Pennsylvania Department of Environmental Protection

NORTHEAST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0020168**
Facility Type	**Sewage**	APS ID	**787214**
Major / Minor	**Major**	Authorization ID	**1460946**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**East Stroudsburg Borough Monroe County**	Facility Name	**East Stroudsburg Borough WWTP**
Applicant Address	24 Analomink Street PO Box 303	Facility Address	101 Forge Road
	East Stroudsburg, PA 18301-2801		East Stroudsburg, PA 18301-2962
Applicant Contact	Kelly Lewis	Facility Contact	Guy Brink
Applicant Phone	(570) 421-8300	Facility Phone	(570) 421-0248
Client ID	71386	Site ID	305
SIC Code	4952	Municipality	East Stroudsburg Borough
SIC Description	Trans. & Utilities - Sewerage Systems,	County	Monroe
Date Published in PA Bulletin	October 12, 2024; Redraft TBD	EPA Waived?	No
Comment Period End Date	December 26, 2024; Redraft TBD	If No, Reason	Major; Antibacksliding Exception
Purpose of Application	Application for a renewal of an NPDES permit for discharge of treated Sewage		

Internal Review and Recommendations

This Addendum is for a 2.25 MGD Redraft NPDES (Major Sewage/POTW) Permit to address permit changes made in response to Public Comments. A public hearing has also been scheduled during the Redraft NPDES Public Comment period due to sufficient public interest. The meeting will be held at 5pm, Thursday, November 6, 2025, at the East Stroudsburg Municipal Building, 24 Analomink St., East Stroudsburg, PA 18301.

Changes to Previous 9/30/2024 Draft NPDES Permit:

- **Part A.I.B and Part C.III.A, page 25**: Revised Final WQBELs for Total Copper, Benzo(a)Anthracene, and 3,4-Benzofluoranthene due to updated Reasonable Potential Analysis (below) incorporating corrected Q7-10/Low Flow Yield (LFY).
- **Part A.I.C**:
  - Deleting Chloroform, Total Thallium and Free Cyanide monitoring due to updated Reasonable Potential Analysis (below) incorporating corrected Q7-10/Low Flow Yield.
  - Reverting to existing Total Residual Chlorine (TRC) limits with significant digits added due to updated TRC Spreadsheet water quality modeling (below) incorporating corrected Q7-10 low flow value and present DEP Target Quantitation Limit (0.02 mg/l). Part C.I.D Chlorine Minimization condition applies.
  - Quarterly PFAS-related monitoring (PFOA, PFOS, HFPO-DA and PFBS) has been imposed for a Major STP that accepts wastewater from a known or suspected PFAS source industrial category Industrial User (a/k/a indirect discharger) identified in Part B.I.D.4, per the DEP PFAS Strategy. If non-detect at DEP TQL, monitoring requirements will cease.
- **Part A.I Supplemental Information Item (1), page 7**: The permitted hydraulic design capacity of 2.25 MGD has been included per most recent WQM permit.
- **Part C.III.A.3, page 28**: The Whole Effluent Toxicity (WET) Test dilution factors have been revised to be consistent with the site-specific Q7-10 low flow.

Approve	Return	Deny	Signatures	Date
X			James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	August 11, 2025
X			Edward Dudick, P.E. / Environmental Engineer Manager	August 14, 2025

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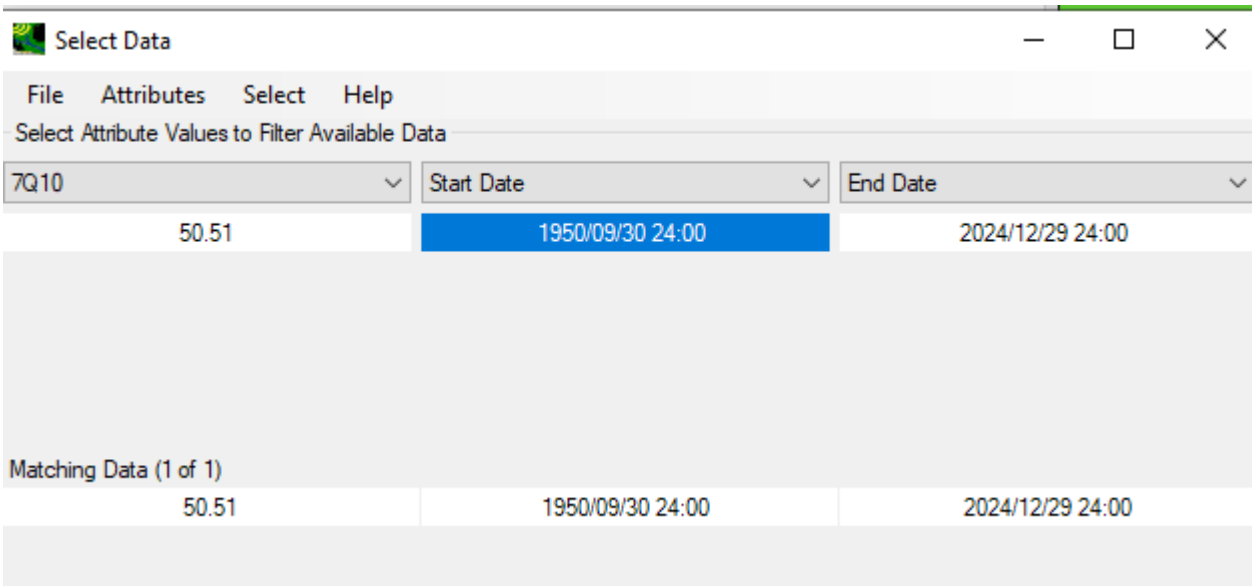
- **Part C.VI.A. page 32**: Clarification was added to the NPDES Permit Part C.VI.A table to clarify that Stormwater Outfalls Nos. 007 and 008 are considered represented by Outfall Nos. 005 and 006, as previously stated in the Draft NPDES Permit Fact Sheet.

Updated Reasonable Potential Analysis: See Draft NPDES Permit Fact Sheet for more information (especially regarding the Antibacksliding Analysis):

Revised Q7-10 low flow: The Q7-10 flow is actual or estimated lowest 7 consecutive-day average flow that occurs once in 10 years for a stream with unregulated flow, or the estimated minimum flow for a stream with regulated flow. The Q7-10 low flow is used in DEP Reasonable Potential Analysis to meet Chapter 96.3 (Water quality protection requirements) to protect the waters of the Commonwealth. Actual continuously monitored gage data is more accurate than the USGS PA Streamstats results (when there is a difference). The USGS Hydrologic Toolbox, now available via the USGS website, allowed for an up-to-date statistical analysis to determine the Q7-10 low flow at a nearby downstream gage location (USGS Gage# 01442500 (Brodhead Creek at Minisink Hills PA, 259 square mile drainage area) using 1950 – 2024 gage data. The gage is located ~2.77 miles downstream of the POTW outfall with similar drainage area characteristics (see below).

- The LFY Method (Gage location Q7-10 low flow/square miles of drainage area) resulted in a watershed LFY of 0.1950 CFS/square mile. The new LFY and USGS Gage location (end of reach) information was incorporated into the updated Reasonable Potential Analysis.
- To account for the small difference in drainage area (between Outfall and Gage location), the PA Streamstats estimates of drainage area difference (see table below) results in a difference of 2 square miles. The difference was subtracted from the PA Streamstats-estimated Outfall No. 001 location drainage area for a more accurate drainage area, i.e. the POTW Outfall No. 001 drainage area was assumed to be 257 square miles. This equates to an Outfall No. 001 site-specific Q7-10 low flow of 50.11 CFS and 0.1950 CFS/Square Mile LFY. This is consistent with the DRBC Docket No. D-1987-015 CP-4 Section B.2: "Just downstream of the project discharge location at USGS Gage No. 01442500 (Brodhead Creek at Minisink Hills), the Brodhead Creek has an estimated seven-day low flow with a recurrence interval of ten years (Q7-10) of 33.0 mgd (51.1 cfs). The ratio of this low flow to the hydraulic design wastewater discharge from the 2.25 mgd WWTP is 15 to 1".
- Hydrologic Toolbox Output: This program was developed by the US Geological Service which are the experts in the field of hydrology. The Output below is for the downstream gage location.



For comparison of the two locations from PA Streamstats information:

Parameter	POTW Outfall No. 001	USGS Gage #01442500 – Brodhead Creek at Minisink Hills, PA using interpolation to stream

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Drainage Area	259 square miles (per USGS PA Streamstats-estimate variation due to GIS limitations). Adjusted by subtraction of 2 square miles to reflect more accurate Gage area determination.	259 square miles per USGS Gage data, which is assumed more accurate. 261 square miles per USGS with USGS PA Streamstats-estimate variation due to GIS limitations. The extra 2 square mile drainage area was assumed to be the additional drainage area between Outfall No. 001 and the gage location,
Forested Area	79.6931%	79.6297%
Glaciated Area	95.0971%	95.1359%
Precipitation	46 inches	46 inches
Q7-10 Low Flow by PA Streamstats regression equation calculation	30.6 CFS ± 57% standard error	30.9 CFS ± 57% standard error
DEP Calculated LFY from PA Streamstats (CFS/square mile)	0.1181 CFS/square mile (using 0.195 gage-derived LFY in Reasonable Potential Analysis)	0.1183 CFS/square mile
Elevation	371 Feet (per previous TMS determination)	301.25 Feet per USGS website (North American Vertical Datum of 1988).

Updated TMS Output:

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Copper	0.57	0.82	30.2	43.8	75.6	µg/L	30.2	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	25.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	237	AFC	Discharge Conc > 10% WQBEL (no RP)
Benzo(a)Anthracene	0.001	0.002	0.066	0.1	0.17	µg/L	0.066	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.001	0.002	0.066	0.1	0.17	µg/L	0.066	CRL	Discharge Conc ≥ 50% WQBEL (RP)

EastStroudsburgTM SPDFrev.pdf

Antibacksliding Exception: See the previous Draft NPDES Permit Fact Sheet for the Antibacksliding Analysis. Several monitored constituents (Lead and Thallium) no longer require monitoring per the updated Reasonable Potential TMS (incorporating updated LFY and USGS Gage location as end-of-reach).

Revised TRC Spreadsheet water quality modeling: Incorporating the revised Q7-10 low flow value and recalculated AFC Partial Mix Factor:

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TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — East Srroudsburg Borough WWTP

50.11	= Q stream (cfs)	0.5	= CV Daily
2.25	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	0.288	= 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 = 1.342	1.3.2.iii	WLA cfc = 4.488
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.500	5.1d	LTA_cfc = 2.609

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

Recalculated WET Test Dilution Series: Incorporating revised Q7-10 low flow:

Determine Target IWCc (If Chronic Tests Required)

(Qd x 1.547) / (Q7-10 x PMFc) + (Qd x 1.547)

[(2.25 MGD x 1.547) / ((50.11 cfs x 1) + (2.25 MGD x 1.547))] x 100 = TIWCc% = 6.495% (rounded to 7%)

Dilution Series = 100%, 60%, 30%, 7%, and 3% (per DEP WET SOP Table).

PFAS: Per the DEP PFAS Strategy, quarterly monitoring is required for PFOA, PFOS, PFBS, and HFPO-DA because the NPDES Permit Application indicates it has an Industrial User subject to 40 CFR 433 (Metal Finishing Point Source Category) which is a known/suspected PFAS source industrial category.

