pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NORTHEAST REGIONAL OFFICE
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET ADDENDUM

Application Type	**Renewal**	Application No.	**PA0026042**
Facility Type	**Sewage**	APS ID	**785283**
Major / Minor	**Major**	Authorization ID	**980088**

Applicant and Facility Information

Applicant Name	**Bethlehem City Northampton County**	Facility Name	**Bethlehem City STP & Sewer System**
Applicant Address	10 East Church Street	Facility Address	144 Shimersville Road
	Bethlehem, PA 18018		Bethlehem, PA 18015
Applicant Contact	Edward Boscola	Facility Contact	Jack Lawrence
Applicant Phone	(610) 865-7207	Facility Phone	(610) 865-7168
Client ID	74720	Site ID	443353
SIC Code	4952	Municipality	Bethlehem City
SIC Description	Trans. & Utilities - Sewerage Systems	County	Northampton
Date Published in PA Bulletin	January 7, 2023	EPA Waived?	No
Comment Period End Date	March 20, 2023 (Extended per EPA General Objection Letter)	If No, Reason	Major POTW; CSOs

Purpose of Application: Application for a renewal of an NPDES permit for discharge of treated Sewage

Internal Review and Recommendations

FS Addendum for Redraft NPDES permit for the 20.0 MGD Bethlehem POTW (including STP & Sewer System). See previous Redraft Fact Sheet for DEP responses to previous public comments on prior Draft/Redraft NPDES Permits.

Changes to December 16, 2022 Redraft NPDES Permit (issued for Public Comment): Permit condition renumbering due to permit section deletions described below. This Addendum cross-references the previous Redraft NPDES Permit condition numbers to minimize potential confusion. See Public Comments and responses (below) for further explanation regarding the changes.

- **Part A.I.A, A.I.B, A.I.E, A.I.F, and Part C.III (DO Interim monitoring & Three-Year Schedule of Compliance requirements)**: Deleted.
- **Part A.I.C (Outfall No. 001)**:
  - DO requirement changed to 4.0 mg/l Instantaneous Minimum limit, effective upon Permit Effective Date.
  - Changed 85% CBOD5 minimum monthly average reduction limit to monitoring/reporting per permittee request. See footnote language.
  - Added Part A.I footnote cross-referencing Part A.I Additional Requirements Item 2 “narrative Technology-Based Effluent Limit” language for both CBOD5 and TSS minimum monthly average reduction monitoring.
  - Hexavalent Chromium monitoring dropped per updated Reasonable Potential Analysis.
  - The Color (Pt-Co Units) monitoring requirement has been changed to “upon request”.
  - The Total Phenols (Total Phenolics) monitoring requirement has been changed to annual monitoring.
- **Part A.I.A (daily max M&R), A.I.B (daily max limit), C.II (Ammonia-N Three-Year Schedule of Compliance)**: Deleted. The new Ammonia-N daily max limit (based on the existing IMAX limit) will become effective on February 28, 2024 or Final Permit Effective Date (if later) because the permittee indicated compliance achievable by end of

Approve	Return	Deny	Signatures	Date
X			James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	November 1, 2023
X			Amy M. Bellanca, P.E. / Acting Environmental Engineer Manager	11-2-23
			Amy M. Bellanca, P.E. / Environmental Program Manager	

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2023. Extra time has been given in event of construction time is required and/or initial start-up of the new CEPT system, but within one year of PED.

- **Part C.IV (Hydraulic Restriction SSO Three-Year Schedule of Compliance)**: Deleted.
- **Part C.VI.C.1, now Part C.III.C.1 (Approved LTCP Plan)**: The condition has been clarified to identify the existing approved 2010 LTCP, which governs except as superseded by statute, regulation and/or permit condition.
- **Part C.VI.C.2 now Part C.III.C.2 (LTCP Goals)**: The condition has been clarified to identify the applicable "design conditions" set forth in the approved 2010 LTCP (≤50 MGD peak wet weather influent flows).
- **Part C.VI.C.3 now Part C.III.C.3 (LTCP Schedule of Compliance)**: Changes bolded with deleted language struck-through:

Milestone	Completion Date
Continue Implementation of the NMCs	Upon Permit Effective Date
Continue Implementation of the LTCP **(including updating the existing stream monitoring plan to include E Coli stream sampling)** in accordance with all permit conditions**.**	Upon Permit Effective Date
Submit Annual CSO Status Report to Department with Chapter 94 Report with annual City determination whether any proposed CSO LTCP Goal has been met for the calendar year.	March 31 of each year
Submit LTCP Progress Report (including determination whether any LTCP Goal has been achieved) to Department with Chapter 94 Report, incorporated into the Annual CSO Status Report.	March 31 of each year
Submit DMR Supplemental Reports for CSOs including DEP Stream Monitoring Data Supplemental Reporting Form	Within 28 days of the end of a calendar month
Updated Nine Minimum Control (NMC) Implementation Plan to address detailed implementation of FOG Program, Floatable & Solids controls for Outfall No. 003, and any other NMC updating/implementation requirements.	**12 months of PED**
Submittal of CSO LTCP Update with updated information/analysis (including summarization/analysis of all post-2010 available stream and CSO discharge data); identification of any overflows in the CSS collection system/conveyance pipelines and WWTP since 2010; updated NMC implementation **plan ~~regarding FOG Program and Floatable & Solids controls for Outfall No. 003~~**; up-to-date High Flow Management Plan (HFMP) meeting all NPDES permit requirements; updated NMC/Post-Construction Compliance Monitoring (PCCM) Plan/Stream Study Plan able to determine if CSO discharges are contributing to Water Quality Standard (WQS) exceedances and/or existing stream impairments now or upon achievement of chosen LTCP Goal.	**~~Within 12 months of PED~~ 24 months of PED**
Implementation of CSO LTCP Update	Upon Department approval or approval with conditions
Implementation of approved Stream Study	**~~24 months after PED~~ 36 months after PED**
Stream Study completion and Letter Report whether **any chosen** LTCP Presumption Goals are valid and all LTCP measures have been implemented.	**~~36 months after PED~~ 48 months after PED**

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Stream Study Report submittal with analysis whether the chosen LTCP Goal is protective of Water Quality Standards and has been achieved.	~~**48 months after PED**~~ **54 months after PED**

- **Part C.VII.H now Part C.VI.H (POTW Pretreatment Program Implementation)**: Updated EPA Address per EPA comment.

Public Comments and Responses: The received public comments are summarized below with Department responses bolded. The EPA and permittee had overlapping comments, with some overlapping responses. See previous Fact Sheet Addendum for previous public comments/responses for related information. See also Communications Log (below) for summarization of conference call discussions regarding public comments on the Redraft NPDES Permit.

Potential Separate Rerating Proposal: The facility has separately indicated it is considering an organic rerating WQM permit amendment because existing loadings are approaching the facility's existing organic design capacity limit. DEP Management indicated it had recommended that the permittee evaluate where the organic loadings are coming from, and to look at whether a Chapter 94 Corrective Action Plan (CAP) is required to prevent organic overloading. **No change to the Redraft NPDES Permit needed because no organic design capacity rerating application has been received to date**. **If subsequently approved, the Department would address the change in the issued Part II WQM Permit and any concurrent/subsequent NPDES Permit Amendment to clarify Chapter 94 Reporting requirements (organic design capacity).**

EPA Comments on Ammonia-N and SSO Schedules of Compliance: EPA Comments came via e-mail, General Objection Letter, and EPA/DEP conference call per Communications Log below. The EPA comments were forwarded to the permittee for informational purposes. The General Objection Letter (40 CFR 123.44(b)(1)) extended the EPA public comment period to March 20, 2023.

- **Ammonia-N Schedule of Compliance:** The permit still authorizes a compliance schedule to meet existing ammonia-nitrogen WQBELS that are already in effect in the current permit. There are two issues noted here. Part A (pg. 5) of the permit seems to require compliance with the NH3-N WQBELs at permit issuance. Part C of the permit authorizes a 3 year compliance schedule, affording the permittee 3 years to comply with those same WQBELs. Not only does this create conflicting requirements in the permit, but as EPA noted in our 2017 comments, since the WQBELs are already in effect this creates a backsliding issue. Backsliding of any WQBELs needs to be consistent with any of the exceptions in 402(o)(2) or 303(d)(4) of the CWA. No such justification was provided, and the exceptions do not seem to apply". The General Objection Letter also referenced CWA Section 301(b)(1)(C). **DEP has deleted the three-year Ammonia-N Schedule of Compliance from the NPDES Permit to address the EPA objection.**
  - **The intent of the schedules was for an enforceable corrective action schedule for noncompliance with existing NPDES Permit requirements, not any changes to existing WQBELs and Narrative TBELs. The prior Fact Sheet Addendum had attempted to clarify this. See Compliance Section below for updated information regarding compliance status. See Communications log for summary of related EPA/DEP conference call.**
  - **The Daily max limit is new (although based on the existing IMAX limit). Because the permittee indicated compliance with Ammonia-N limits is expected by end of 2023 (due to completion of construction project), the Department is phasing in the new daily max limit on March 1, 2024 (to allow for construction delay and/or learning curve with new CEPT system). See Bethlehem comments below for related discussion.**
  - **The permittee has indicated it might pursue a Consent Order & Agreement to address any outstanding Ammonia-N exceedances. See Compliance Section below.**

