requirements. Because transporters are required to maintain this information themselves, is it sufficient for CRW to require transporters to provide copies of such documentation? CRW does not have sufficient staffing levels to obtain such information independently for every load of hauled-in residual waste.

The Draft Permit also includes a requirement that CRW receive and maintain a chemical analysis of any residual wastes received if the generator is required to complete such analysis under 25 Pa. Code § 287.51. CRW requests that the Draft Permit be revised to indicate that this information is required only from generators that that generate more than an average of 2,200 pounds of residual waste per generating location per month based on generation in the previous year, in accordance with 25 Pa. Code § 287.51.

C. Reporting Requirements for Hauled-In Municipal Waste (Part A.III.C.3.b, page 17)

The Draft Permit includes new proposed provisions requiring documentation and monthly reporting on the receipt of municipal waste, including BOD sampling, unless downstream influent sampling is performed, as follows:

> Sampling and analysis of hauled-in municipal wastes must be completed to characterize the organic strength of the wastes, unless composite sampling of influent wastewater is performed at a location downstream of the point of entry for wastes. The influent BOD5 characterization for the treatment facility, as reported in the annual Municipal Wasteload

> Management Report per 25 Pa. Code Chapter 94, must be representative of the hauled-in municipal wastes received.

Draft Permit Part A.III.C.3.b(ii), p17.

CRW requests clarification of the above language. CRW has installed a composite sampler just downstream of the hauled-in discharge point. Does this relieve CRW from the obligation to provide monthly reports on hauled-in municipal wastes, or only the provision to document the BOD5 concentration and load for all wastes received?

D. Solids Management Inventory (Part B.I.C.4.c, Page 20; Part C.IV.C, Pages 33-34)

The Draft Permit includes a new proposed requirement to submit a Solids Management Inventory if specified in Part C of the permit. Draft Permit Part B.I.C.4.c, p20. The Draft Permit also contains a proposed requirement to submit a Sewage Sludge Management Inventory, as follows:

> By March 31 of each year, the permittee shall submit a "Sewage Sludge Management Inventory" that summarizes the amount of sewage sludge and/or biosolids produced and wasted during the calendar year from the system. The "Sewage Sludge Management Inventory" may be submitted with the Municipal Wasteload Management Report required by Chapter 94. This summary shall include the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, "Improving POTW Performance Using the Composite Correction Approach" (EPA-625/6-84-008)), compared with the actual amount disposed during the year. Sludge quantities shall be expressed as dry weight in addition to gallons or other appropriate units.

Draft Permit Part C.IV.C, pp33-34.

CRW notes that, even using the methodology described in the U.S. EPA handbook, it will be difficult to reconcile the amount of sewage sludge and/or biosolids produced and wasted due to the amount of solids destruction in the AWTF, which is an anaerobic digestion facility. CRW requests clarification of how PADEP intends permittees operating anaerobic digestion to comply with this requirement.

V. CSO Requirements

A. Dry Weather Overflow Reporting (Part B.II.D.1.b, Page 29)

The Draft Permit includes a proposed requirement to submit a corrective action plan for dry weather overflows, as follows:

> If dry weather overflows are detected, the permittee shall, in addition to providing immediate notification to DEP in accordance with Part A.III.C.4.a of this permit, provide a plan and

> implementation schedule to correct the overflows with the DMR Supplemental Reports for CSOs.

Draft Permit Part B.II.D.1.b, p29.

CRW requests clarification of this requirement, particularly considering dry weather overflow reporting requirements contained in the applicable Consent Decree, which includes both immediate notification and 5-day follow-up reports that seem to be similar to the proposed requirement in the permit. Does PADEP intend this information to be submitted both in the 5-day written report required by the Consent Decree and the monthly DMR Supplemental Report?

B. Level Sensor Reporting (Part B.II.D.1.c, Page 30)

The Draft Permit includes proposed reporting requirements for level sensor exceedances, as follows:

> For all locations that have automatic level monitoring of the regulators, report all exceedances of the overflow level during the period of the report, including location, date, time, and duration of wet weather overflows.
> Draft Permit, Part B.II.D.1.c, p30.

CRW requests clarification of this provision. CRW does not currently deploy level sensors at any CSO locations that could provide the requested information, and requests confirmation that it is therefore not required to submit this information at this time.