- The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in four (4) consecutive monitoring periods indicate non-detect results at or below DEP Quantitation Limits of 4.0 ng/l for PFOA, 3.7 ng/l PFOS, 3.5 ng/l for PFBS, and 6.4 ng/l for HFPO-DA. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) of “GG” on DMRs.
- NPDES Permit Part A.III.C.2 (Planned Changes in Waste Stream) notification requirements would be triggered by proposed acceptance of IW wastewater from the NPDES Permit Part B.I.D industrial categories (as opposed to sewage only). The NPDES Permit Application had indicated only sewage was received from that IU. The Department would re-evaluate any applicable requirements at that time.

Thermal Limits: Public comments raised the question of potential thermal limits for this discharge to the (TSF designated use) receiving stream to protect the (more protective) Cold Water Fishes (CWF) existing stream use. However, no thermal limits are required. Chapter 93.7 Thermal WQS and Chapter 96.6 (Heated wastewater discharges) apply to “heated wastewater”, not sewage, in the absence of any known stream impairment. The facility was discharging during the change in existing use, i.e. it was not causing thermal impacts at that time. See responses to public comments below for further information.

Public Comments: Public comments have been summarized for the sake of brevity and reduction of redundancy. Responses bolded.

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East Stroudsburg Borough's public comments on the Draft NPDES Permit (Public Upload No. 150055 (dated 12/23/2024, uploaded 12/24/2024).

Q7-10 Low Flow: The Borough objected to the Q7-10 used by PADEP (developed via the USGS PA Streamstats regression equations) to calculate WQBELs. The Borough noted the PA Streamstats estimate was lower than previous estimates, and that there is a downstream USGS Gage# 01442500 (Brodhead Creek at Minisink Hills PA) that allowed for more accurate calculation. USGS Gage #01442500 – Brodhead Creek at Minisink Hills, PA with a published drainage area of 259 mi2, is located approximately 2 miles downstream of the outfall. As the stretch of Brodhead Creek between Outfall 001 and the gaging station runs through a steep ravine with no significant contributing tributaries, the drainage area of the two locations is statistically equivalent. This equivalent drainage area is confirmed by the 2024 and 2019 Permit Fact Sheets issued by the Department. The permittee also cited a 2005 USGS Scientific Study (Paradise and Pocono Creek Watersheds) for a calculation of the USGS Gage# 01442500 (Brodhead Creek at Minisink Hills PA) Q7-10 low flow of 48 CFS for a 259 square mile drainage area (equivalent to a Low Flow Yield value of 0.185 CFS/square mile). **The Department used the USGS Gage data in the updated Reasonable Potential Analysis to calculate the watershed Low Flow Yield (LFY), now that the USGS Hydrologic Toolbox allows for up-to-date calculation of the Q7-10 low flow at the continuously monitored downstream USGS Gage location. See Reasonable Potential Analysis above for details. The previous Fact Sheet Q7-10 determination (1996 mixing study based) had been outdated.**

Requested Revised WQBELs and Monitoring Requirements: The permittee asked for changes in permit limits and monitoring requirements based on the use of the no-longer-supported 1996 Q7-10 low flow as follows:

Table 2: Borough's December 2024 WQBEL Analysis utilizing Q_{7-10} low flow conditions of 48 cfs.

Parameter	Draft Effluent Limitations				
	Mass Units (lbs/day)		Concentrations (mg/l)		
	Average Monthly	Weekly Average	Average Monthly	Daily Maximum	Instant. Maximum
Total Residual Chlorine (TRC)	XXX	XXX	0.5	XXX	1.64
Lead, Total (ug/l)	Report	Report	Report	Report	XXX
Thallium, Total (ug/l)	Report	Report	Report	Report	XXX
Zinc, Total (ug/l)	Report	Report	Report	Report	XXX
Copper, Total (ug/l)	0.59	0.91	31.2	48.7	78.0
Benzo(a)Anthracene (ug/l)	0.001	0.002	0.064	0.1	0.16
3,4-Benzofluoranthene (ug/l)	0.001	0.002	0.064	0.1	0.16
Cyanide, Free (ug/l)	No reasonable Potential – to be excluded from draft NPDES Permit.				
Chloroform (ug/l)					
Antimony, Total (ug/l)					
Arsenic, Total (ug/l)					
Selenium, Total (ug/l)					
Silver, Total (ug/l)					
1,4-Dioxane (ug/l)					

Note1: the analysis includes a discharge hardness of 149 mg/l and in-creek hardness of 53.5 mg/l.
Note2: TRC effluent limits would increase due to larger assimilative capacity of receiving stream.
Note3: parameters Free Cyanide and Chloroform would be removed from the draft NPDES Permit due to lack of Reasonable Potential.
Note4: Total Copper effluent limits would increase due to larger assimilative capacity of receiving stream.
Note5: organic parameter WQBELs are included for informational purposes only, as the Borough believes these two parameters present no Reasonable Potential due to non-detections and "J" value data from the Permit renewal application.

See updated Reasonable Potential Analysis (above) and TRC Spreadsheet Analysis for Revised Final WQBELs and monitoring requirements.

WWTP hydraulic design capacity: In the Draft Permit, the Department is proposing to reduce the permitted hydraulic design capacity of the WWTP from the current capacity of 2.25 MGD to a proposed capacity of 2.1 MGD. The Draft Permit contains a condition requiring the Borough to apply this reduced capacity of 2.1 MGD when preparing the annual Chapter 94 Wasteload Management Report. Further, the fact sheet states that for the next NPDES permit renewal, PADEP will reflect a value of 2.1 MGD as the permitted discharge capacity of the WWTP. The Borough strongly objects to the Department's

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proposal to re-rate the hydraulic design capacity through a NPDES Permit. The Department cites an outdated WQM Part II Permit (WQM Permit No. 4588409), dated November 1, 1988 as the basis for this proposed re-rate of the current NPDES Permit. The cited WQM Permit was superseded by the latest WQM Part II Permit No.4517402 dated 12/06/2017 (enclosed as Attachment B). The latest WQM Part II Permit clearly memorializes a hydraulic design capacity of 2.25 MGD and an organic design capacity of 3,825 lbs. per day. Further, under the conditions of the current and previous (2012 and 2019) NPDES Permit PA 0020168, the permitted hydraulic design capacity of 2.25 MGD was applied to determine effluent discharge limits for the East Stroudsburg Borough WWTP. This design capacity is consistent with DRBC Docket # D-1987-045 CP-4 (issued 06/09/2021) and the Chapter 94 Wasteload Management Reports filed with the Department over many years. For these reasons, the Borough strongly objects to the Department's proposal to reduce the hydraulic design capacity of the Borough's WWTP through a NPDES permit condition. The Borough requests that the Department maintain the existing hydraulic design capacity of 2.25 MGD. **The Department has revised the applicable NPDES Permit Part A.I permit language to reflect the most recent 2017 WQM Permit-identified 2.25 MGD hydraulic design capacity. At present there is no identified as-built/as-operated hydraulic restriction for the plant. The Department research determined the prior 2.1 MGD (1988 WQM permit) figure was due to a question of service areas at that time.**

Proposed WQBEL Limits for Organic Chemicals: As noted in the Borough's May 8, 2024 response to the Department's Technical Deficiencies Letter, PADEP is seeking to impose WQBELs for two new organic chemicals: Benzo(a)Anthracene and 3,4-Benzofluoranthene. The Borough noted that these two chemicals were identified as non-detectable in two of the three permit renewal effluent composite sample events, with an MDL of approximately 0.42 ug/l. The sample event on 6/30/2023 identified "estimated" values for these two parameters of 0.53J and 0.62J respectively. These estimated values were slightly above the MDL but well below the analytical laboratory's Practical Quantitation Limit (labeled as RDL on the analytical reports) of 1.6 ug/l.

- Pursuant to the Department's NPDES Permit Application Instructions, the Department requires applicants and their laboratories use the best available technology to achieve the lowest possible Quantitation Limit ("QL") for effluent analysis, particularly for parameters that are not usually tested for Discharge Monitoring Reports (i.e., Pollutant Groups 2 – 7). The Department recommends that applicants and their laboratories achieve the "Target QLs", where available. In this instance, both organic parameters were analyzed at concentrations well below their Target QL of 2.5 ug/l. The analysis clearly meets the intent of EPA's "Sufficiently Sensitive Methods" rule (79 FR 49001).
- Further, the Department's SOP Establishing WQBELs and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers SOP No. BCW-PMT-037 contains the following instructions where parameter detections are at or below the Target QL but above the applicable water quality criterion. "NOTE 5 – If the effluent concentration determined in B.1 or B.2 is a detection below the TQL but above or equal to the applicable water quality criterion, WQBELs or monitoring may be established for the pollutant." Note 5 from the SOP authorizes PADEP to exercise professional judgment on WQBELs where a detection is below a Target QL. Based on the fact that two of the three effluent sample events were non-detect at an MDL of approximately 0.40 ug/l (well below the Target QL), the Borough believes that the single sample event from 6/30/2023, with estimated detections of 0.53J and 0.62J respectively are not representative of actual values of either Benzo(a)Anthracene and 3,4-Benzofluoranthene as present in the effluent. This is due to potential analytical sensitivities (i.e., background "noise" resulting in false positive results) likely encountered at the method detection limits by the laboratory and due to their estimated "J" values being reported very close to the MDL of approximately 0.40 ug/l.
- Furthermore, there is no requirement or mechanism to report results with "J" qualifiers in the eDMR reporting system. By imposing limits for these organic chemicals that are well below the laboratory's Practical Quantitation Limit/RDL of 1.6 ug/l, the Department is creating a situation where the Borough will be burdened with the substantial cost of testing and reporting for these chemicals, with no realistic potential for the chemicals to ever be reported at a value other than "<0.0016 mg/l".

The Department understands this comment to be a request for deletion of these limits, but could not concur.

- **In practical terms, the EPA Sufficiently Sensitive Rule requires the Department to treat any reported insensitive non-detect (ND) concentration for a toxic pollutant as if the toxic pollutant is present at the insensitive ND concentration. If detected, the constituent's detected concentration is used in the Reasonable Potential Analysis (including water quality modeling). The detected concentrations of these two constituents triggered Water Quality-Based Effluent Limits (WQBELs) in the Reasonable Potential Analysis.**
    - **Per the Major Sewage NPDES Permit Application Instructions: "**Where a laboratory's QL is greater than the Target QL in Attachment B, but the Method Detection Limit (MDL) is at or below the Target QL, DEP will accept estimated values ("J" values) at the Target QL (e.g., "< 0.5 µg/L J")". **In short, a reported "J"**

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concentration means the constituent has been determined to be present at the identified "J" concentration (or not present if "<" is used). Per NPDES Permit Application Pollutant Group Table excerpt below (showing the maximum concentration and calculated max mass load), the constituents are present:

Benzo(*a*)Anthracene (µg/L)	0.53J	0.0040J
Benzo(*a*)Pyrene (µg/L)	<0.37	<0.0031
3,4-Benzo-fluoranthene (µg/L)	0.62J	0.0047J

- **The intent of both Federal and State regulations is the protection of the waters of the Commonwealth and public health, welfare, and safety. The low Chapter 93 WQS criteria triggered permit limits for the <u>detected</u> concentrations. The Department does not have the discretion to ignore the Chapter 93 Water Quality Standards or application information.**

- **The permittee did not conduct any additional sampling to establish whether the detections were "false positives" (the four sample option previously offered during the review process at the previous lab detection level) and/or to calculate the (minimum ten sample) Long Term Average Monthly Effective Concentration (LTAMEC) and daily Coefficient of Variability (COV) derived via EPA-approved statistical methodology.**
- **In terms of reporting requirements:**
  - **The NPDES Permit Part C.V (WQBELs below Quantitation Limit (for Benzo(a)Anthracene; 3,4-Benzofluoranthene) addresses WQBEL minimum reporting requirements below DEP TQL.**
  - **Other facilities often report "J" values (via EDMR) when the lab quantitation limit is above the DEP Target Quantitation Limit (TQL).**

<u>Meeting Request</u>: The Borough appreciates the opportunity to comment on the Draft Permit. If the Department is unwilling to make the changes requested in this comment letter, then the Borough requests a meeting with the Department before the Draft Permit is finalized. **The Department has issued the Redraft NPDES Permit to allow for a more productive meeting (if still wanted by the permittee). The permittee can also provide further public comment on the Redraft NPDES permit directly or via the to-be-scheduled Public Hearing.**

<u>10/30/2024 EPA Public Comment</u>: The 10/30/2024 EPA (Jennifer Fulton) E-mail included the following public comment: The draft permit fact sheet provides a summary table of Whole Effluent Toxicity test results from the previous permit term that analyzes NOEC/LC50 data. The approach for WET analysis currently used by PADEP requires a comparison of control and TIWC replicate data, consistent with the Test of Significant Toxicity (TST). While EPA acknowledges the provided summary indicates all of the tests have passed for all endpoints, it is our understanding that a comparison of the target in-stream waste concentration to the NOEC/LC50 is not the operative analysis used by PADEP in its current WET SOP. It is unclear, based on the information in the draft permit fact sheet, if the TST was used to evaluate the facility's WET data. The fact sheet would benefit from the inclusion of a summary that compares replicate data for the control to replicate data for the TIWC. Please provide the WET analysis spreadsheets for the tests indicated in the fact sheet so that EPA can complete its review.