- **SSO Schedule of Compliance:** "The permit also continues to authorize a compliance schedule to conduct collection system work to eliminate SSOs in the system (due to areas of hydraulic restrictions). SSOs are appropriately noted in Part A of the permit as being prohibited, but the compliance schedule in Part C requires "compliance with effluent limitation (No recurrent SSO discharges) – 36 months after PED". In doing this, the permit affords a 3 year schedule to eliminate SSOs but at the same, prohibits them. This schedule does not seem to be an appropriate permit requirement because it creates conflicting requirements and because the permit should not

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include a schedule to comply with an unauthorized discharge. This seems appropriately handled in an enforcement action outside of the permit". The General Objection Letter also referenced the CWA Section 402(a)(1) technology based and water quality based effluent limitations. **DEP has deleted the SSO Schedule of Compliance from the NPDES Permit to address the EPA objection.**

- **The intent of the schedules was for an enforceable corrective action schedule for noncompliance with existing NPDES Permit requirements, not any changes to existing WQBELs and Narrative TBELs. The prior Redraft NPDES Permit & its Fact Sheet Addendum had attempted to clarify this, and that the goal was elimination of any existing hydraulic restrictions resulting in recurrent SSOs. The previous Fact Sheet Addendum documented known progress in eliminating recurrent SSOs.**
- **The permittee has indicated it might pursue a Consent Order & Agreement to address any outstanding SSO-related compliance issues. See Compliance Section below.**

- **Scope of Chapter 92a.51**: EPA believed that the schedules are prohibited by Federal Act sections cited in the General Objection Letter. Schedules of compliance are appropriate for new limits, not to address noncompliance with existing permit limits. EPA believes PA Chapter 92a.51 cannot be interpreted as less stringent than the Federal Act in terms of noncompliance with existing permit limits. EPA noted that it had made a similar objection on another permit, and will let the Department know which one. EPA noted that it would want a conversation with DEP Central Office regarding what Chapter 92a.51 allows, regardless of this NPDES Permit. **EPA comments are noted. The scope of Chapter 92a.51 is now outside the scope of this permitting action due to deletion of the applicable schedules of compliance.**
  - **EPA is free to directly contact DEP Central Office to discuss the scope of Chapter 92a.51 and EPA concerns.**
  - **To date, EPA has not identified the other NPDES permit that it referenced in terms of a similar objection.**

- EPA request for a Redraft NPDES Permit & Fact Sheet by March 20, 2023 to avoid the necessity of an EPA Specific Objection Letter regarding the Ammonia-N and SSO Schedules of Compliance. **The Department provided a tentative Redraft NPDES Permit and Fact Sheet for EPA review prior to issuance of this Redraft NPDES Permit on March 7, 2023 via DEP E-mail. The March 20, 2023 EPA E-mail indicated the general objection had been withdrawn and provided the following comments on the tentative Redraft NPDES Permit:**
  - The fact sheet addendum explains that the compliance schedule for dissolved oxygen (DO) at outfall 001 has been deleted from the permit and notes that the new limits will take effect upon permit effective date; however, the DO limit of 4.0 mg/L is missing from the permit at outfall 001. This appears to be an error based on the fact sheet discussion - please ensure the DO limit is reinserted into the permit, effective upon the permit effective date. **The Redraft NPDES Permit Part A.I.C (Outfall No. 001) has been corrected to include the DO limit.**
  - On page 5 of the fact sheet addendum, the following statement was made: "EPA has indicated (in public comments on several permits) that any CSS flow-related overflow (after facility headworks) would be a CSO bypass, not a CSO Outfall, subject to Part C CSO bypassing conditions and should be identified as such." We (EPA) want to provide some clarification, to ensure there is no miscommunication: For a POTW with a combined sewer system, after the headworks of the plant any bypass would either be a plant bypass or a CSO-related bypass. In order to be considered a CSO-related bypass, it must be part of the development of the approved LTCP and must meet the minimum treatment requirements of the CSO Policy. It is correctly stated in the fact sheet that such a discharge from the plant (after the headworks) should not be permitted as a CSO. **The Department concurs that any CSO-related bypass must be authorized by the approved Long Term Control Plan (LTCP) and be in compliance with the applicable statutes, regulations, and the enforceable NPDES permit conditions (which incorporate applicable requirements of the cited EPA CSO Policy and the PADEP CSO Policy). The courts have ruled that "policies" do not have the binding force of regulations in themselves, requiring specific permit language for enforcement purposes. The present NPDES Permit and approved LTCP does not authorize any other bypass than the existing Approved LTCP-bypassing. The EPA clarification language has been directly incorporated into the Public Comment response (clarifying bypass requirements) below.**
  - Since EPA objected to the Bethlehem draft permit received at EPA on December 20, 2022, and EPA has determined that the issues in the General Objection have been resolved, PADEP must send a proposed final permit for EPA review in accordance with the MOA. If PADEP decides to public notice a revised draft

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permit, this would restart the permit review process and timelines allowed for under the MOA and 40 C.F.R. § 123.44. EPA expects that the changes made in the March 7, 2023 revised draft will be included in the proposed final permit, or if re-noticed, in the draft permit. **This Redraft NPDES Permit has been issued to allow for EPA and other public comment on the Redraft NPDES Permit. The nature and extent of the permit changes (from the previous Redraft NPDES Permit issued for public comment) precluded issuance of a Final NPDES Permit at this time.**

Other EPA Public Comments: DEP Responses Bolded.

- **General Objection Language Clarification for Fact Sheet Addendum**: We (EPA) want to clarify that we did not object to PA CSO permits statewide. The fact sheet refers to "general statewide EPA objections", and while we understand the intent, the phrase "objection" means something very specific with regards to NPDES permits. We request that you change this language wherever it is used in the fact sheet and instead note EPA's issues/concerns (or similar language) with previous standard Part C permit CSO language.
  - **The Department accepts EPA's clarification regarding the legal/regulatory language involved, as documented in this Fact Sheet Addendum. This Fact Sheet Addendum documents the clarification for the public record.**
  - **The Department noted EPA's request that the previous Redraft NPDES Permit Fact Sheet Addendum language be updated. However, updating the previous (lengthy) Fact Sheet Addendum is unnecessary and would lead to confusion about status of previously settled issues.**
- **Part A.I (Outfall No. 001) 85% Minimum Monthly Average Reduction (TSS) Technology-Based Effluent Limit (TBEL)**: The fact sheet should be clear that the 85% removal for TSS is a TBEL that applies now per 40 CFR 133.102(b)(3) and permit condition Part A, Additional Requirements, paragraph 2. Relief from this TBEL can only be granted if PADEP determines it is appropriate and identifies what level is attainable and should be included the permit (per 40 CFR 133.103) - this seems consistent with the FS discussion. We would recommend Part A.I.C. of the permit cross reference Part A. Additional Requirements, paragraph 2 to reinforce that the 85% standard is a TBEL that applies now. PADEP could consider differentiating monitoring/reporting for wet and dry weather events separately so that PADEP has adequate information to evaluate whether a lower percent removal could be granted in a future permit in accordance with 40 CFR 133.103. **The Department concurs that the narrative TBEL is an existing requirement in effect, unless the permittee demonstrates that it meets the Part A.I Additional Requirements Item 2 requirements for relief (referencing Chapter 92a.47(g, h) which overlaps the referenced 40 CFR 133 requirements).**
  - **A Part A.I (Outfall Nos. 001) Footnote has been added cross-referencing the Part A.I Additional Requirements Item 2.**
  - **The Department is requiring interim monitoring/reporting while giving the permittee the opportunity to address the Chapter 92a.47(g, h) requirements via the required LTCP Update To date, the permittee has not addressed the minimum requirements of Chapter 92a.47(g, h).**
  - **Potential relief options are complicated because the receiving stream (Lehigh River) is impaired due to Total Suspended Solids (TSS) and organic enrichment (Carbonaceous Biochemical Oxygen Demand). The permittee would have to show that the CSO discharges and normal effluent discharges are not contributing to the ongoing impairment.**
  - **The permittee has not proposed any dry/wet weather monitoring plan to determine treatment efficiencies during wet and dry weather. It can pursue this option while updating the CSO LTCP.**
- **Part C DO Schedule of Compliance**: Pg 6 of the FS discusses that a DO schedule is included in the permit in the event that WWTP upgrades are required to meet the new 4.0 mg/L instantaneous minimum limit. In order for the permit to include a schedule for DO, the FS needs to be able to document that the facility cannot meet the limit now and that a schedule is appropriate. PADEP stated that it would be talking with the permittee and would request the existing DO data analyzed based on a DRBC docket requirement. When PADEP evaluates this data, it will need to determine whether the facility can comply with the DO limit or if a schedule is appropriate. **The DO limit will become effective on Permit Effective Date (PED). Available DRBC Monitoring data (several years of monitoring data summarized in the Communications Log below) indicates the facility has been compliant with the new limit. The permittee did not provide any data showing any issue in upfront compliance with the requirement.**
- **Fact Sheet Plant Overflow Clarification (CSO bypass versus non-CSO bypass)**: Pg 7 of the fact sheet notes the following language: "In-plant overflows at less than the 20.0 MGD influent flow (WWTP hydraulic capacity) might