Pursuant to the applicable Consent Decree, CRW intends to add monitoring capabilities at the following CSO regulators by March 2024:

Table 2. CSO Regulators Selected for CSO Activity Monitoring for Public Notification

CSO Regulator	Water Body	CSO Regulator	Water Body
CSO-004	Susquehanna	CSO-024	Paxton Creek
CSO-051	Susquehanna	CSO-031	Paxton Creek
CSO-010	Susquehanna	CSO-042	Paxton Creek
CSO-054	Susquehanna	CSO-048	Paxton Creek
CSO-020	Susquehanna	CSO-061	Paxton Creek

After these monitors become operational, CRW will be able to provide the level sensor information requested in the above provision of the Draft Permit for those regulators only.

C. CSO-Related Bypass (Part B.II.G, Pages 30-31)

The Draft Permit includes proposed language governing authorized CSO-related bypass, as follows:

> A CSO-related bypass of the secondary treatment portion of the POTW treatment plant is authorized only when (1) the permittee is implementing Nine Minimum Controls and the Long Term Control Plan, (2) it is in accordance with the provision of 40 CF 122.41(m), and (3) the flow rate to the POTW treatment plan, as a result of a precipitation or snow-melt events, exceeds 45 MGD. Bypasses that occur when the flow at the time of the bypass is less than the above specified flow rat[e] are not authorized under this condition.

Draft Permit, Part B.II.G, p31.

CRW requests clarification of the requirement to be implementing the Long-Term Control Plan (LTCP) in order for a CSO-related bypass to be authorized. The applicable Consent Decree requires submission of a LTCP on December 31, 2024. However, PADEP has previously approved a LTCP applicable to CRW. Is the requirement to be implementing the LTCP satisfied by the previously approved LTCP and/or the Consent Decree requirements related to development and submission of a LTCP, such that CSO-related bypass is authorized?

VI. Conclusion

CRW appreciates PADEP's consideration of these comments, as well as the efforts of the PADEP permitting team in discussing and resolving other issues of concern to CRW prior to issuing the Draft Permit. We will be in touch to schedule a meeting to discuss these comments after you have had an opportunity for review.

Sincerely yours,

Jess Rosentel
Chief Operations Officer – Wastewater

cc Ms. Charlotte Katzenmoyer, CRW
Mr. David Stewart, CRW
Mr. Jinsu Kim, PADEP

Kim, Jin Su

From: Fulton, Jennifer <Fulton.Jennifer@epa.gov>
Sent: Friday, December 15, 2023 10:09 AM
To: Kim, Jin Su
Cc: Furjanic, Sean; Schumack, Maria; Martin, Daniel; Bebenek, Maria; Martinsen, Jessica; Hales, Dana
Subject: [External] PA0027197 Harrisburg Advanced Wastewater Treatment Facility

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Jinsu,

According to our Memorandum of Agreement, the Environmental Protection Agency (EPA) Region III has received the revised draft National Pollutant Discharge Elimination System (NPDES) permit for:

Harrisburg Advanced Wastewater Treatment Facility
NPDES Number: PA0027197
EPA Received: November 15, 2023
30-day response due date: December 15, 2023

This is a major permit that discharges to the Susquehanna River, and is being revised to address the permittee's and EPA's comments on the draft permit EPA received June 30, 2023. EPA has chosen to perform a limited review of the draft permit based on the proposed changes. EPA has completed its review and offers the following comments:

1. It is noted that the permit includes the previously imposed CSO-related bypass condition. We request the fact sheet include some additional information regarding the bypass. We would ask that PADEP verify in the fact sheet that the CSO-related bypass at the plant meets the minimum treatment requirements under the CSO Policy (primary clarification and solids and floatables removal and disposal, and disinfection where necessary). Additionally, please clarify whether this bypass discharges through the main outfall at the plant, or whether it has its own separate outfall. If the CSO-related bypass has a separate outfall, it would be necessary to ensure the appropriate technology and water quality-based requirements were evaluated and imposed.
2. In the fact sheet, the permittee's email was attached, but the actual comments were not included. We request a copy of those comments. It doesn't appear that many changes were made based on the permittee's comments, but some location descriptions for CSO outfalls were corrected. It isn't clear if these revisions were to correct location names or something more.

Please address the above and provide us with any changes to the draft permit and/or fact sheet, if necessary. Please contact Dana Hales on my staff via telephone at 215-814-2928 or via electronic mail at hales.dana@epa.gov.

Thank you,
Jen Fulton

Jennifer Fulton (she/her)
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