- **<u>WET Test Summaries</u>: The 11/5/2024 DEP (Berger) E-mail forwarded the NPDES Permit Renewal Application Appendix B (Whole Effluent Toxicity (WET) Test Summary Reports) to EPA per their request.** The 11/7/2024 EPA (Andrew Moore) E-mail indicated its comment had been addressed.

EastStroudsburgWETSum.pdf

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- **TST Data Analysis:** In terms of the Appendix B available four (chronic) WET tests from the renewal application (On-Base# 128686, Appendix B (Whole Effluent Toxicity (WET) Test Summary Reports), see below. The dilution series used for the tests was: 100%, 60%, 30%, 8%, and 4%. The Target Instream Waste Concentration (TIWC) used for analysis of the results is: 8% (12.5 TUc).

	***Ceriodaphnia* Results (Pass/Fail)**		***Pimephales* Results (Pass/Fail)**	
Test Date	**Survival**	**Reproduction**	**Survival**	**Growth**
2021-11-30	Pass	Pass	Pass	Pass
2022-03-29	Pass	Pass	Pass	Pass
2022-06-21	Pass	Pass	Pass	Pass
2022-03-14	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.*

12/25/2024 Delaware Riverkeeper and Other Public Comments: 11/8/2024, 12/15/2024, and 12/15/2024, 12/23/2024, 12/24/2024, 12/25/2024, 12/26/2024 12/27/2024, 12/28/2024, and 12/29/2024 E-mailed public comments were received. Twelve (12) E-mails with overlapping comments were received (including requests for a public hearing). For brevity, redundant comments have been grouped, summarized, or omitted.

Request for public hearing: Multiple requests for a public hearing on the Draft NPDES Permit. **A public hearing on the Redraft NPDES Permit is being scheduled to solicit public testimony.**

Stream Protection:

- **Protection of Stream Use**: The lower Brodhead Creek is a cold water fishes (CWF) stream designated vital fresh water resource in Monroe County, both for its ecological significance and recreational use, providing economic benefits to the region and contributing to water quality for the headwaters that supply over 15 million people downstream. **The NPDES permitting addresses protection of the existing & designated Chapter 93 stream uses.**
- **CWF Existing Use**: From the DEP announcement, it appears that the Brodhead is not currently meeting its designated use of TSF and only meeting a CWF existing use; if that is the case, more protection is required now at this renewal time to ensure better compliance of point source dischargers with the designated use of the Brodhead Creek. Clearly a downgrade would not be in order based on the significance of the Brodhead to SPWs of the main stem and the importance of this TSF creek to the local economy. **In practical terms, the existing CWF use is more protective than the designated TSF (Trout Stock Fishes) use, because more stringent Chapter 93 Dissolved Oxygen (DO) Water Quality Standards apply. The previous NPDES permit addressed the CWF requirements and no "downgrading" of DO permit limits is proposed.**
- **Anti-deg Analysis Request**: A comprehensive antidegradation review is warranted to determine whether ESWWTP's discharges align with Pennsylvania's regulations on the CWF and MF designated receiving waters. **The receiving stream is not a High Quality (HQ) or Exceptional Value (EV) stream subject to Chapter 93 antidegradation protection. It is subject to Chapter 93 CWF existing use protection (more protective than TSF designated use protection) only. In practical terms, the stream was reclassified as a CWF after NPDES Permitting, so "grandfathering" applies when there is no known impairment.**
- **DRBC-designated Special Protection Waters:** This facility discharges to waters designated as Special Protection Waters under the DRBC Docket and regulations. The DRBC docket holder's WWTP discharges to the drainage area to the Middle Delaware SPW. The docket holder's WWTP discharge is required to comply with the SPW requirements, as outlined in Article 3.10.3A.2. of the DRBC Water Quality Regulations (WQR). WQR Article 3.10.3A.2.e.1). and 2). of the Commission's WQR states that projects subject to review under Section 3.8 of the Compact that are located in the drainage area of SPW must submit for approval a Non-Point Source Pollution Control Plan (NPSPCP) that controls the new or increased non-point source loads generated within the portion of the docket holder's service area which is also located within the drainage area of SPW. The service area of the docket holder is located within the drainage area to the SPW. The NPSPCP requirement is applicable to this project because the project expands the service area resulting in increased non-point source loads associated with this approval. However, the NPSPCP requirement is satisfied because the municipalities served by the WWTP (East

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Stroudsburg Borough, Smithfield Township, and Stroud Township) have adopted and implemented a stormwater ordinance in accordance with the Brodhead-McMichael Creek Watershed Act 167 Plan, approved by the PADEP on March 10, 2006. Please see Delaware Riverkeeper Network's concerns and comments below regarding the East Stroudsburg WWTP renewal for DEP's consideration which would be up for DRBC renewal and approval again in 2029. **The NPDES permitting took the existing DRBC Docket into account per Chapter 92a.12 and 92a.36. The Department would review any DRBC Docket update during the next NPDES Permit Renewal. No expansion of the POTW service area was identified in the NPDES Permit Renewal Application or public comment. Any proposed expansion of the existing POTW service area would be (separately) addressed under the Act 537 Planning and DRBC Docket.**

- **Cumulative Impacts on Watershed**: The impacts of cumulative pressures is also a major concern for Delaware Riverkeeper Network in addition to stormwater issues facing the watershed. DRN is concerned about the cumulative footprint and stressors facing this region of the Middle Delaware SPWs.
  - For example, in addition to this proposed East Stroudsburg renewal and the borough's second plant (Water Treatment Plant) there is also nearby and upstream the Brodhead Creek Regional WWTP located at 20 South Fourth St., Stroudsburg, PA. **The 2021 DEP macroinvertebrate sampling showed the stream was attaining downstream of the Outfall No. 001 (i.e. cumulative impacts did not impair water quality). Downstream NPDES permitted discharges will be separately evaluated during their NPDES Permit renewals.**
  - In addition, DRN has noticed other STPs in the vicinity within the Middle Delaware SPWs on the DRBC docket so request that this notice and others be considered with a cumulative footprint in mind by the multiple agencies entrusted in ensuring finite water is protected for all. Two recent DRBC dockets for the February 2025 docket alone include: WestRock Converting Company, LLC, D-1980-025-3, which is an application to renew the approval of an allocation of 15.438 million gallons per month (mgm) of surface water from the Mill Intake on Brodhead Creek for industrial cooling and industrial processes at the applicant's paper board mill. The project is located in the Brodhead Creek Watershed in Smithfield Township, Monroe County, Pennsylvania within the drainage area to the Middle Delaware, which the Commission has classified as Special Protection Waters. The second is Manwalamink Sewer Company, D-1988-034 CP-4. With an application to renew the approval of the existing 0.7 mgd WWTP and its discharge. The WWTP would continue to discharge treated effluent to Brodhead Creek at River Mile 213.0 - 0.6 (Delaware River - Brodhead Creek), via Outfall No. 001, within the drainage area of the section of the non-tidal Delaware River known as the Middle Delaware, which the Commission has classified as Special Protection Waters, in Smithfield Township, Monroe County, PA. And finally, Brodhead Creek Regional Authority, D-1991-001 CP-5. An application to renew and modify DRBC Docket No. D-1991-001 CP-4 to approve an expansion of the docket holder's public water supply service area into limited areas of Paradise Township, Pocono Township and Jackson Township, Monroe County. The Application also requests the docket be updated to formalize the inclusion of three groundwater sources from the docket holder's acquisition of the former PJJWA groundwater sources, water system infrastructure and water service area. The application requests a total allocation of 224.362 million gallons per month of surface water from Brodhead Creek and groundwater from six groundwater wells (three of which were acquired from PJJWA). The total requested allocation is the sum of the previously approved allocation plus the PADEP approved rates for the three newly acquired wells. The existing project withdrawals are located in the Lower Brodhead Creek, Lower McMichael Creek and Appenzell Creek Watersheds, within the drainage area of the section of the main stem Delaware River known as the Middle Delaware, which the Commission has designated as Special Protection Waters, in Stroud Township and Jackson Township, Monroe County, Pennsylvania. This is not an exhaustive search of stressors to the Brodhead Creek or Middle Delaware SPW but points to the valid need to consider all discharges cumulatively and to be the most protective to protect generations to come under our PA Environmental Rights Amendment found in Article I, Section 27 of the Pennsylvania Constitution which states: The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Death by a thousand cuts and with climate change requires holistic reviews.
    - **The NPDES permitting process addresses PA Constitution, statutory, and regulatory requirements to protect the environment. Brodhead Creek is attaining its existing and designated uses at the POTW discharge. This was confirmed at the POTW Outfall No. 001 location by downstream 2021 Macroinvertebrate sampling.**
    - **The DRBC Docket separately considered impacts on the DRBC-defined Special Protection Waters as well. The DRBC did not provide any comment on the Draft**

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NPDES Permit. Contact the DRBC directly about any concerns about existing/future water <u>withdrawals</u> as that is outside the scope of this NPDES (discharge) permit action. In practical terms, most water withdrawals result in the water being discharged back into the overall Brodhead Creek watershed.

- **Each individual NPDES discharger will be subject to its own NPDES Permitting requirements and public comment. NPDES permitting will take available site-specific stream information into account.**

- **<u>Stream Evaluation</u>**: Has a comprehensive study been conducted to evaluate the cumulative ecological impacts of effluent discharges on Brodhead Creek? **In 2021 macroinvertebrate sampling was done for a portion of Brodhead Creek.**
- **<u>Requested Stream Monitoring</u>**: Benthic data may be available by the county that brackets this discharger; DEP should review that data and require continued monitoring of benthic macroinvertebrates over time by the discharger to add to information on the impacts to aquatic life available. Temperature monitoring upstream and downstream of the discharger would also assist in ensuring aquatic life is adequately protected and special attention and potential actions should be considered to protect aquatic life especially during the hot summer months and the continued impacts of climate change that will be affecting trout waters and flows into the future. Additional monitoring parameters should be the bare minimum but not the norm for waters flowing into the main stem Delaware River SPWs.
  - **There is no regulatory requirement for permittees to conduct stream monitoring for an attaining stream.**
  - **No additional stream monitoring data/analysis was provided for Department consideration. 2021 Macroinvertebrate sampling (downstream of the POTW Outfall No. 001) indicated the receiving stream was attaining. Excerpt from <u>previous</u> NPDES Permit Renewal's Fact Sheet stated:**
    - December 7, 2015, Letter - The Association hired an Aquatic Biologist to study the macroinvertebrates in the stream above and below the treatment plant discharge. The study concluded that the number of macroinvertebrates declined below the treatment plant discharge as compared to above it, citing the use of chlorine for disinfection of the treated wastewater as a possible cause. The Association also raised a concern about foul odors coming from the treatment plant.
    - Response: Based on the fact the Index of Biotic Integrity (IBI) scores were very similar for the upstream and downstream stations sampled in the study, our regional Water Pollution Biologists concurred with the Association's Aquatic Biologist's findings that the scores suggest little or no organic impact between the stations. Had there been greater than an 11 point change in scores, that may have suggested that the stream is being negatively impacted. However, a 1.6 point change in IBI scores does not raise any significant concerns and would not likely show an impact on the receiving water.