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or might not be classified as CSO events, depending on the case-specific circumstances (cause). The City will have to determine if any overflow event is attributable to CSS flows/loadings." As we (EPA and DEP) discussed, this may be inaccurate and unintended language since you explained that any in-plant overflows less than the 20 MGD flow would not be considered part of the CSO-related bypass, which requirements are clearly described in the fact sheet and permit. Any in-plant overflows less than 20 MGD would have to be considered a plant bypass that would meet the bypass provisions of the permit. Please revise the fact sheet to clarify this. EPA has indicated (in public comments on several permits) that any CSS flow-related overflow (after facility headworks) would be a CSO bypass, not a CSO Outfall, subject to Part C CSO bypassing conditions and should be identified as such. **The Department understands the EPA concern about the need for clarity. The previous Redraft Fact Sheet Addendum language was an attempt to clarify the differing applicable requirements for the permittee (for SSOs, CSOs, and plant overflows including bypasses).**

To further clarify the applicable requirements for Treatment plant overflows:

- **NPDES Permit Part A.II (bypass) definition**: "Bypass means the intentional diversion of waste streams from any portion of a treatment plant". **The bypass definition includes the keyword "intentional". Simply put, not all plant overflows are bypasses under this definition.**
  - **Plant overflows can be the unintentional result of unexpectedly failing machinery/units.**
  - **After initial breakdown/overflow, any subsequent plant overflow might become "intentional" because proper O&M requires any nonfunctional units/equipment be restored to functionality (or equivalent effective action taken to prevent recurrence) in accordance with existing NPDES/WQM permit conditions. Recurrent overflows would become classified as intentional "bypasses".**
    - **Part A.III.C.4 & C.5: Noncompliance Notification requirements pertain to any overflow or other release outside of secondary containment.**
    - **Bypassing Requirements & related include:**
      - **Part B.I.G (Bypassing) requirements pertain including Part A.II definition for "severe property damage"**
      - **Part B.I.E (Proper Operation and Maintenance)**
      - **Part B.I.F (Duty to Mitigate)**
      - **Overlapping Part II Water Quality Management Permits' O&M-related conditions.**
    - **Part A.I Additional Requirements Item 4 pertain during all bypass events:** "The permittee shall monitor the sewage effluent discharge(s) for the effluent parameters identified in the Part A limitations table(s) during all bypass events at the facility, using the sample types that are specified in the limitations table(s). Where the required sample type is "composite", the permittee must commence sample collection within one hour of the start of the bypass, wherever possible. The results shall be reported on the Daily Effluent Monitoring supplemental form (3800-FM-BCW0435) and be incorporated into the calculations used to report self-monitoring data on Discharge Monitoring Reports (DMRs)".
    - **Part A.I (Stormwater Outfall) Permit Footnote: This pertains in terms of monitoring stormwater outfalls when there has been a known release (outside secondary containment) within the individual Outfall drainage area (otherwise representatively sampled) in the prior year.**
    - **Part C.X Stormwater PPC Plan Requirements: Any overflow, spill, leak, or other release outside of secondary containment is a pollution event requiring documentation in the site PPC Plan (pollution incident) and implementation of all applicable IW Stormwater permit requirements. The facility is expected to keep track of any overflow event and to address the Part A.I.H footnote requirement.**
  - **Former CSO Outfall No. 004: The permittee indicated the potential usage of former CSO Outfall No. 004 as an "emergency CSO bypass" under extreme (Hurricane) conditions. The Department has not approved this proposed usage in the NPDES Permit or 2010 Approved LTCP.**
    - **CSO No. 004 has been replaced by CSO Outfall No. 012, and no continued usage is authorized by this NPDES Permit. Any future former CSO Outfall No. 004 usage, even under extreme weather conditions, would be considered an unpermitted CSO discharge.**

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- **The permittee has the option of seeking approval of CSO Outfall No. 004 as an approved CSO (during extreme weather events) during the next LTCP Update (with accompanying NPDES Permit Amendment to incorporate the CSO Outfall No. 004 back into the NPDES Permit).**

- **Plant Overflows due to Hydraulic Overloading: The facility has a 20.0 MGD hydraulic design capacity (see Chapter 94 definition) and 20.0 MGD NPDES Permit-basis flow (which is based upon the Annual Average Daily Flow). In practical terms, the facility is expected to handle 20.0 MGD influent flows (with current flows averaging around 10 MGD) and higher monthly average/daily max flows without any plant overflows. If the facility had an as-built or as-operated <20.0 MGD hydraulic restriction, Chapter 94.21 (existing overload) requirements might be triggered.**
  - **Chapter 94 Hydraulic Design Capacity Definition**: "The maximum monthly design flow, expressed in millions of gallons per day, at which a plant is expected to consistently provide the required treatment or at which a conveyance structure, device or pipe is expected to properly function without creating a backup, surcharge or overflow. This capacity is specified in the water quality management permit (Part II permit issued under Chapter 91) (relating to general provisions)".
  - **Chapter 94 Hydraulic overload definition:** "The condition that occurs when the monthly average flow entering a plant exceeds the hydraulic design capacity for 3-consecutive months out of the preceding 12 months or when the flow in a portion of the sewer system exceeds its hydraulic carrying capacity". In general, the Department anticipates a 20.0 MGD WWTP to have months with influent flows greater than 20.0 MGD, but without plant overflows. Chapter 94.21 (Existing Overload) requirements would apply in event of hydraulic overload.
- **Plant Overflows at ≤20.0 MGD (Treatment Plant hydraulic design capacity) influent flows: It would be impossible to make a technical case that any ≤20.0 MGD plant overflow/bypass is due to Combined Sewer System (CSS) wet weather influent flows due to the existing NPDES/WQM permits' identified 20.0 MGD hydraulic design capacity and existing approved Long Term Control Plan. In addition:**
  - **NPDES Permit Part A.II (bypass-related) definitions and Part B bypass language would apply.**
  - **Chapter 94 Requirements (existing overload) could be triggered.**
  - **Part A.I.K (Identification of Combined Sewer Overflow Discharges) and Part C.III.A (CSO) do not authorize any CSO discharge below the plant's 20.0 MGD hydraulic capacity and the plant's peak wet weather design flow capacity. Unauthorized CSO outfalls and/or CSO bypasses would trigger compliance requirements and corrective actions under the CSO-related permit conditions.**
- **Plant Overflows at >20.0 MGD influent flows: The permittee will be required to identify the cause of the plant overflows and comply with the applicable NPDES Permit requirements cited above.**
  - **EPA has provided the following clarification: "For a POTW with a combined sewer system, after the headworks of the plant any bypass would either be a plant bypass or a CSO-related bypass. In order to be considered a CSO-related bypass, it must be part of the development of the approved LTCP and must meet the minimum treatment requirements of the CSO Policy".**
  - **The NPDES Permit Part C.V (Maximizing Treatment at the Existing POTW) does not authorize any bypassing of secondary treatment at less than 30.0 MGD and as set forth in the Part C (Maximizing Treatment at the Existing Plant a.k.a. CSO bypassing) condition.. Any plant bypass/overflow below 30.0 MGD would be a violation of this permit condition and the approved LTCP.**
  - **The CSO LTCP indicates that the existing facility can handle up to 45 MGD influent flows prior to direction of flow to CSO Outfalls, without any plant overflows. The CSO LTCP also proposed significant plant upgrades (including second aeration system) to allow the facility handle 50 MGD without overflows. Any additional wet weather flow-caused plant overflow and/or bypassing would indicate a need to revise the LTCP and upgrade the plant to be able to handle higher peak wet weather influent flows. If bypassing is expected to recur, a major NPDES Permit Amendment (with LTCP Update) might be required to permit any new CSO bypass.**

- **CSO Outfall No. 003 (Part C CSO Condition Clarification: CSO versus bypass)**: We (EPA and DEP) discussed CSO outfall 003, which the LTCP describes as being at the WWTP, manhole 6A and being used only as an emergency relief during extreme wet weather events and WWTP effluent pump station flap gate issues. It is unclear

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if the flows discharged through CSO 003 are before or after the headworks of the plant. If flows are diverted to 003 after the headworks, then this cannot be permitted as a CSO outfall, but would instead be considered a plant bypass that would need to meet the bypass provision of the permit whenever it is activated. This discharge wouldn't be a permitted discharge point from the plant unless PADEP evaluated the necessary TBEL and WQBEL requirements for the discharge. PADEP noted that it would have to look at the specifics of CSO 003 and get a better understanding of plant flows sent to that outfall. **CSO Outfall No. 003 is prior to the plant headworks and is not a bypass by definition. The (approved 2010) Long Term Control Plan Figure 3-3 (CSO Outfall Locations), Figure 7-1 (Sampling Locations), and Figure 9-1 (Existing Site Layout) show the CSO Outfall No. 003/Manhole 6A on the South Sewer Trunkline/Interceptor prior to the WWTP headworks. The 36-inch overflow manhole is shown physically located adjacent to the existing WWTP Aeration Tanks, with the CSO outfall discharging to Saucon Creek. The February 27, 2023 Bethlehem Public comments, separately forwarded to EPA, includes site figures showing the CSO Outfall relative to the plant headworks.**