<u>Future Increases in Discharge Rates</u>: Any proposed increase in discharge volume should be carefully scrutinized given the facility's current outflow of over 1 million gallons per day and the aging wastewater treatment technology in use. The East Stroudsburg facility's existing infrastructure and outdated technology are insufficient to support expanded capacity without risking further degradation of this sensitive ecological system. Additionally, the permit states that there are significant proposed volume expansions in the Marshalls Creek Watershed that are moving forward which will further strain an already ageing WWTP. This conflict between realistic capacity, and hypothetical capacity, and the ever growing urge to expand, despite clear and abundant problems with the out-dated technology of the WWTP are major threats to SPWs and degradation to Brodhead Creek.

- **<u>Facility Description</u>:** According to the March 3, 2020 Delaware River Basin Commission (DRBC) docket (DOCKET NO. D-1987-015 CP-4) for this facility, the East Stroudsburg existing WWTP consists of 2.25 MGD features two (2) separate treatment trains utilizing different treatment processes, followed by chlorine contact disinfection and sludge handling. The first treatment train is a 1.25 mgd dual stage trickling filter and the second treatment train is a 1.0 mgd sequencing batch reactor (SBR) plant divided between two (2) tanks. The existing WWTP facilities consist of a comminutor, a grit screen, and a distribution box for dividing influent flows between the two (2) treatment trains, the SBR treatment train, and the dual stage trickling filter train. The SBR treatment train consists of two (2) 500,000 gallon per day (gpd) SBR units, two (2) chlorine contact tanks, a dechlorination system, and two (2) aerobic digesters. The trickling filter treatment train consists of two (2) primary settling tanks, a primary trickling filter, a secondary trickling filter, two (2) final settling ranks, a chlorine contact tank, a dechlorination system (added to address NPDES Permit limits), and an anaerobic digester. The existing WWTP has a generator installed capable of providing standby power. The existing WWTP has a remote alarm system installed that continuously monitors plant

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operations. The docket holder has an emergency management plan (EMP) for the existing WWTP in accordance with Commission requirements. The project facilities are not located in the 100-year floodplain. Wasted sludge will continue to be hauled off-site in accordance with the NPDES permit for the facility. **This public comment has been cited to provide informational context.**

- **Request for scrutiny of increases in discharge volumes: The facility is permitted for a 2.25 MGD hydraulic design capacity and 2.25 MGD NPDES Permit Basis Flow (consistent with the Act 537 Sewage Plan). The WWTP has been receiving ~1 MGD annual average daily flows. There is existing available plant capacity to accept increased service area flows. In terms of the process for increased service area flows (new developments, new industrial sources, etc.):**
  - **The Department is unaware of any East Stroudsburg Borough POTW NPDES permit statements about "significant proposed volume expansions in the Marshalls Creek watershed that are moving forward". The POTW discharges directly to the Brodhead Creek. Without more information, the Department cannot further respond.**
  - **Any new sewage connections/development would be addressed under the Act 537 Plan/Chapter 94 requirements. No Act 537 Mailer has been received by the Department for any proposed large-scale project and/or new/expanded Industrial User discharge to the POTW.**
  - **NPDES Permit Part A.III.C.2 (Planned Changes to Waste Stream) notification requirements would apply to significant increase in loadings (other than sewage sources approved under the Act 537 Plan). The Department would review the notification and determine whether any new constituents or loadings have potential to impact the waters of the Commonwealth.**
  - **Contact the DRBC directly for its separate requirements triggered by any request for an expansion of the POTW service area.**
  - **A rerating request (for >2.25 MGD NPDES Permit-basis flow) would require Act 537 Planning and NPDES/WQM permitting, subject to public comment.**
- **Future Demands and Stricter WQBELs:** How does PA DEP ensure that ESWWTP's treatment capacity and operational practices are adequate to meet future demands and stricter Water Quality-Based Effluent Limits (WQBELs)? What enforcement mechanisms are in place to address the plant's variability in effluent quality and ensure compliance with applicable water quality standards?
  - **The Act 537 Plan addresses current and projected future sewage capacity requirements, with annual Chapter 94 Annual Municipal Wasteload Report requirements.**
  - **The NPDES Permit addresses expected discharge effluent variability in the monitoring & reporting requirements. The existing Part I NPDES Permit and Part II Water Quality Management (WQM) permits requirements also include: Operations & Maintenance (O&M) requirements; hydraulic and organic design capacities; etc.**
- **Plant Capacity Questions:** The public raised questions over the as-built/as-operated Treatment Plant's actual hydraulic capacity.
  - **This question is outside the scope of the NPDES Permit in the absence of any Chapter 94 Report-identified existing/projected overload. The proposed Final WQBELs (copper and several organic compounds) would not require plant capacity changes. Redraft NPDES Permit cover page Item 4 states: "**This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit**".**
  - **The Department agrees that there can be significant differences between permitted and as-built/as-operated Treatment Plant Hydraulic and/or Organic Design Capacities due to age of WWTP units/equipment and/or existing in-plant hydraulic restrictions. However, the 2.25 MGD Treatment Plant has available capacity at the present ~1 MGD annual average daily flows (2024 East Stroudsburg Borough Chapter 94 Report). The Department does not have information identifying an in-plant hydraulic or treatment capacity restriction. There is conflicting information about Treatment Train capacities in the available DEP Files:**
    - **NPDES Permit Renewal Application: Process Flow Diagram showed 1.1 MGD going to the SBR train and 1.2 MGD going to the Trickling Filter train for the 2.25 MGD permit basis-flow facility.**
    - **12/6/2017 WQM Permit No. 4517402: This permit was for replacement of raw wastewater pumps, grit removal equipment, and other associated appurtenances at the 2.25 MGD Treatment Plant. However, the WQM Permit Application Module 1 indicated Total Treatment Hydraulic Design of 0.75 MGD for the Trickling Filter train and 1.5 MGD for the SBR Process Train Split which was not otherwise explained or justified.**

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- **11/1/1988 WQM Permit No. 4588409: Expansion to 2.1 MGD hydraulic design capacity, with construction of screening device, grit chamber, comminutor, two (2) SBRs, two (2) chlorine contact tanks, and two (2) aerobic digesters. WQM Permit No. 4586405 remained in effect for ongoing construction. The NPDES Permit was noted to have a greater NPDES Permit-basis flow of 2.25 MGD. The lower 2.1 MGD capacity figure was tied to service area definition issues at the time (i.e. not identified hydraulic restriction).**
- **DRBC Docket: 1.25 MGD dual stage Trickling Filter and 1.0 MGD SBR treatment train (with two 500,000 GPD tanks).**

- **Insufficient Infrastructure and Outdated Technology: The public comment did not identify the "insufficient" infrastructure and outdated technology being referenced. The WWTP's age and WWTP treatment technology type are outside the scope of the NPDES permit if the WWTP can comply with the NPDES Permit conditions during the 5-year NPDES Permit Term. The Department lacks regulatory authority to require specific treatment technologies.** In terms of specific public comments:
  - **Trickling Filters comment**: Although there has been discussion about replacing trickling filters with additional SBRs, no proposal for an upgrade appears in the recent NPDES application. If the trickling filters show signs of inefficiency or fail to meet effluent limits, this is a compliance issue for the PA DEP. The DEP must require modernization of the treatment process to meet stricter standards, particularly as part of the permit renewal. **Trickling Filters are an old technology with known limitations, but can continue to operate if the effluent is compliant with permit requirements. The applicable "discussions" were not identified or summarized to allow for further Department response.**
  - **Sludge Drying Beds (Part C.II.C)**: The 2020 TRE Phase I Report noted that former sludge drying beds were still being used for biosolids storage, though they are reportedly no longer in use now. The facility must ensure that sludge management practices are consistent with permit requirements, as outdated storage methods could pose compliance issues if they risk leachate or runoff contamination. **The Sludge drying beds were permitted by a Water Quality Management permit. Any additional sludge storage (outside the treatment process) would be subject to PA Chapter 285 MSW waste storage requirements. The NPDES Permit Part C.VI Stormwater conditions address potential sources of stormwater contamination onsite (leachate or runoff), including sludge drying beds.**
  - **Best Available Technology Requirements**: For the protection of regional water quality and to comply with the Clean Water Act and the Environmental Rights Amendment, it is essential for the WWTP to employ the best available treatment technologies, maintain timely compliance, and uphold transparency in its operations. **There is no regulatory requirement to upgrade if the facility can meet the NPDES permit limits. The NPDES permitting took the PA Constitution, Federal Clean Water Act, PA Clean Stream Law, and other regulatory requirements into consideration. If the plant chose to upgrade, the Act 537 Planning might involve an evaluation of alternative technologies. The commentators can contact the Borough directly about the Borough's provisions for transparency in its operations in accordance with Federal, State, and local requirements.**
  - **UV Disinfection System Recommendation versus Existing Chlorine Disinfection**: We urge the DEP to require best available technologies (UV treatment) be required at this time and that no backsliding or relaxation of metals standards be allowed. DRN urges the DEP to enforce ABACT and best available UV disinfection upgrades for this facility as a voluntary requirement at this time to keep up with the curb of protections in the spirit of anti degradation. We understand this "renewal" is not considered an "upgrade" to the WWTP but this is word smithing on the back of precious cold freshwater – DRN insists this protective action is warranted and needed now to better proactively protect Special Protection Waters (SPW) of the Middle Delaware River and also assist the Brodhead to meeting its designated use. The immediate phasing out of chlorine disinfection would better protect Broadhead Creek and the trout and other aquatic life that call Broadhead Creek and the Middle Delaware River home while moving this WWTP into the next generation of overdue improvements.
    - **The Department cannot mandate treatment technologies. Chlorine disinfection (with dechlorination) is an acceptable widely-used disinfection technology that can be used in Special Protection Waters if adequately engineered and operated. The referenced PA Water Quality Antidegradation Implementation Guidance (ID# 391-0300-002, available via DEP E-library) ABACT (Antidegradation Best Available Combination of Technologies for Wastewater dischargers) permit limits are not mandatory for non-HQ/non-EV streams (and do not preclude chlorine disinfection with adequate dechlorination).**
    - **Total Residual Chlorine (TRC) is a non-conservative substance whose active ionic form is removed from the stream by chemical and biological processes, limiting potential cumulative**

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impacts downstream. The Reasonable Potential Analysis and TRC Spreadsheet addressed potential impacts of chlorine disinfection residuals.