- **CSO Outfall No. 004 (Part C CSO Condition Clarification: CSO versus bypass)**: CSO outfall 004 no longer exists and we understand that flows are now discharge to the Lehigh River at CSO Outfall 012. Can you clarify the flow schematic for discharges from CSO outfall 012? It appeared as though Outfall 004 was operated such that flows reaching the plant (or just prior to the plant?) were diverted to 004. It seemed as though they were diverted prior to the headworks, but it wasn't entirely clear. We understand that 004 is eliminated, but if the flow schematic is the same and it is just the outfall location that has changed (new outfall 012), the fact sheet will have to clarify whether those flows to outfall 012 are before or after the headworks of the plant.
    - **CSO Outfall No. 004 was located prior to the plant headworks and was not a bypass by definition, but has not yet been permanently sealed off by the permittee. The February 27, 2023 Bethlehem Public comments, separately forwarded to EPA, includes site figures showing the CSO Outfall relative to the plant headworks. The (approved 2010) Long Term Control Plan Figure 3-3 (CSO Outfall Locations) and Figure 7-1 (Sampling Locations) show the former Outfall No. 004 CSO Outfall/Diversion Manhole 001 (physically located at WWTP) on the North Sewer Trunkline prior to the WWTP headworks, with a discharge to Saucon Creek.**
    - **CSO Outfall No. 012 is located prior to the facility headworks. The February 27, 2023 Bethlehem Public comments, separately forwarded to EPA, includes site figures showing the CSO Outfall relative to the plant headworks.** The 12/12/2012 WQM Permit No. 4812402 (relocation of CSO outfall from Outfall No. 004 (Saucon Creek) to Outfall No. 012 (Lehigh River) IRR indicated the scope of the project:
        - "replacement and relocation of Combined Sewer Overflow (CSO) 004 to a point on the North Interceptor upstream of the connection point of the Northeast trunk line sewer, in accordance with the City's approved CSO Long Term Control Plan (LTCP)"
        - "CSO 012 consists of a diversion/screening structure, regulating sluice gate, isolation sluice gates, self-cleaning screen, triplex pump station, 48-inch RCP outlet pipe to discharge junction box, two 36-inch RCP outfall pipes, check valves, endwall, precast concrete control building, water level monitors, flow meters and water sampler".
        - "Flows will be monitored on the North Interceptor, the Northeast trunk line, the South Interceptor and the WWTP primary clarifier splitter box to provide input for the control of the regulating sluice gate and resulting discharge via the CSO. The CSO is designed to limit the combined wet weather flow from the North and South Interceptors to the WWTP to 45 MGD. The maximum design capacity of the overflow is 15 MGD screened and 45 MGD pumped (during high water levels in the Lehigh River)".
- **Bethlehem-proposed 6 CSO Events/Year Presumptive Goal (Part C CSO LTCP Update Requirement)**: We (EPA) provided a general statement in the meeting that while the permittee requested a 6 overflow events per year CSO performance standard, there was little to no information in the current LTCP that supports that standard. We acknowledge that PADEP is requiring an LTCP update and will be evaluating the selected CSO performance standard and updated CSS information, but it is noted that if the permittee is discharging less than 4 events/year (as presented in the current LTCP), a 6 overflow events/year standard wouldn't seem justifiable. **The Department concurs that the burden would be on the permittee to justify any proposed 6 CSO Events/year LTCP Presumptive Goal in the next LTCP Update. See response to overlapping permittee comments below for further discussion.**
- **Part C CSO Condition Design Conditions**: On pg 37 of the permit we (EPA) recommend just stating "under design conditions" rather than "under wet weather design conditions" for consistency in permit language. Subsequent EPA comments for other CSO facilities' Draft NPDES Permits requested that the "design conditions" be further specified in the equivalent Part C conditions. **Therefore, the Department has identified the design conditions as "≤50**

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MGD peak wet weather influent flow design conditions" in accordance with the approved 2010 City of Bethlehem CSO Long Term Control Plan (LTCP). While, the NPDES Permit Part C.III.C.2 allows the permittee to option of choosing between the assorted LTCP Goals in the next LTCP Update, due partly to extensive previous EPA CSO LTCP-related comments, the approved LTCP has not been superseded at this time (except as statutory, regulatory, and permit conditions supersede in event of any conflict). The (approved) August 2010 Bethlehem WWTP CSO Long Term Control Plan included the following information:

- The proposed Act 537 Plan Update improvements to the WWTP will result in increased plant wet weather capacity and process reliability. (Section ES-2, page ES-2)
- The impact of relocating the CSO 004, as well as the incremental additional CSO reductions associated with plant improvements to accommodate peak flows of 50 MGD, is described in Section 10 of this report and will be further determined during post-construction monitoring. (Section ES-2, page ES-2)
- While the WWTP operating data indicate historical peak flows through the WWTP of approximately 40 to 45 MGD, preliminary evaluations of the proposed Act 537 Plan Update wet stream processes indicate that the peak wet weather flows processed through the plant's biological system can be increased to 50 MGD. This target flow rate represents a ratio of up to 2.5 times the plant permitted flow, which is commonly used for establishing reasonable peak wet weather flows for wastewater treatment facilities. (Section ES-2, page ES-2)
- Summary of the annual climatic data for the area as computed on the Pennsylvania State Climatologist website for the years 1971 through 2000 for the Allentown, PA monitoring location. (Section 2.2.1 Climate):
  - Mean Precipitation (inches): 45.17
  - Mean Snowfall (inches): 32.3 inches
- The most commonly used criterion of the presumptive approach contained in the federal and state CSO Control Policies require that the number of system-wide CSOs be less than 4 to 6 events per year. For the City's system, the CSO activation frequency of 2 events per year for the last 9 years is less than the criterion of CSO activation frequency of less than 4 to 6 events per year provided by the presumptive approach. Additionally, the City captures and treats over 99% of the flows generated within the City's system during wet weather conditions, which well exceeds the 85% capture criterion of the federal and state CSO Control Policies. (Section 6.3)
- The WWTP upgrades that are recommended in the 2008 Act 537 Plan will increase the wet weather treatment capacity of the plant while restoring the permitted dry weather treatment capacity. The recommended WWTP wet stream process that best meets the wastewater treatment needs of the planning area is plug flow operation with anoxic selector zones, as identified in the 2008 Act 537 Plan. The wet weather treatment capacity of the Bethlehem WWTP after the recommended upgrades are in place, with all units in service, is estimated to be 50 MGD, without the need for internal plant bypasses around secondary treatment. (Section 9.2). **NOTE**: The Act 337 Planning upgrades were also approved by the Delaware River Basin Commission (DRBC) Docket. Section 9.2.1 wet weather improvements include construction of a secondary treatment train (with demolishment of existing Trickling Filters); replacement of surface aerators in the existing aeration tanks; new blowers/blower building; conversion of intermediate clarifiers into final clarifier units; modification of existing final clarifiers; upgrading effluent pump station. Some of the work has been completed by the permittee, but not construction of a new secondary treatment train to date. Some listed Solids Handling improvements (Section 9.2.2) have also been done, but not all. Other listed improvements included conversion to Hypochlorite disinfection, etc.

- **Part A.III.C.2 (Planned Changes to Waste Stream)**: There is a fact sheet discussion about planned changes to waste stream. The highlighted language below seemed to imply the condition might have been altered, but when comparing the previous and current drafts of the permit the language looks unchanged. Is this correct? Was the fact sheet just providing clarification/explanation about the purpose of the requirement and how it functions?
  - "NPDES Permit Part A.III.C.2 (Planned Changes to Waste Stream: Planned Increases In Pollutants): The City requested clarification about an apparent conflict between Chapter 92a.24(a) and the permit language stating "that if the Department does not respond to a notice of increased "approved" pollutants within 30 days, the increase is deemed approved. See Redraft NPDES Permit language. The required notice (meeting all permit requirements) will allow for Department decision-making. The permit language will authorize acceptance of the new wastestream if the conditions are complied with."

  The permit language was unchanged. The permittee had requested clarification on the NPDES permit language and Chapter 92a.24(a) requirements regarding new waste stream acceptance due to a perception that the requirements conflicted. The previous Fact Sheet was clarifying the requirements of both the existing permit condition and cited regulation.

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- **Part C.VII (Industrial Pretreatment Plan)**: Part C.VII.H. of the permit (Pretreatment) includes EPA's old mailing address. Please revise the permit to include our updated address: **Change made to EPA-identified current Address**:

  Pretreatment Coordinator (3WD41)
  U.S. Environmental Protection Agency
  1600 John F Kennedy Blvd
  Philadelphia, Pennsylvania 19103-2852

Permittee (Bethlehem City) Public Comments: The February 27, 2023 Bethlehem Letter public comments are summarized below. See overlapping EPA comments above and Communications Log (below) for overlapping discussions.