O&M-related Comments:

- **Compliance with new permit conditions**: For Whole Effluent Toxicity (WET), careful adherence to new conditions is essential to avoid adverse effects on fish and other sensitive migratory species in Brodhead Creek, particularly during low-flow periods. **Compliance with permit conditions is always required.**
- **SBR Discharge Variability**: Regarding the Special Batch Discharge Condition for Sequencing Batch Reactors (SBRs), the addition of this new condition addresses the potential negative impact of high-intensity discharges on the receiving stream. Batch discharges can produce sudden spikes in pollutant concentrations, which may be particularly harmful to sensitive cold-water fisheries like Brodhead Creek. I cannot emphasize enough the importance of stringent limits and monitoring for these batch discharges to protect Brodhead Creek's vulnerable downstream ecosystem. **The flow-proportional 24-hour composite sampling requirement and standard monitoring frequencies addresses variations in site discharges, in addition to the referenced SBR condition.**
- **Inactive SBR Treatment Unit Start-up Requirements**: The 2023 inspection notes that SBR No. 2 was taken offline but may be reactivated. The PA DEP might consider this downtime an operational adjustment, but reactivating the unit could require additional monitoring to ensure compliance with treatment quality and flow rates, especially if flow capacity increases. How does the PA DEP plan to handle this issue? **The existing NPDES permit monitoring requirements are based on the 2.25 MGD NPDES Permit-basis flow (i.e. Annual Average Daily Flow), not the existing flows/loadings.**
    - **NPDES Permit Part A.III.A.1 (Representative Sampling) states: "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" (underlining added).**
    - **WWTP treatment units are routinely shutdown and restarted as part of normal operations & maintenance. In event of plant bypassing of a WWTP treatment unit, additional Part A.I Additional Requirements Item 4, Part A.I Additional Requirements (bypass sampling), Part A.II (Definitions – bypassing) and Part B.I.G (bypassing) requirements apply. The NPDES and WQM Permits both have Operations & Maintenance (O&M) conditions.**
- **Standard operating procedure manual for the ESWWTP**: How does the ESWWTP ensure compliance with its NPDES permit in the absence of explicit protocols for managing effluent quality and addressing exceedances? What measures are in place to protect downstream users of Brodhead Creek from potential risks posed by untreated or inadequately treated effluent? How does the plant plan to adapt its SOPs to address future regulatory requirements for emerging contaminants and increases in stormwater inflow?
    - **The NPDES Permit does not micromanage facility O&M. The NPDES/WQM permit application requirements do not include site SOPs. No "Standard Operating Procedures Manual" was provided in the application. Therefore, the Department cannot comment on site-specific SOPs/protocols. The commentators are free to contact the Borough for more information on its O&M Plan and Standard Operating Procedures (SOPs)/protocols.**
    - **The NPDES Permit Part B.I.E (Proper Operation and Maintenance) requires the facility to properly operate the facility to meet all permit requirements. The facility's WQM permits also require a site-specific O&M Plan (including site SOPs), which is a "living document" (updated as needed during the operating life of the facility). The O&M Plan includes manufacturer/supplier recommendations. The facility is also expected to learn from operational experience, with input from its certified operator(s) and technical consultants, and to otherwise update its O&M Plan to address any new permit requirements and/or address any issues as they arise.**
    - **The Part C.VI (Stormwater) requirements) includes a requirement for a Preparedness, Prevention, and Contingency (PPC) Plan that addresses spill, leaks, and other releases (including notification requirements). Any site PPC Plan should incorporate all other existing contingency planning to avoid conflicts.**

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- **The present daily max flows (see Draft NPDES Permit Fact Sheet compliance section for 12 months of EDMR data) do not show a need for an expanded High Flow Management Plan (HFMP). Annual Chapter 94 Annual Municipal Wasteload Report requirements include monitoring/reporting of hydraulic loading on the POTW.**

- **Sampling Standard Operating Procedures (SOPs) for the East Stroudsburg Wastewater Treatment Plant (ESWWTP)**: They exhibit several gaps that raise concerns. A key omission is the lack of protocols for monitoring or treating emerging contaminants such as PAHs, pharmaceuticals (from the hospital's wastewater), personal care products, plasticizers, PFAS, and microplastics. These pollutants, increasingly recognized for their water quality impacts and potential human health risks, require advanced treatment technologies such as granular activated carbon (GAC), reverse osmosis, or membrane filtration. The routine inclusion of sampling and testing for these emerging contaminants is essential to modernize the SOPs and safeguard both water quality and public health downstream. **See above responses. In addition:**
  - **PFAS monitoring has been incorporated per the DEP PFAS Strategy to gather information via an EPA approved test method.**
  - **In practical terms, the facility reports only receiving sewage from its industrial customers. Sewage is generally not expected to have elevated concentrations of the listed "emerging pollutants". NPDES Permit Part A.III.C.2 (Planned Changes in Waste Streams) notification requirements would trigger re-evaluation whether additional or more stringent permit limits are required if non-sewage is accepted. See Pretreatment-related comment responses below for discussion of hospital loadings.**
  - **Chapter 93 Rule-making would be required for new regulatory standards for new "emerging pollutants" to allow for determination of potential treatment requirements and site-specific design requirements. Chapter 92a.12(d, e) sets forth the process when new Chapter 93 WQS come into effect (after the regulatory public comment period) during the 5-year NPDES permit term and/or as part of the next NPDES permit renewal.**
- **Site O&M Plan SOPs**: Another area of concern is the insufficient detail provided in the SOPs regarding effluent quality assurance. Although the procedures mention daily recording of parameters such as pH, dissolved oxygen (DO), and chlorine residuals, they do not include specific enough protocols for ensuring compliance with Water Quality-Based Effluent Limits (WQBELs). Expanding the SOPs to include contingency plans for addressing such violations and protocols for managing exceedances is crucial for maintaining compliance and protecting downstream users of Brodhead Creek. **See above responses. Noncompliance would be reported, with the Department requiring corrective actions as appropriate. The last 12 months of Electronic Discharge Monitoring Reports (EDMR) reporting did not identify any exceedances from the listed constituents permit limits.**
- **Site SOPs**: Furthermore, while the SOPs specify routine inspections and greasing of equipment, they lack predictive maintenance protocols that could identify and address issues before failures occur. Predictive maintenance strategies, such as vibration analysis and thermal imaging, should be adopted to enhance equipment reliability and reduce unplanned downtime. This proactive approach would not only improve operational efficiency but also minimize the risk of unanticipated disruptions that could impact water quality. **See above responses. Any good O&M Plan addresses preventive maintenance and periodic inspections able to detect potential problems prior to their occurrence.**
- **SOP and PPC Plan Requirements**: Another issue in the listed procedures is the insufficient focus on environmental risks associated with operational failures. While the SOPs include safety protocols for handling chlorine and sodium bisulfite, they lack spill response protocols and comprehensive training programs. Potential environmental impacts, such as chlorine leaks or sludge mismanagement leading to leachate contamination, are not adequately addressed. Enhancing sludge handling procedures, conducting regular safety training, and developing an emergency response plan for hazardous chemical exposures or equipment failures are necessary to mitigate these risks and protect water resources. **The Part C.VI (Stormwater) PPC Plan requirements addresses spill response protocols, site-specific training requirements, contingency planning, and emergency responses in accordance with 25 Pa. Code § 91.34 following the guidance contained in DEP's "Guidelines for the Development and Implementation of Environmental Emergency Response Plans" (DEP ID 400-2200-001) including its stormwater NPDES-specific addendum. The DEP Guideline have requirements for training and emergency**

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response. Any additional site emergency or contingency planning would be incorporated directly or by reference into the site PPC Plan.

- **Stormwater-Related SOPs**: The storm event response plan also lacks robust strategies for managing combined sewer overflows (CSOs) and preventing stormwater from overwhelming the system, which could result in untreated discharges into Brodhead Creek. The absence of real-time monitoring of stormwater inflows and automated valve adjustments to stabilize flows during storms exacerbates the risk of system failures during high inflow events. Revising the storm event response plan to include these measures would significantly improve the plant's resilience to stormwater challenges and reduce the likelihood of environmental harm.
    - **There are no CSOs in the POTW collection system. Any Sanitary Sewer Overflow (SSO) is strictly prohibited by NPDES Permit Part B.I.H (SSOs).**
    - **The EDMR-reported daily max effluent flows do not presently indicate the need for an expanded site-specific High Flow Management Plan (HFMP) and/or any specific upgrades to the plant (i.e. new valving or SCADA process control) due to peak wet weather flows. Chapter 94 Annual Municipal Wasteload Reports include reporting of flows relative to the hydraulic design capacity, with Chapter 94 regulatory requirements triggered in event of any future reported hydraulic overloading due to Stormwater Inflow & Infiltration (I&I) issues.**

Public comments on Thermal Impacts:

- Effluent flow rates from the East Stroudsburg Wastewater Treatment Plant (ESWWTP) average between 0.9 and 1.3 million gallons per day (MGD), with daily peaks exceeding 2.4 MGD. This substantial discharge constitutes a significant proportion of the base flow in Brodhead Creek during summer low-flow conditions. During these periods, the plant's effluent can dominate the hydrology of the receiving water, significantly influencing the creek's thermal regime due to the typically higher temperature of effluent compared to natural stream water. This hydrological dominance amplifies the thermal impact, especially in shallow areas where mixing is limited, posing a serious threat to the water quality of Brodhead Creek. **This is not an effluent-dominated stream. The ratio of the Q7-10 low flow to the hydraulic design wastewater discharge from the 2.25 mgd WWTP is ~15 to 1 (i.e. dilution).**
- According to tests in the application dated 11/30/21, Temperature of the effluent is very concerning for a sensitive cold water fishes and MF designed receiving waters. If you for instance, look at the 11/30/21 test, effluent temperature was 24.7-26.4C, vastly exceeding the cold water fishes designation. This has the potential to significantly harm these species, especially when such temperatures occur during summer months. The applicant must control effluent temperature to below the CWF levels. According to tests, dated 6/21/22, in the application, once again we see temperatures vastly exceeding the CWF threshold, of 24.2-26.3°C. Even at the low end, that's over 75°F – the CWF threshold is below 70°F. By their own submissions, the applicant is proving harm to the CWF threshold of the stream. Why is the WWTP permitted to discharge temperatures well exceeding to CWF threshold into a CWF stream in the first place as evidenced by the tests in the application?
    - **The Thermal Water Quality Standards apply to heated wastewater discharge (Chapter 93.7; Chapter 96.6), not treated sewage. The biological sewage treatment process generates some limited biological heat, but is self-limited to what the microbes can tolerate, and is subject to environmental cooling during conveyance and treatment prior to discharge (i.e. sewage temperatures are usually not far from ambient temperatures).**
    - **In the absence of any known non-attainment due to POTW discharge, there is no need for thermal limits to protect the receiving stream.**
    - **In practical terms, treated sewage is assumed to have a default continuous average 25 °C (77 °F) temperature during warm weather months during Q7-10 low conditions in the DEP water quality modeling, which allows for temperature variation. Treated sewage has lower temperatures during colder months due to cooling within the sewer system and WWTP prior to discharge.**
- To address these risks, it is critical that PA DEP requires ESWWTP to conduct a detailed thermal impact assessment, and better temperature monitoring. The temperature assessment should include a dynamic model of effluent mixing and temperature dispersion, specifically focusing on summer low-flow scenarios, to ensure compliance with the creek's Cold Water Fishery (CWF) designation. Installing temperature monitoring systems at the effluent outfall and downstream locations would ensures compliance with environmental standards. This would provide real-time information to inform operational decisions. **There is no regulatory requirement for a permittee to monitor an attaining stream. The DEP Thermal Spreadsheet is available via the DEP Water Quality Model and Tools webpage if anyone wants to perform a hypothetical analysis.**