Part A.I.A, A.I.B, A.I.E, A.I.F, and Part C.III DO Three-Year Schedule of Compliance: Bethlehem requested deletion of the new DO limits (4.0 mg/l Instantaneous Minimum) and schedule of compliance on the basis that the requirement is not found in the most recent September 8, 2022 Delaware River Basin Commission (DRBC) Docket No. D-1971-078 CP-5 and therefore not consistent. They requested only monitoring requirements for the NPDES Permit on the basis of a need for consistency between DRBC and NPDES Permit requirements. **The Department could not grant this request.**

- **The NPDES Permit requirements are based upon the requirements of Pennsylvania statutes, regulations, and scientifically-based technical guidance policies. Chapter 92a.12 requires the NPDES Permit to incorporate any more stringent (interstate) DRBC requirement for consistency, but grants no relief from Pennsylvania requirements when DRBC requirements are less stringent.**
- **The permittee is free to petition the DRBC to add the more stringent NPDES Permit requirements to the applicable DRBC Docket for the sake of consistency.**
- **The permittee chose not to provide any data showing that it could not meet the new DO limits upfront, as to allow for a schedule of compliance, as discussed in the Conference Call. Therefore, the new limits will take effect upon Permit Effective Date.**
- **DO is already a site-specific environmental concern.**
  - **The receiving Lehigh River segment is already known to be impaired with organic enrichment/low DO among the known causes.**
  - **The Lehigh River is a WWF (warm water fishery) where temperature restricts the availability of oxygen in the receiving stream, which will be affected by sewage effluent's oxygen demand.**

Part A.I.C Effluent Monitoring for Color: The permittee requested deletion of the new effluent color monitoring on the basis that the requirement is no longer found in the most recent September 8, 2022 Delaware River Basin Commission (DRBC) Docket No. D-1971-078 CP-5 and therefore not consistent. The permittee noted the requirement came originally from a previous DRBC Docket and should be dropped for consistency. **The Department has agreed in part. The Department has confirmed that this monitoring requirement is no longer in the DRBC Docket and no longer needs to be incorporated into the NPDES Permit per Chapter 92a.12. The monitoring requirement has been changed to "upon request". See above regarding the "consistency" concern.**

Part A.I.C and Part A.I Additional Requirements Item 2 (CBOD5 and TSS Minimum Monthly Average Removal Requirements): The permittee requested deletion of the new 85% CBOD5 reduction reporting requirement on the basis that the requirement is no longer found in the most recent September 8, 2022 Delaware River Basin Commission (DRBC) Docket No. D-1971-078 CP-5 and therefore not consistent. The permittee noted the 85% CBOD5 requirement came originally from a previous DRBC Docket and should be dropped for consistency. The permittee noted that the TSS requirement is not in the DRBC Docket and should be dropped for consistency. **The Department has agreed in part. The CBOD5 minimum monthly average reduction reporting requirement has been changed to "monitoring and reporting" in Part A (same as for TSS) reporting requirements.**

- **The Department has confirmed that the 85% CBOD5 minimum monthly average reduction requirement is no longer in the DRBC Docket and no longer needs to be incorporated into the NPDES Permit per Chapter 92a.12. However, the reduction is an existing NPDES Permit Part A.I Additional Requirement Item 2 "narrative Technology-Based Effluent Limit" requirement unless specific regulatory (Chapter 92a.47(g, h)) requirements are shown to be met via a LTCP Update and/or NPDES Permit Amendment.**
- **The receiving stream (Lehigh River) is impaired by TSS and organic enrichment (CBOD5). The permittee would have to show that the facility is not contributing to the ongoing impairment in addition to Chapter 92a.47(g, h) requirements to obtain relief.**

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- **See related EPA comments above and overlapping 2/15/2023 Conference Call for further discussion.**
- **See above regarding "consistency" between DRBC Docket and NPDES Permit requirements.**
- **The permittee has not proposed any dry versus wet weather monitoring plan at this time to gather information during the NPDES Permit Term. It can pursue this option but there is no guarantee that any gathered data will allow meeting the Chapter 92a.47(g, h) requirements.**

Part A.I.C, A.I.D, A.I.E, A.I.G, A.I.I (Effluent Monitoring for E Coli): The permittee requested deletion of new E Coli monitoring requirements on the basis of redundancy because that WWTP already has Fecal Coliform limits, and E Coli are a subset of Fecal Coliforms. **The Department could not concur. New Pennsylvania Chapter 93 E Coli Water Quality Standards now apply. The monitoring requirements are standard for this size of facility. Please note the Department will be evaluating whether future E Coli permit limits are required for PA Sewage Treatment Plants. See the Chapter 92a.12 process for proposed new limits based on new Water Quality Standards in that event.**

Part A.I.C (Toxics Monitoring Requirements – Total Cadmium, Hexavalent Chromium, Total Phenols, and Total PCBs):

The permittee provided the following additional effluent sampling data in its public comments:

Hexavalent Chromium:
- 2/1/2023 Sample (composite):
  - Chromium VI: <0.00025 mg/l (<0.25 ug/l)
  - Total Chromium: 0.0070 mg/l (7.0 ug/l)
- 1/25/2023 Sample (composite):
  - Chromium VI: <0.00025 mg/l (<0.25 ug/l)
  - Total Chromium: 0.0047 mg/l (4.7 ug/l)
- 1/23/2023 Sample (composite):
  - Chromium VI: <0.00025 mg/l (<0.25 ug/l)
  - Total Chromium: 0.0040 mg/l (4.0 ug/l)

Total Cadmium: The permittee requested deletion of the Total Cadmium monitoring requirement. The public comment referenced previous Bethlehem sample data with concentrations at <0.2 ug/l. The permittee indicates that its monthly monitoring of the plant effluent returned all results as <0.2 ug/l and in some cases <0.1 ug/l. The permittee noted the DEP Toxic Management Spreadsheet included an entry of 0.2 ug/l as the maximum discharge concentration. The permittee believes the maximum concentration should be identified as <0.2 ug/l based on its current data. **The Department could not grant this request.**

- **The Department cannot ignore the 0.3 ug/l Total Cadmium result. The permittee did not make a technical case that the 0.3 ug/l sampling result was incorrect. The facility service area includes industrial sources that can lead to spiking.**
- **The permittee did not supply any additional sampling data. It would take a minimum of ten (weekly or monthly) samples (presented on a table with sampling date, sample concentration, and QL) to allow the Department to calculate the Long Term Average Monthly Effluent Concentration (LTAMEC) and daily Coefficient of Variability (COV) via EPA-approved statistics to update the Reasonable Potential Analysis (including the Toxic Management Spreadsheet). In practical terms, the LTAMEC would have to be <10% of the calculated WQBEL (see updated TMS output below for the WQBEL) to avoid monitoring requirements.**

Hexavalent Chromium: The permittee requested deletion of the Hexavalent Chromium monitoring requirement. The public comment referenced previous Bethlehem Total Chromium sample data with concentrations at 6.7 ug/l, 4.2 ug/l, and 3.4 ug/l. The permittee noted that the TMS used 6.7 ug/l Hexavalent Chromium value was identical as the Total Chromium value, which was a worst-case assumption. The permittee noted that its previous 2013 application reporting was at <10 ug/l Hexavalent Chromium. The permittee provided three sampling results (see above) for Total Chromium and Hexavalent Chromium. The permittee believes the maximum concentration should be identified as <0.25 ug/l based on its current data. **The Department has deleted the monitoring requirement based on the new Hexavalent Chromium sampling data which allowed updating of the Reasonable Potential Analysis (inputting the maximum Total Chromium and maximum Hexavalent Chromium data into the TMS spreadsheet water quality model.**

- **The Reasonable Potential Analysis was based on permittee-provided application data. The City-provided 2018. 2019, and 2020 analytical information was not provided in the form of NPDES Pollutant Group Tables.**

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The Chromium result was unclear if for Total or hexavalent chromium (so used for both constituents). The EPA Sufficiently Sensitive Rule would otherwise have required the use of previous insensitive <10 ug/l non-detect concentration for Hexavalent Chromium if the 2013 Application data had been used.

- **Updated Reasonable Potential Analysis' TMS Spreadsheet print-out (after incorporation of new Total Chromium and Hexavalent Chromium data):**

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Cadmium	Report	Report	Report	Report	Report	µg/L	2.58	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	23.9	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	172	AFC	Discharge Conc > 10% WQBEL (no RP)

BethlehemfinalTMS.pdf

<u>Total Phenols a.k.a. Total Phenolics (monthly monitoring requirement (Chapter 92a.61))</u>: The permittee requested deletion of this monitoring requirement. The permittee noted the requirement was not clear (phenol versus Total Phenols a.k.a. total phenolics), that the TMS did not require monitoring, and that there is no public water intake nearby, with Lehigh and Delaware River dilution preventing possible impacts on the public water supply for a Chapter 93 Water Quality Standard meant to protect public water supplies. **The Department has changed the monitoring frequency to annual and clarified the requirement is for Total Phenols monitoring. An annual monitoring requirement is not an onerous requirement.**

- **Please note the Department's Reasonable Potential Analysis includes, but is not limited to the DEP Toxic Management Spreadsheet (TMS). The Department has broad authority to require additional monitoring (Chapter 92a.61) to gather information.**
- **<u>Source of Total Phenols/Phenolics monitoring requirements</u>: The historic application data (summarized in the 6/24/2021 Bethlehem application update letter table below), with no known source per City, indicated potential for spiking from an unknown source. Spiking of one constituent can mean spiking of additional constituents if the source is unknown.**

Table 1 - City of Bethlehem - NPDES Permit Application
Parameters of Concern - Less Than Ten Recent Monitoring Results

	2013 NPDES Permit Application Data (ug/l)							*Priority Pollutant Scan Data (ug/l)*			
Parameter	DEP Target QL	Target QL Used	Maximum Result	Average Result	Governing Effluent Limit	Potential Avg. Monthly Effluent Limit	Max Result Compared to Govering Limit (%)	10/11/2018	10/11/2019	10/15/2020	Max Result Compared to Govering Limit (%)
TDS	2,000	2,000	446,000	334,000	1,136,000	Monitor	39.3%	317,000	422,000	348,000	37.1%
Antimony	2.0	5.0	ND	ND	10.3	Monitor	0.0%	0.5	2.0	2.0	19.4%
Dissolved Iron	20.0	20.0	220.0	90.0	550	Monitor	40.0%	NA	NA	NA	-
Total Phenols	5.0	10.0	76.0	26.0	11.4	11.4	666.7%	< 10.0 (1)	< 10.0 (1)	< 10.0 (1)	-
1,2-Dichloroethane	0.5	5.0	ND	ND	12.5	Monitor	0.0%	< 0.5	< 0.5	< 0.5	0.0%
2,4-Dinitrophenol	10.0	50.0	ND	ND	126	Monitor	0.0%	< 10.0	< 10.0	< 10.0	0.0%
Bis(2-Ethylhexyl)Phthalate	5.0	10.0	ND	ND	39.6	Monitor	0.0%	< 5.0	< 5.0	< 5.0	0.0%
2,4-Dinitrotoluene	5.0	10.0	ND	ND	1.65	1.65	0.0%	< 5.0	< 5.0	< 5.0	0.0%
2,6-Dinitrotoluene	5.0	10.0	ND	ND	1.65	1.65	0.0%	< 5.0	< 5.0	< 5.0	0.0%
Nitrobenzene	5.0	10.0	ND	ND	31.1	Monitor	0.0%	< 5.0	< 5.0	< 5.0	0.0%

ND - Not Detectable
NA - Not Analyzed
(1) - Result for Phenol Only
Generally, No Monitoring Required if Maximum Result is < 10% of Governing Limit

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Total PCBs (Annual Monitoring (Chapter 92a.61)): The permittee requested deletion of this requirement. The permittee noted that the Lehigh River has been listed as impaired by PCBs from unknown sources since 2008, but no previous monitoring had been required and no River TMDL has been developed (which would have automatically triggered Pollutant Group sampling requirements per Application Instructions). The permittee noted that the Bethlehem TMS output did not identify PCBs as a parameter of concern. **The Department has not granted this request. An annual Total PCBs monitoring requirement (not addressing analysis for specific PCB constituents) is not an onerous requirement.**

- **Please note the Department's Reasonable Potential Analysis includes, but is not limited to, the DEP Toxic Management Spreadsheet (TMS). The Department retains broad authority to require monitoring & reporting (Chapter 92a.61). At present, the Department is beginning to require IW NPDES Stormwater Application sampling requirements to address potential contributions to known causes of stream impairment not otherwise sampled for, in comparison.**
- Source of Requirement: **The Lehigh River is impaired due to PCBs of unknown origin. Annual monitoring had been added to the NPDES permit to gather information (Chapter 92a.61). No application information was provided regarding PCBs in the application, so the TMS had no data to evaluate.**

Part C.I.E (Operations & Maintenance (O&M) Plan Submittal Requirement): The permittee requested that the required submittal date be changed to 24 months after PED (from 18 months after PED). **The Department has granted this request, but notes the facility should have an existing O&M Plan that can ensure meeting all existing NPDES/WQM permit requirements, and should otherwise be updating it to address facility changes (operational and/or changes to permitted units/equipment) as needed.**

Part C.I.F (High Flow Management Plan (HFMP)): The permittee requested that the required submittal date be changed to 24 months after PED (from 18 months after PED). **The Department has granted this request, but notes the facility should have an existing HFMP meeting all NPDES/WQM permit requirements, and should otherwise be updating it to address facility changes (operational and/or changes to permitted units/equipment) as needed.**

Part C.II Ammonia-N Three-Year Schedule of Compliance: The permittee noted that it has made sufficient progress to minimize exceedances of its existing Ammonia-N effluent limits and will be completing construction of the two remaining capital projects which are designed to achieve consistent compliance with these limits. The permittee noted it had completed a number of major capital projects (installation of ten new mechanical aerators, installation of DO Monitoring & Control System in its aeration tank, and significant upgrades to its sludge thickening, digestion, and dewatering systems). The permittee noted its belief that the majority of the Ammonia-N effluent limit exceedances were caused by unforeseen mechanical failures or equipment being out-of-service due to construction activities at the plant. The permittee noted the West Intermediate Clarifier had been refurbished and upgraded, and that the East Intermediate Clarifier project was estimated to be complete by July 31, 2023. The Installation of the Chemically Enhanced Primary Treatment (CEPT) System was estimated to be complete by December 31, 2023. **Noted. As the permittee believes that it can comply with the Ammonia-N limits by the completion of the remaining projects (estimated by December 31, 2023), and has not requested any new Daily Maximum Limit Schedule of Compliance, the Department is deleting the Part C.II Ammonia-N Schedule of Compliance. Instead, the new Ammonia-N Daily Max Limit (based on the existing IMAX limit) will become effective March 1, 2024 (less than 1 year) or Final Permit Effective Date if later than March 1, 2024. Any additional time could be negotiated for in a Consent Order & Agreement (CO&A).**

Part C.IV Hydraulic Restriction SSO Three-Year Schedule of Compliance: The permittee noted that this schedule of compliance will be deleted per Conference Call discussion. **Noted.**

Part C.VI (Combined Sewer Overflows): The permittee provided the following comments:

- **CSO Outfall No. 003**: CSO No. 003 is located before the plant headworks and is a CSO outfall. **Noted. This was also shown on the provided figures provided with the public comments.**
- **CSO Outfall No. 004**: CSO No. 004 is located before the plant headworks and is considered a bypass for emergency use only. **This CSO Outfall has been replaced by CSO Outfall No. 012, and is no longer an authorized CSO Outfall by the approved Long Term Control Plan (LTCP) and has not been incorporated into this Redraft NPDES Permit (as it would require an LTCP Update to justify any future usage).**
    - **It is not a "bypass" by NPDES Permit Part A.II definition as it is prior to the existing Headworks.**

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- **In event of emergency usage, it would be reported as an unpermitted CSO discharge. The Department does have enforcement discretion in event of very unusual circumstances (such as a hurricane-induced overflow event). The location was shown on the provided figures.**