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- To mitigate these thermal impacts and preserve Brodhead Creek's cold-water habitat, ESWWTP should adopt several measures. First, effluent cooling systems, such as cooling towers, heat exchangers, or wetland-based cooling, should be installed to lower the temperature of discharged wastewater before it enters the creek. Second, flow equalization basins should be implemented to spread high-flow discharges over longer periods, reducing thermal shock during critical low-flow conditions. Third, continuous temperature monitoring should be required at the outfall and downstream locations to ensure compliance with CWF standards. Additionally, seasonal effluent temperature limits should be established to account for the increased sensitivity of the stream during summer months. Other public comments noted thermal treatment options in mechanical cooling systems, retention of wastewater to allow for cooling, outfall redesign to encourage mixing, timing discharge during cooler hours of the day, spray irrigation, etc. Mount Pocono Municipal Authority (MPMA) already has temperature control mechanisms in place. **See above. Please note that MPMA was discharging to a heavily effluent-dominated non-attaining/impaired stream and voluntarily committed to such a system in a non-DEP Consent Decree.**

TRC Limits:

- Total Residual Chlorine (TRC) levels, as reported in the May 2024 response to the Technical Deficiencies letter & the 2023 Application from the Borough to the PA DEP, indicate significant and issues with chlorine levels in the effluent. The chlorine levels reported may even elevate the chlorine issue as a water quality emergency, mandating immediate action. At current levels, and levels written into this application, immediate and ongoing harm will impact aquatic life, and threatens the Brodhead Creek's water quality for future generations. According to the EPA's National Recommended Water Quality Criteria, the acute criterion (maximum concentration for short-term exposure) for total residual chlorine (TRC) in freshwater is 19 µg/L (0.019 mg/L), and the chronic criterion (maximum concentration for long-term exposure) is 11 µg/L (0.011 mg/L). According to ongoing effluent test results from the May 2024 letter, and the Application:
    - Effluent chlorine levels (mg/L): 0.5 mg/L maximum, 0.342 mg/L maximum monthly average, and 0.287 mg/L long-term average.
    - Influent chlorine levels (mg/L): 0.06 mg/L average, with a shocking maximum average value of 0.4533 mg/L.

  The TRC permit limits (0.50 mg/l monthly average; 1.63 mg/l IMAX) are protective of the PA Chapter 93.7 Water Quality Standards (identical to the EPA values cited) at Q7-10 low flow conditions and 2.25 MGD NPDES Permit-basis discharge. The Draft NPDES Permit Fact Sheet EDMR data shows that the facility is compliant with the Part C.I.D (Chlorine Minimization) condition due to 0.3 – 0.48 mg/l TRC maximum concentrations. TRC is a non-conservative substance (not remaining in the stream due to chemical and biological activity). The influent chlorine levels are largely due to wastewater recycling within the treatment plant.

- In the November 2023 application, the applicant submitted misleading Whole Effluent Toxicity (WET) tests, which misrepresented the actual chlorine levels being direct discharged into the Brodhead Creek. This misrepresentation is likely due to evaporation of chlorine from the samples, sample mishandling, or personnel errors. For example, according to WET test data dated 6/21/22, total residual chlorine (TRC) levels of 0.08 mg/L were detected entering Brodhead Creek. WET testing on 3/14/23 showed chlorine levels ranging from 0.05 mg/L to 0.07 mg/L, which remain well above the thresholds established for protecting sensitive cold-water fish ecosystems.
    - **The WET Test addresses the synergistic/cumulative effects of all toxic constituents present in the effluent at the time of sampling by grab sampling. Variability of TRC effluent concentrations is not unexpected for a grab sample.**
    - **The facility has been meeting its existing TRC permit limits and achieving chlorine minimization.**

Pretreatment Comments:

- **Pretreatment for Organic Chemicals**: Tens of thousands of gallons of industrial sewage processed daily must undergo best-available technology pre-treatment to detoxify and remove hazardous and pharmaceutical compounds such as Benzo(a)Anthracene, Chrysene, and Indeno(1,2,3-cd)Pyrene, PAH's, Bis(2-Ethylhexyl)Phthalate.
    - **The updated Reasonable Potential Analysis identified only two organic chemicals (Benzo(a)Anthracene and 3,4-Benzofluoranthene) needing permit limits or monitoring requirements,**

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with Part C.III (WQBELs for Toxic Pollutants) setting for the process for Toxic Reduction Evaluation (TRE) including potential source reduction and investigation of treatment options.

- **Federal NPDES (40 CFR 400 – 471) Industrial Category Effluent Limit Guidelines (ELGs) pretreatment requirements define the Technology-Based Effluent Limits (TBELs) that must be met by the Industrial User. The regulations do not mandate treatment technologies.**

- **Pretreatment Questions**: How exactly does the POTW (publicly owned treatment works) actually monitor for possible unauthorized discharges from IU (industrial users)? The Borough states that the POTW "currently monitors for possible unauthorized discharges" and responds to "questionable events" by checking collection system manholes and deploying composite samplers when needed. This response does not constitute a proactive, comprehensive, or reliable program for detecting and preventing unauthorized discharges. Without clear documentation of ongoing monitoring practices, periodic inspections, and IU compliance verification, the response appears insufficient to address the requirements of NPDES permit, which explicitly mandates protections against interference or passthrough caused by Industrial discharges. **The NPDES Permit does not direct facility operations or process control decisions and the application requirements do not include site SOPs. The NPDES Permit has assorted pretreatment-related requirements (including but not limited to):**
  - **NPDES Permit Part A.I includes monitoring of Raw Sewage Influent for BOD5, CBOD5, and TSS; and the Effluent monitoring for constituents identified in the Reasonable Potential Analysis as requiring permit limits or monitoring. Representative sampling and Recordkeeping requirements are also addressed in Part A.I. Process and effluent monitoring would detect interference (with treatment process) and pass-through.**
  - **NPDES Permit Part A.III.C.2 (Planned Changes to Waste Streams) notification requirements.**
  - **NPDES Permit Part B.I.C.4 (additional Chapter 94 Report requirements)**
  - **NPDES Permit Part B.I.D (General Pretreatment Requirements)**
  - **See the 2024 East Stroudsburg Borough Chapter 94 Annual Municipal Wasteload Report for the Borough's Industrial Pretreatment Ordinance No. 966 requirements and other Borough-provided information. For example, the Borough indicates the industrial users are required to submit semi-annual analytical results of their wastewater discharges for Borough review.**
- **Concerns over Potential Constituents**: Industrial Users are often a source of variable and extremely harmful pollutants, including metals, PAH's (as already discussed), organics, and numerous other hazardous chemicals, which will not be detected without robust pretreatment programs and proactive monitoring. Even if IUs are hypothesized to discharge only sanitary sewage, there is no clear evidence provided here in this application or materials. Incidental industrial pollutants do enter the system because there's no rigorous controls in place by the Borough and/or their operator. Many pollutants will cause interference with POTW operations or passthrough to receiving waters, even in small concentrations, harming the water quality of the sensitive waterbody like our precious CWF, MF designated segment of the Brodhead Creek. **See above responses. The NPDES Permit's standard monitoring frequencies and permit limits are supported by EPA-approved statistical methodologies to account for variable influent loading/concentrations and potential spiking events. The Federal ELG pretreatment limits and monitoring requirements are based on "indicator" constituents based on scientific analysis (i.e. if the indicator chemical concentration is low, so are all other likely industry pollutants from that particular industry). Process & effluent monitoring would detect any interference (with the biological treatment process).**
- **IU Pretreatment Requirements**: The IUs should be subject to pretreatment requirements. Without a defined pretreatment program, the Borough is non-compliance with federal and state regulations. The DEP must require the Borough to implement a proactive pretreatment program, including routine inspections, effluent testing, and enforceable discharge limits for all IUs. This program should be a condition of the permit renewal. **See above responses. The Industrial Users/Indirect dischargers/POTW customers are subject to any applicable pretreatment requirements set forth in the Federal 40 CFR 400 – 471. The Borough has its own authority to set pretreatment requirements.**
- **Periodic Industrial User Re-evaluations**: The statement that "the Borough may need to re-evaluate whether IUs are sending wastewater requiring pretreatment to the POTW" suggests that there has not been a rigorous verification process. If Industrial Users (IUs) discharge substances requiring pretreatment and no assessment has been completed, the facility risks non-compliance. The PA DEP requires that POTWs routinely verify IU discharge contents to ensure they meet pretreatment standards, and any failure to monitor adequately can lead to violations under NPDES regulations, particularly if toxic substances enter the treatment system untreated. **Any NPDES permittee must periodically re-evaluate IUs due to potential changes in Industrial User (a.k.a. Indirect**

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Discharger) customers and/or IU discharges (businesses can modify their industrial processes over time). NPDES Permit Part B.I.C.4 annual reporting requirements apply to POTWs. Site-specific considerations would determine the extent of any required re-evaluation.

- **Other Pollutants (Pharmaceutical, PFAS, other):** In addition, the 80,000 gallons of industrial sewage coming from a hospital, stricter standards, added parameters for monitoring and compliance are warranted. What is the discharger proposing to use to help ensure pharmaceuticals and PFOAs are not a major problem at its discharge with these types of users? Hospitals generate wastewater that may contain residual medications, including antibiotics, hormones, and chemotherapy agents. Cleaning agents, disinfectants, and laboratory chemicals may also be present in the effluent. The PA DEP needs to require more pharmaceutical testing of the effluent as condition to this permit to accommodate these industrial users. Antibiotics and biocides can inhibit microbial activity in the WWTP, reducing the efficiency of biological treatment processes. Furthermore, many pharmaceuticals are not effectively removed by conventional treatment methods, potentially contaminating Brodhead Creek and impacting aquatic life and water quality. Hospitals may discharge POPs such as halogenated compounds from cleaning agents and disinfectants. POPs can resist biodegradation and pass through the treatment plant, leading to ecological impacts in the receiving waters. The PA DEP should implement a robust pretreatment program to monitor for and potentially explore removing pharmaceuticals before discharge. There needs to be more screening measures in place to monitor these compounds as part of this permit.
    - **The Department is adding PFAS monitoring per the DEP PFAS Strategy.**
    - **See Pretreatment-related comments above. There are Dental facility ELGs under 40 CFR 441.**
    - **The NPDES Permit Renewal Application indicated that only sewage is received from the industrial users. In practical terms, hospitals and other industrial facilities can segregate and manage separately infectious/chemotherapeutic (pharmaceutical) wastes, laboratory wastes, & other industrial wastewater. In practical terms, a hospital sewage discharge would likely only concentrate constituents that would otherwise arrive from the assorted residential sources within the large POTW service area (with the same overall mass loading at the Treatment Plant).**
    - **The NPDES Permitting and Federal ELG pretreatment technology-based effluent limits address "indicator chemicals" (not every potential constituent) since most site issues would be indicated by indicator constituents' exceedances. Part B.I.D explicitly addresses "interference" (with the Treatment Plant biological treatment efficiency).**
    - **The Whole Effluent Toxicity (WET) Testing addresses cumulative and synergistic impacts from all present pollutants in the POTW effluent.**
- **Elevated BOD and TSS:** The regulatory framework exist to require non-domestic dischargers, such as hospitals, to comply with pretreatment standards to protect Publicly Owned Treatment Works (POTWs) and the environment. Hospital effluent may have elevated BOD and TSS due to organic waste, blood, and other materials. High BOD and TSS can overload the treatment system, reducing the efficiency of downstream processes. Increased oxygen demand may lead to oxygen depletion in Brodhead Creek. The PA DEP should have the borough monitor hospital discharges for BOD and TSS levels, and have a requirement for implementation of pretreatment if levels exceed typical municipal influent concentrations. **See above responses. There are influent monitoring requirements for BOD5 and TSS (in addition to effluent permit limits for CBOD5, TSS, and Dissolved Oxygen (DO)), with additional Chapter 94 Annual Municipal Wasteload Report requirements for reporting existing/projected overloads. Available Chapter 94 Reports and EDMR (electronic Discharge Monitoring Reports) do not indicate any existing/projected organic (BOD5 or CBOD5) or TSS overloading issues.**

Antibacksliding Exception Request for Relaxation of Previous Total Antimony, Total Lead, Total Silver, and Total Thallium Permit Limits; and Total Arsenic, Total Selenium, Total Zinc, and 1,4-Dioxane Monitoring Requirements:
Background Excerpt from Draft NPDES Permit Fact Sheet: "The application contained a request for relief from existing final permit limits for Total Antimony, Total Lead, Total Silver, and Total Thallium that went into effect on March 1, 2022 and relief from ongoing monitoring requirements for other parameters (Total Arsenic, Total Selenium, Total Zinc, and 1,4-Dioxane). Per the CWA Section 402(o)(2), an NPDES permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in accordance with one of the identified Antibacksliding Exceptions".

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- **Antibacksliding and DRBC Docket**: DRN is concerned about the Borough's request for relaxation on toxics monitoring and limits. A renewal does not come around regularly so relaxation versus strengthening of protections at this time would be an essential outcome for this renewal and help strengthen protections for Brodhead Creek as well as SPW's of the Delaware River. These improvements would also be more in line with the goals of the Clean Water Act and development threats in the region that could lead to regional sewer expansions or other pressures to the Brodhead as outlined above as a snapshot of examples. The DRBC docket for this particular plant was approved June 9, 2021 with an expiration of February, 28 2029. If backsliding is denied at this time for the betterment of aquatic life improvements, the plant could be more in line with improvements made now that should be required in 2029 by the DRBC and they can plan for such important and needed overdue upgrades.
    - **There is no reasonable potential for the chemicals constituents removed from the NPDES Permit. See the Draft NPDES Permit Fact Sheet and updated Reasonable Potential Analysis (above) for the Antbacksliding Analysis details.**
- Statistical Methodology Utilized:
    - Relaxing WQBELs or monitoring requirements without a much more thorough evaluation will pose unacceptable risks to this unique ecosystem. The Borough has not justified the elimination of established protective measures, particularly in a sensitive ecosystem like Brodhead Creek. The precautionary principle must be fully applied, and the requests should all be denied by the PA DEP, in addition, the PA DEP should reject the Use of Median Values Without Statistical Justification, multivariate statistical techniques (MSTs) along with and other such statistical analysis. Also require the Borough to provide detailed statistical analyses and principle component analysis/ multi-variate analyses before considering any substitution of maximum values with median values in TMS modeling.
    - At minimum the borough must utilize proper multi-variate, and principle component analyses due to the obvious interdependencies of the variables here, this also applies to comments on thalium, lead, 1,4 Dioxane, Antimony etc.
    - Including high values in the dataset and using the mean for analysis ensures a statistically rigorous and ecologically accurate representation of effluent concentrations. These elevated values are legitimate data points that reflect actual discharge events and their real-world impacts on the receiving water body. Excluding them as "outliers" is not justified in this WWTP context, as these concentrations entered the fresh water ecosystem and contributed to the cumulative environmental burden. By definition, outliers are values that result from measurement errors or are not representative of the population; however, these high values are part of the operational data and actual discharge, and reflect system variability or anomalies that must be accounted for. The mean, unlike the median, incorporates all data points and provides a true representation of the dataset's central tendency and range, critical for assessing overall compliance and potential environmental harm. Ignoring these values disregards their contribution to the dataset and underrepresents the magnitude of risk, leading to an incomplete and misleading analysis.
    - Part 2. Public comment on May, 2024 letter to pa dep May 8, 2024 Project No: 10205.473 SUBJECT: PERMIT RENEWAL APPLICATION SUPPLEMENTAL INFORMATION RESPONSE TECHNICAL DEFICIENCY LETTER EAST STROUDSBURG BOROUGH WWTP (NPDES PA-0020168): "……The Borough clarifies that it has not implemented any treatment for antimony, lead, silver, and thallium. Therefore, this limitation on relaxing or removing a WQBEL does not apply." (Page 2). The Borough incorrectly believes that a lack of treatment justifies relaxing WQBELs and the policy explicitly requires evidence of reduced pollutant levels due to external factors or operational changes, which the Borough has not sufficiently provided. The DEP should deny this comment from the Borough as it relates to these compounds.

  The DEP did not rely on the Borough's statistical analysis in NPDES permitting. The DEP used EPA-approved statistical methods in evaluating sampling data and determining potential permit limits in the Reasonable Potential Analysis (TOXCONC Spreadsheet calculating the Long Term Average Monthly Effluent Concentration (LTAMEC) and daily Coefficient of Variability (COV); Toxic Management Spreadsheet; etc.). See the EPA Technical Support Document for Water Quality-based Effluent Limits (available via EPA website) if you are interested in the EPA-approved statistical methodology. Synergistic and cumulative impacts (from multiple constituents) were separately addressed by the Draft NPDES Permit Fact Sheet's Whole Effluent Toxicity (WET) Test section.

- **Thallium, Arsenic, Antimony, Selenium, Lead, 1,4-Dioxane**: Public comments on the specific chemicals stated the Borough's claims that the relevant chemical concentrations in the ESB WWTP effluent are below WQBELs and pose no risk is premature and incomplete. Potential for bioaccumulation and persists in the environment, pose long-

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term risks to aquatic ecosystems. The reliance on estimated values (lab-reported "J") raises questions about data accuracy, and weekly sampling fails to account for spikes or operational anomalies. Additionally, thallium's potential to accumulate in sediments and interact with other pollutants could result in cumulative impacts that are not reflected in the current analysis. Given Brodhead Creek's sensitive Cold Water Fishes designation and MF designation, the Department should require enhanced monitoring, more precise analytical methods, and a cumulative impact assessment. This precautionary approach must be applied, and the applicant must prove that thallium discharges are comprehensively evaluated and that Brodhead Creek's water quality and sensitive cold water and migratory fishes habitat is better protected from their discharge. **See above responses. In addition:**

- **Chapter 93 (Water Quality Standards) limits the effluent concentrations, i.e. limiting any possibility of settlement. Unless mobilized (as TSS) in the stream, sediments do not actively impact aquatic life and human health. The facility also has TSS limits that will help prevent accumulation of solids by settlement.**
- **The Whole Effluent Toxicity (WET) Testing addresses cumulative and synergistic impacts of multiple constituents in the discharged effluent. See Reasonable Potential Update above and the Draft NPDES Permit Fact Sheet WET Section.**
- **Laboratory-determined "J" values are laboratory-determined concentrations when the Lab's Method Detection Level (MDL) is more sensitive than an "insensitive" Lab's Quantitation Limit (QL). Lab-determined "J" values can be used for NPDES permitting and compliance purposes.**

General Comments regarding potential toxic pollutants:

- **Proposed Non-Detect Limits**: Ensure toxic pollutants remain below quantifiable levels to avoid continued release of pollutants into Brodhead Creek. **Water Quality-Based Effluent Limits (WQBELs) are based upon the Chapter 93 Water Quality Standards, not Lab Quantitation Limits.**
- **Cumulative and Synergistic Impacts**: These pollutants cannot be analyzed by a simple time series and compared to itself without complex statistical analyses employed. Multi-variate analysis and principle component statistical analysis (PCA) are often employed in the literature for industrial pollutants with interaction effects in complex multi-variate systems such as WWTPs. For example:
  - Effluents from middle-sized industries, connected to municipal treatment plants in two cities in Sweden were sampled daily during 1 week and were characterized chemically and biologically. The results were evaluated mainly with multivariate statistics to find relations between chemistry and toxicity. The principal component analysis (PCA) overview of the chemical variables displayed three main clusters: nitrogen fractions, metals, and organic parameters. ……..
  - When characterizing these industrial effluents, the chemical determinations and the various biological toxicity tests complement each other and none can be excluded. (Cecilia Andrén, et al 2009)

  The Department addresses potential cumulative and synergistic impacts via the Part C.IV (Whole Effluent Toxicity) Tests. A sample of the effluent is taken and its impact on aquatic life is then determined by scientifically supported methodology at different dilution ratios with pass/fail criteria. The facility WET Tests passed (see response to EPA Comment above). The Reasonable Potential Analysis also used EPA-approved statistical methodology and "indicator" constituents (i.e. if the indicator constituents have low concentration, then other potential contaminants from the same source will likely be low).
- Weekly sampling doesn't capture episodic spikes or variability during storm events or operational changes, and cumulative impacts and interactions with other effluent pollutants remain unaddressed. **The weekly monitoring (for toxic pollutants with Water Quality-Based Effluent Limits) are scientifically-based on EPA-approved statistical methodology. In practical terms, minimum weekly flow-proportional 24-hour composite sampling requirements would catch episodic spiking and/or effluent variability, but Part A.III.A.1 (Representative sampling) also requires the collection of samples, where possible, during periods of adverse weather, changes in treatment plant performance and changes in treatment plant loading. There are also Part A.I Additional Requirements bypass sampling requirements.**
- **Other Constituents**: The detection of carcinogenic PAHs, including Benzo(a)Anthracene, Chrysene, and Indeno(1,2,3-cd)Pyrene, at levels above EPA thresholds for human health, raises significant concerns for water quality and bioaccumulation. Similarly, the presence of plasticizers like Bis(2-Ethylhexyl)Phthalate suggests contributions from industrial or consumer plastic waste, posing risks of endocrine disruption and reproductive toxins to aquatic life in the Brodhead Creek. **The Reasonable Potential Analysis (based on scientifically supported**

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data; scientifically-supported water quality modeling taking dilution and exposure routes into consideration; and technical guidance policies) determined no permit limits or monitoring is required for the listed constituents.

- **Concern over Sediments**: Persistent pollutants such as PAHs and phthalates will settle in sediments, leading to long-term contamination of benthic ecosystems in the Brodhead Creek and exacerbating cumulative toxic effects when combined with other pollutants, even at individually low levels. Additionally, sediment toxicity and bioaccumulation studies should be conducted both upstream and downstream of the WWTP effluent release outfall, in order to comprehensively evaluate the long-term risks to the aquatic ecosystem of our Brodhead Creek. **Chapter 93 (Water Quality Standards) limits potential effluent constituents with potential for settlement and accumulation into sediments. Chapter 93 (Water Quality Standards) does not otherwise specify water quality criteria for sediments. The facility has TSS limits that will help prevent accumulation of solids by settlement in the flowing Brodhead Creek.**
- **Proposed Additional Treatment Requirements**: To address these issues, it is essential to identify and mitigate sources of PAHs and phthalates through industrial pretreatment and improved stormwater management, while exploring advanced treatment technologies such as granular activated carbon (GAC) reverse osmosis, or membrane filtration to effectively remove these contaminants. Enhanced monitoring efforts, including increased sampling frequency for carcinogenic compounds and stricter compliance thresholds, are critical for public health protection and the water quality of Brodhead Creek. The borough must be compelled to proactively address these pollutants, which will enable the Borough of East Stroudsburg to safeguard Brodhead Creek's water quality and meet their mandate under the environmental rights amendment for all people's right to clean water, under the PA Constitution.
    - **All IU dischargers must comply with any applicable Federal ELG pretreatment requirement.**
    - **The Borough has existing Pretreatment obligations and authority to sample (see Pretreatment comments above).**
    - **The Whole Effluent Toxicity (WET) Testing addresses cumulative and synergistic impacts of multiple constituents in the discharged effluent. See Draft NPDES Permit Fact Sheet and response to EPA comment above for details.**
    - **In the absence of stream impairment and lack of Reasonable Potential, the Department does not the authority to mandate additional treatment and/or TRE requirements.**