- **CSO Outfall No. 012**: CSO No. 012 is located upstream of the WWTP site along the Lehigh River, before the plant headworks, and is also a CSO Outfall. **Noted. This was also shown on the provided figures.**
- **6 CSO Events/Year CSO Presumptive Goal Request**: The permittee requested a 6 CSO Event/year LTCP Presumptive Goal. The permittee noted the City has had up to three (3) CSO Events/year in a single year, over the last five (5) years. Since these events are completely weather dependent and the City is required to update its LTP, the permittee requested the six (6) CSO Events/year Presumptive Goal "until the LTCP is completed to minimize potential violations of this maximum CSO event limitation". The updated LTCP may then identify options to ensure compliance with less than six CSO events/year. **The Department could not grant this request at this time.**
  - **The LTCP Goal is a narrative Water Quality-Based Effluent Limit (WQBEL), but final compliance is due by the final milestone date (December 31, 2042). Compliance with interim LTCP milestone/requirements and the Nine Minimum Controls (NMCs) is required in the meanwhile.**
  - **At this time, it is not clear whether the LTCP Presumptive Goal options are available to the permittee, because they presume that the CSO discharges are not contributing to existing receiving stream impairments. This will require an LTCP Update with stream monitoring data/evaluation due to ongoing Lehigh River TSS impairment caused by CSOs (and/or contribution to other Lehigh River Impairments).**
  - **Given less than 4 CSO Events/year in the last five (5) years, the burden would be upon the permittee to justify any greater frequency in the LTCP Update, even if LTCP Presumptive Goals are a site-specific option. Any such case must be made in the LTCP Update required by the LTCP Schedule of Implementation.**
  - **The existing approved 2010 LTCP includes a DRBC/Planning approved plan to construct a second Aeration Train to allow the City to cease discharging any CSOs at below >50.0 MGD peak wet weather influent flows. The Department expects this second Aeration Train to be installed as approved by 2042, unless an alternative solution is approved via a future LTCP Update.**
- **Proposed Changes in LTCP Implementation Interim Milestones:** In addition to the above changes in the HFMP submittal schedule (to 24 months after PED), the permittee requested the following changes:
  - **Submission of (initial) LTCP Update to PADEP**: Change from 12 months to 36 months from PED requested. **The Department could only partially grant this request. The interim compliance milestone date has been moved to 24 months after PED. See below for discussion.**
  - **Implementation of Stream Study**: Change from 24 months to 36 months from PED requested. **Granted.**
  - **Complete Stream Study**: Change from 36 to 48 months from PED requested. **Granted.**
  - **Stream Study Report to PADEP**: Change from 48 months to 54 months from PED requested. **Granted.**
  - **Submit Final LTCP to PADEP**: Remaining at 54 months from PED. **No change requested.**
  - **New Requirements in the Redraft LTCP Schedule of Implementation: See revised LTCP Schedule of Compliance excerpt below.**
    - **Existing Stream Sampling Requirement (effective on PED): The 2010 LTCP included ongoing stream sampling and reporting requirements. Due to new Chapter 93 E Coli Water Quality Sampling, E Coli Monitoring and Reporting requirement has been added to the ongoing stream monitoring & reporting. The new requirement will become effective on PED (Permit Effective Date).**
    - **New 12-month NMC Implementation Plan Update Requirement: Chapter 92a.51 does not allow for interim compliance milestones more than one year apart. Moving the LTCP Update submittal requirement to 24 months required creation of a new 12 month interim compliance milestone with deliverable to the Department. In this case, the existing 2010 LTCP is unclear on compliance with several existing NMC requirements (status of implementation of Fats, Oil & Grease (FOG) Plan in the Bethlehem Industrial Pretreatment Plan per 2010 LTCP; status of CSO Outfall No. 003 compliance with Solid & Floatable Controls NMC; whether the upgraded plant can handle higher peak wet weather flows to maximize treatment to minimum standards; etc.). Previous EPA comments on the Draft NPDES Permit also stressed the need for the permittee to re-evaluate its present state of compliance with the existing Nine Minimum Controls (NMCs) which are existing enforceable Technology-Based Effluent Limitations. Therefore, the Department is requiring an NMC Implementation Plan Update within 12 months of PED.**

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- **<u>Moved 24-month LTCP Update Requirement (including a detailed site-specific Stream monitoring and evaluation plan allowing for technical review; etc.)</u>: In practical terms, the LTCP Update must be submitted at this point in the LTCP Schedule of Implementation because of the site-specific issues that must be addressed, including but not limited to.**
  - **Need for a detailed Stream Monitoring Plan and Evaluation Plan, adequate for technical review, to address assorted site-specific considerations:**
    - **Determining whether any LTCP Presumptive Goal is allowable, given known stream impairments (including impairments due to CSOs). The alternative Demonstration Goal option would require an adequate plan to demonstrate that no water quality impacts from the CSO discharges.**
    - **Determining whether any Chapter 92a.47(g, h) relief from the existing 85% minimum monthly average reduction requirements for TSS and CBOD5/BOD5 is feasible due to potential contribution to ongoing stream impairments.**
    - **This study would also be the appropriate time to determine whether the Treatment Plant effluent is otherwise contributing to existing stream impairments (Organic enrichment/low DO, etc.). If so, more stringent NPDES Permit limits and/or additional plant upgrades might be required in the next NPDES Permit term.**
  - **Need for a technical case to support the use of an LTCP Presumptive Goal and/or specific LTCP Goal if asking for more than 4 CSO Events/year.**
  - **Etc.**

Milestone	Completion Date
Continue Implementation of the NMCs	Upon Permit Effective Date
Continue Implementation of the LTCP **(including updating the existing stream monitoring plan to include E Coli stream sampling)** in accordance with all permit conditions**.**	Upon Permit Effective Date
Submit Annual CSO Status Report to Department with Chapter 94 Report with annual City determination whether any proposed CSO LTCP Goal has been met for the calendar year.	March 31 of each year
Submit LTCP Progress Report (including determination whether any LTCP Goal has been achieved) to Department with Chapter 94 Report, incorporated into the Annual CSO Status Report.	March 31 of each year
Submit DMR Supplemental Reports for CSOs including DEP Stream Monitoring Data Supplemental Reporting Form	Within 28 days of the end of a calendar month
Updated Nine Minimum Control (NMC) Implementation Plan to address detailed implementation of FOG Program, Floatable & Solids controls for Outfall No. 003, and any other NMC updating/implementation requirements.	**12 months of PED**
Submittal of CSO LTCP Update with updated information/analysis (including summarization/analysis of all post-2010 available stream and CSO discharge data); identification of any overflows in the CSS collection system/conveyance pipelines and WWTP since 2010; updated NMC implementation **plan ~~regarding FOG Program and Floatable & Solids controls for Outfall No. 003~~**; up-to-date High Flow Management Plan (HFMP) meeting all NPDES permit	**~~Within 12 months of PED~~ 24 months of PED**

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requirements; updated NMC/Post-Construction Compliance Monitoring (PCCM) Plan/Stream Study Plan able to determine if CSO discharges are contributing to Water Quality Standard (WQS) exceedances and/or existing stream impairments now or upon achievement of chosen LTCP Goal.	
Implementation of CSO LTCP Update	Upon Department approval or approval with conditions
Implementation of approved Stream Study	~~**24 months after PED**~~ **36 months after PED**
Stream Study completion and Letter Report whether **any chosen** LTCP Presumption Goals are valid and all LTCP measures have been implemented.	~~**36 months after PED**~~ **48 months after PED**
Stream Study Report submittal with analysis whether the chosen LTCP Goal is protective of Water Quality Standards and has been achieved.	~~**48 months after PED**~~ **54 months after PED**
Submit Final LTCP with Final Post-Construction Compliance Monitoring (PCCM) Plan	54 months after PED (with NPDES Permit Renewal Application)
Implementation of Final CSO LTCP Update and Post-Construction Compliance Monitoring Plan	Upon Department approval or approval with conditions
LTCP Final Compliance Date	December 31, 2042

Part C.VIII.C (Solids Management): The permittee requested deletion of the requirement to submit the "Sewage Sludge Management Inventory" including the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, “Improving POTW Performance Using the Composite Correction Approach” (EPA-625/6-84-008)), compared with the actual amount disposed during the year. The permittee indicated its belief that the EPA methodology is “overly simplistic and produces inaccurate results”, that it is a preliminary screening tool only, and does not take into consideration influent TSS, solids added to the process by hauled waste and various return flows from sludge thickening, digestion, and dewatering processes, added treatment chemicals and other processes, and therefore cannot estimate the City’s actual sludge production with any degree of accuracy. The permittee noted that the DEP PADEP Sludge Estimating Worksheet assumptions (incorporating the EPA methodology) may lead to inaccurate estimates (but provided no further details). The permittee noted it already provides monthly EDMR Supplemental forms that provide significant amounts of sludge related data to the Department. **The Department cannot grant this request, which is a standard requirement for POTWs. The permittee is free to provide detailed explanation of its concerns with the future annual Sewage Sludge Management Inventory submittals. The permittee can voluntarily provide any more accurate estimation of expected sludge production versus actual sludge production (in addition to the minimum requirement), with technical explanation.**

Part A.I.H and Part C.IX (Requirements Applicable to Stormwater Outfalls): The permittee provided the following comments:

- **Part A.I.H (Request to delete the pH and Oil & Grease Limits):** The permittee believes the limits, based upon Chapter 95.2, are “clearly meant for the discharge of wastewater from industrial sources and is not applicable to stormwater discharges from a municipal sewage treatment plant”. **The Department could not grant this request. Major Sewage Treatment Plants are industrial facilities subject to the 40 CFR 122.26(b)(14) IW Stormwater regulations incorporated-by-reference into PA regulations. Major Sewage Treatment Plants are industrial facilities, even if it receives approved municipal wastes such as septage. Chapter 95.2 applies.**
- **Part A.I.H foot note should include Outfall No. 011 as represented by Outfall No. 007:** The permittee believes that Outfall No. 011 can be represented by Outfall No. 007 Sampling. **The Department does not agree.**
    - **The permittee previously requested that Stormwater Outfalls No. 007 (material handling areas) and No. 011 (three catch basins in walkway near aeration tanks) be representatively sampled for Outfalls No. 008 (driveway and grassy area between Trickling filters and final clarifers), No. 009 (grassy area between intermediate clarifier and trickling units), No. 010 (grassy area between existing aeration tanks and intermediate clarifiers). The Department subsequently agreed that Outfalls #008, #009, and #010 can be represented by the other outfalls if there is no known spill, leak or other release within**