Comments on Specific Constituents:

Copper:

- **Copper Toxicity**: Copper is a known toxicant to fresh water aquatic organisms, particularly to sensitive species such as trout and migratory cold-water fish that reproduce here in our precious Brodhead Creek. For instance, even low levels of copper can impair olfactory function in fish, disrupt critical behaviors like predator avoidance and migration, and reduce reproductive success. This problematic in a Cold Water Fishes and Migratory Fishes reproductive ground right near the Delaware River. Multiple parks and open space properties frequented by the public are located directly downstream of this effluent, not to mention the 15 million people downstream who rely on the Delaware River for drinking water. **The DEP copper Chapter 93 Water Quality Criteria protect the waters of the Commonwealth including aquatic life. The Copper Chapter 93 WQS is more stringent than the drinking water standard (some aquatic life cannot survive in tap water). The Part C.IV (Whole Effluent Toxicity (WET)) testing includes impact on aquatic life in terms of impact on reproduction rates.**
- **Time-frames**: Copper is a known toxicant to fresh water aquatic organisms, particularly to sensitive species such as trout and migratory cold-water fish that reproduce here in our precious Brodhead Creek. Copper limits should be a requirement at this time instead of continued studying of that particular parameter that is being proposed by the discharger to stop any ongoing degradation of Brodhead Creek. Given these impacts, the continued reliance on temporary measures without conditions to the permit that ensures immediate infrastructure improvement and technological improvement commitments to eliminate copper at its source is unacceptable. Furthermore, the ongoing delays and piecemeal responses by the Borough are postponing the implementation of essential environmental protections, putting the nearby cold-water fishery and sensitive Brodhead Creek recreational areas at risk.
    - **No relief was granted from the existing Total Copper Limit.**
    - **The Redraft NPDES Permit includes more stringent Total Copper WQBELs. The Total Copper Discharge Monitoring Reporting was too insensitive (lacking a significant digit) to show whether the POTW can meet the more stringent Total Copper limit upfront, triggering the need for the Part C.III (WQBELs for Toxic Pollutants) Schedule of Compliance (subject to Chapter 92a.51) for the facility to come into compliance. The Part C.III options include source reduction, treatment, or making a case for site-specific stream data collection to allow determination of "metal translators" (Chapter 16.24).**

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- **Potential Copper Sources:** The Borough identifies East Stroudsburg University and Notre Dame High School as potential sources of copper based on preliminary sampling but provides little detailed analysis of their regular discharge volumes, copper concentrations, or a detailed narrative and analysis on the exact specific activities contributing to these copper levels. The lack of specificity undermines the Borough's ability to implement targeted and enforceable measures to reduce copper at the source. Simply evaluating the "need for reduced discharge limits" for industrial users is an insufficient remedy. Instead, I recommend that the Department require the Borough to conduct a comprehensive source identification study, including continuous monitoring and mass balance calculations for all identified industrial and institutional contributors. The Borough should consider additional corrective actions, such as working directly with industries to limit copper discharge or implementing best available technology and additional treatment methods, to ensure consistent compliance with NPDES limits.

  There are elevated copper levels in the effluent, with a suggestion that this could be from industrial sources; however, the facility primarily attributes the copper to domestic plumbing corrosion. This assumption is insufficient without a thorough investigation into industrial sources. Under PA DEP guidelines, if industrial contributions are suspected, a full Toxic Reduction Evaluation (TRE) should be conducted using data from verified sources. An assumption-based approach will inadequately address or mitigate industrial contributions, leading to ongoing non-compliance with effluent copper limits.

  See NPDES Permit Part C.III TRE requirements. The facility has already done some copper TRE work under the previous NPDES Permit. If the facility can meet the Final WQBELs, then TRE requirements will be minimal. If it cannot, then more will be required. The public water supply is often a significant source.

- Persistent issues with copper discharge, gaps in pretreatment monitoring, and inconsistent reporting underscore the need for stronger oversight and a more proactive approach to wastewater management at this facility. If there are "occasional elevated levels" of copper, the TRE should incorporate more robust and frequent testing of industrial sources to identify and control pollutant contributions. The PA DEP should mandate a detailed action plan that outlines enforceable timelines, permanent pollution reduction measures, and contingency plans for addressing future copper "spikes" and other pollutants that may emerge. **See responses above. Part C.III (WQBELs for Toxic Pollutants) includes an enforceable schedule of compliance under Chapter 92a.51.**
- The Borough highlights the success of their TRE Copper Pilot Study, which involves adding caustic soda to the influent to reduce copper concentrations in effluent discharge. While this approach may provide some possible temporary reductions, it fails to address the underlying sources of copper entering the collection system. Relying on chemical additives to treat symptoms rather than causes is a "band-aid" approach that may introduce additional risks to the Brodhead Creek ecosystem. The Borough's request for a time extension to continue the TRE Copper Pilot Study further delays quality action to address copper pollution of our precious Brodhead Creek. The data collection process appears purely reactive and lacks the necessary urgency, given the potential harm posed by copper contamination to aquatic CWF and migratory fishes (MF) species in Brodhead Creek. **Pilot Studies are generally for the purpose of determining if a treatment technology is effective in achieving the design goal (meeting permit limits). A standard treatment method of reducing copper effluent concentration is pH adjustment to adjust copper solubility in order to cause additional settlement in the treatment process.**
  - **Extending a pilot study time-frame does not grant any relief the existing Total Copper Permit Limit.**
  - **Permanent treatment plant modifications would be subject to the NPDES Permit Part A.III.C.1 (Planned Changes to Physical Facilities) Notification requirements. The Department would review the notification to determine if any WQM permitting is required at that time.**
  - **The POTW can further pursue source reduction and/or treatment to meet the Final WQBEL permit limits under Part C.III. Other Part C.III TRE options include site-specific studies (metal translators, etc.).**
  - **Please note that caustic soda is classified as a wastewater treatment chemical in this usage, not as a "chemical additive" (as defined by DEP Chemical Additive Policy).**

Benzo(a)Anthracene and 3,4-Benzofluoranthene Comments:

- The Borough reports that Benzo(a)Anthracene and 3,4-Benzofluoranthene were detected at estimated values of 0.53J µg/L and 0.62J µg/L, respectively, in the June 30, 2023, sampling event. Both Benzo(a)Anthracene and 3,4-Benzofluoranthene are classified as carcinogenic polycyclic aromatic hydrocarbons (PAHs) with high environmental persistence and significant bioaccumulative potential. Even trace levels of these compounds can pose risks to aquatic life and human health, particularly in sensitive ecosystems like Brodhead Creek. PAHs are known to disrupt aquatic food webs, cause developmental abnormalities in fish, and accumulate in sediments, where they can persist

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in the ecosystem for decades. Ignoring these detections under the assumption that they result from analytical noise disregards the precautionary principle and the potential for long-term harm to our precious Brodhead Creek. Mandate Comprehensive Monitoring as a condition to this permit. **Interim monitoring limits and Final WQBELs are proposed per the Reasonable Potential Analysis (based on scientifically supported data; water quality modeling taking dilution and exposure routes into consideration; and technical guidance policies). The Chapter 93 Water Quality Standards address potential exposure routes.**

- The Department should require more frequent, event-based, and comprehensive monitoring to fully characterize the occurrence of Benzo(a)Anthracene and 3,4-Benzofluoranthene in the Borough's effluent and potential source. **The DEP standard minimum sampling frequency (1/week) is designed to catch effluent concentration variations. It is unclear what "event-based sampling" was being requested, but Part A.III requires representative sampling. Part C.III Toxic Reduction Evaluation (TRE) requirements include source identification.**

Other Specific Constituents:

- **Bis(2-Ethylhexyl)Phthalate:** The detected level is 4.9 µg/L, exceeding the EPA human health criterion of 3 µg/L. **The Application Pollutant Group Table identified the maximum concentration at 1.6J ug/l (with one nondetect at <0.81J ug/l). The source of the claimed analytical result was not provided to allow for consideration in the updated Reasonable Potential Analysis.**
- **Fluoranthene:** The detected level is 4.3 µg/L is near the chronic threshold of 3.5 µg/L. **The Application Pollutant Group Table identified the maximum concentration at <0.78J ug/l ((with one Non-detect at <0.43J ug/l). The source of the claimed analytical result was not provided to allow for consideration in the updated Reasonable Potential Analysis.**
- **Chrysene:** The detected level is 2.9 µg/L, significantly exceeding the EPA human health criterion of 0.0038 µg/L for carcinogenic effects. **The Application Pollutant Group Table identified the maximum concentration at <0.57J ug/l (with one Non-detect at <0.42J ug/l). The source of the claimed analytical result was not provided to allow for consideration in the updated Reasonable Potential Analysis.**
- **Indeno(1,2,3-cd)Pyrene**: The detected level is 0.66 µg/L, exceeding the EPA human health criterion of 0.0044 µg/L. **The Application Pollutant Group Table identified the maximum concentration at <0.41J ug/l (average at 0.40J ug/l). The source of the claimed analytical result was not provided to allow for consideration in the updated Reasonable Potential Analysis.**

Compliance History: There were no open violations per 8/11/2025 WMS query (open violations by client number).

Client ID: 71386
Client: All

Open Violations: 0
No data was found using the criteria entered. Please revise your choices and try again.

Communications Log:

9/30/2024: Draft NPDES Permit issued for public comment
10/22/2024: Permittee (consultant) E-mail asked for copies of DEP water quality modeling and technical guidance to better understand the modeling.
10/23/2024: DEP (Berger) E-mail resent the original Fact Sheet (with PDF versions or excerpts) plus resent WQM Model and TOXCONC spreadsheet. The DEP Water Quality Models and Tools webpage was referenced for downloadable version of DEP water quality models. DEP E-library was referenced for the applicable DEP Technical Guidance documents.
10/28/2024: Permittee (consultant) E-mail noted the Existing Use Table cites a 7/10/2007 evaluation for Brodhead Creek, and requested a copy of this evaluation report. The request was forwarded to DEP Central Office (Bureau of Water Quality).
11/12/2024: DEP (Berger) E-mail that forwarded the DEP response. See the attached Pennsylvania Fish and Boat Commission report that was used to support the existing use listing for Brodhead Creek from SR2022 to Mouth. Further questions on the Brodhead Creek's existing use evaluation, can be directed to Mr. Michael (Josh) Lookenbill, Division of Water Quality, Central Office:

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11/4/2024: Permittee (consultant) E-mail containing 11/1/2024 Permittee Letter Request for 15-day extension to public comment period (to **11/26/2024**).
11/5/2024: DEP (Berger) E-mail granted the requested extension to 11/26/2024.
11/12/2024: E-mail request from a member of the public for additional time. “Given the complexity of issues associated with the East Stroudsburg Borough WWTP permit (PA0020168), I am writing to request a 30-day extension to the public comment period. This additional time would allow community members to submit RTK requests, scrutinize the application material, and more thoroughly review and respond to the permit details. Notably, the WWTP applicant has been granted several extensions; a similar courtesy extended to the public would ensure a balanced and fair opportunity for input”.
11/12/2024: DEP (Berger) E-mail notification that the public comment period had been extended to 12/26/2024 per public request.
11/8/2024, 12/15/2024, and 12/15/2024, 12/23/2024, 12/24/2024, 12/25/2024, 12/26/2024, 12/27/2024, 12/28/2024, and 12/29/2024: Assorted public comments E-mails received (Delaware Riverkeeper and from individuals).
12/24/2024: Borough Public comments received.
3/27/2025: 2024 East Stroudsburg Chapter 94 Annual Municipal Wasteload Report received.