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their stormwater drainage area(s) in the previous year, and incorporated the language into Part A.I.H footnote.
  - **In practical terms, the aeration tanks are a known hydraulic limitation (requiring bypassing during peak wet weather events) with potential for overflow occurring within that stormwater drainage area.**
  - **The long-term pattern of plant overflow/bypasses (unspecified locations relative to the stormwater outfalls) does not support any omission of Outfall No. 011 stormwater sampling.**
- **Part A.I.H (Request to delete the Total Iron Monitoring Requirement):** The permittee believes that there is no basis for Total Iron monitoring because the facility does not store or utilize any iron-containing materials in its treatment process. **In the absence of any available sampling data, the monitoring requirement has been retained. Total Iron can originate from historic legacy pollution, rusting equipment/structures, etc. The permittee will be able to make its case for alternative monitoring requirements in the next NPDES Permit Renewal.**
- **Part A.I.H (Annual Sampling Requested):** The permittee requested going to annual stormwater sampling. **The Department could not grant this request. Current standard IW Stormwater permitting requirements include semi-annual sampling requirements. In this case, stormwater TSS might be contributing to ongoing stream impairment.**
- **Part C.X.B.1 (PPC Plan)**: The permittee requested deletion of the word "develop" in terms of the PPC Plan when they have an existing PPC Plan that is being implemented. **The Department does not agree. The language is standard, and reflects that the site Preparedness, Prevention, and Contingency (PPC) Plan is a living document that can and should be further developed during the NPDES Permit Term as needed. To date, no updated PPC Plan has been submitted to the Department showing that all Part A.I.H and Part C.X (Stormwater) requirements have been met.**
- **Part C.X.G (Request for deletion of TSS Benchmark)**: The permittee requested deletion of the benchmark condition (100 mg/l TSS) on the basis of no previous Fact Sheet basis, and that the permittee "has no way to treat or change the quality of stormwater that runs off from the plant site to meet any numeric limit". **The Department could not agree to this change.**
  - **Basis: The statewide PAG-03 IW Stormwater General Permit now includes benchmarks (not permit limits) that require the permittee to take any necessary corrective action plan after two consecutive exceedances of the benchmark for most industrial categories. In this case, ongoing stream impairment considerations mandate monitoring at minimum due to the site-specific consideration of potential contaminated stormwater from contributing to the existing Lehigh River TSS impairment.**
  - **IW Stormwater Requirements**:
    - **The first way to "treat" IW Stormwater is to prevent any contamination of the stormwater runoff by stormwater Best Management Practices (some of which are explicitly listed in the NPDES Permit Part C.X). Stormwater BMPs include structural BMPs including secondary containment and non-structural BMPs (O&M practices) to prevent contamination of stormwater.**
      - **See the PAG-03 for stormwater BMPs for other industrial categories if implementation of the NPDES Permit-listed BMPs are not adequate to meet the benchmark.**
      - **Treating stormwater to reduce or eliminate TSS is a standard E&S control/stormwater control practice that can be address in multiple ways. See the PADEP Chapter 102 Manual, PADEP Stormwater BMP technical guidance, etc.**
    - **Stormwater that comes into contact with waste or wastewater is no longer "IW Stormwater" (becoming Industrial Wastewater), and must be captured and properly disposed of as IW wastewater.**

Compliance History: One open violation per October 31, 2023 WMS query (Open Violation by Client Number). The permittee will have opportunity to resolve this open violation during the public comment period. Final NPDES permit action will benefit the public and environment by updating the old NPDES Permit.

FACILITY	INSP PROGRAM	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
BETHLEHEM CITY WWTP	WPC NPDES	938124	12/06/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit

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- **CO&A**: The Department has discussed the option of a Consent Order & Agreement to address any additional unresolved compliance issues. See 2/15/2023 Conference Call discussion summarized in the Communications Log below.
- **Long Term Pattern of Ammonia-N Issues**: There has been a long-term pattern of exceedances of the existing monthly average Ammonia-N limits, but the permittee expects to come into compliance with the limits by the end of 2023 per its public comments (above and per 2/15/2023 Conference Call in Communications Log).
    - **2023 Plant Upgrade Project Info (in addition to above public comment information):** The 4/28/2022 WQM Permit Amendment No. 4818402-A1 IRR (chemically enhanced primary treatment (CEPT)) indicated: "As per the Design Engineer's report, the cause of ammonia exceedances was insufficient nitrification in the activated sludge system, primarily due to intermediate clarifier mechanical failure and shutdown for repairs or extreme cold weather minimizing the activity of the nitrifying organisms. It's assumed the CEPT will improve nitrification stability by reducing the organic and solids load to the secondary process, which will in turn decrease waste activated sludge production and increase solids residence time at the same mixed liquor suspended solids concentrations to improve nitrification stability and ammonia treatment".
        - The 11/9/2022 DEP Inspection Report indicates the CEPT project is scheduled for early 2023.
        - There was no engineering assurance of resolution of Ammonia-N issues, only an assumption that the CEPT system might result in benefits in terms of nitrification.
    - **Pre-2021**: See previous Redraft Fact Sheets for discussion of long-term Ammonia-N pattern of noncompliance and assorted City actions to correct the problem.
    - **2021 exceedances:** The 2021 Chapter 94 Annual Report indicated the facility had an "annual average" 16.5 mg/l (Summer) and 17.4 mg/l (Winter), with the monthly average limits exceeded May through December. The Report noted the West Intermediate Clarifier was out-of-service from 7/27 – 12/1/2021, contributing to significant plant operation and nitrification issues during the "rebuild and upgrade" project.
    - **2022 exceedances:** Ammonia-N exceedances from January to August 2023.

Effluent Violations for Outfall 001, from: January 1, 2022 To: August 31, 2023:

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	03/31/22	Avg Mo	32	mg/L	30	mg/L
TSS	03/31/22	Wkly Avg	61	mg/L	45	mg/L
Ammonia	01/31/22	Avg Mo	2892	lbs/day	2502	lbs/day
Ammonia	02/28/22	Avg Mo	3085	lbs/day	2502	lbs/day
Ammonia	03/31/22	Avg Mo	2986	lbs/day	2502	lbs/day
Ammonia	04/30/22	Avg Mo	3082	lbs/day	2502	lbs/day
Ammonia	05/31/22	Avg Mo	2273	lbs/day	834	lbs/day
Ammonia	07/31/22	Avg Mo	1162	lbs/day	834	lbs/day
Ammonia	08/31/22	Avg Mo	1009	lbs/day	834	lbs/day
Ammonia	09/30/22	Avg Mo	906	lbs/day	834	lbs/day
Ammonia	10/31/22	Avg Mo	1280	lbs/day	834	lbs/day
Ammonia	05/31/23	Avg Mo	1083	lbs/day	834	lbs/day
Ammonia	06/30/23	Avg Mo	883	lbs/day	834	lbs/day

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Ammonia	07/31/23	Avg Mo	< 1027	lbs/day	834	lbs/day
Ammonia	01/31/22	Avg Mo	34.4	mg/L	15.0	mg/L
Ammonia	02/28/22	Avg Mo	32.7	mg/L	15.0	mg/L
Ammonia	03/31/22	Avg Mo	33.6	mg/L	15.0	mg/L
Ammonia	04/30/22	Avg Mo	28.1	mg/L	15.0	mg/L
Ammonia	05/31/22	Avg Mo	22.2	mg/L	5.0	mg/L
Ammonia	06/30/22	Avg Mo	9.1	mg/L	5.0	mg/L
Ammonia	07/31/22	Avg Mo	13.9	mg/L	5.0	mg/L
Ammonia	08/31/22	Avg Mo	12.3	mg/L	5.0	mg/L
Ammonia	09/30/22	Avg Mo	10.6	mg/L	5.0	mg/L
Ammonia	10/31/22	Avg Mo	13.8	mg/L	5.0	mg/L
Ammonia	05/31/23	Avg Mo	11.7	mg/L	5.0	mg/L
Ammonia	06/30/23	Avg Mo	10.4	mg/L	5.0	mg/L
Ammonia	07/31/23	Avg Mo	< 11.3	mg/L	5.0	mg/L
Ammonia	08/31/23	Avg Mo	20.1	mg/L	5.0	mg/L

Effluent Violations for Outfall 006 (emergency discharge when river levels prevent pumping to Outfall No. 001), from: January 1, 2022 To: August 31, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Ammonia	01/31/22	Avg Mo	29.2	mg/L	15.0	mg/L

SSO Events:

- History: See previous Redraft NPDES Permit Fact Sheet for history of SSO issues and City corrective actions.
- 2021: Per the 2021 Chapter 94 Report, there were two (2) dry weather SSO events and zero (0) wet weather SSO events in 2021 (blamed on sewer blockages due to debris, grease or rags). This is an improvement compared to previous years (summarized in the previous Redraft NPDES Permit Fact Sheet as up to 6 SSO events per year). Given reduction and identified hydraulic restriction elimination projects, there might no longer be need for an SSO Schedule of Compliance.
- 2022: Per the 2022 Chapter 94 Report:
    - In 2022, the POTW was treating 85 locations with “Quorym ProBac MicroTabs” for grease control, in addition to other sewer maintenance activities (flushings, line excavations, TV inspections, manhole maintenance, etc.).
    - There were seven (7) dry weather SSOs attributed to sewer blockages due to debris, grease, or rags (i.e. none due to hydraulic restrictions).
    - There was one (1) wet weater SSO attributed to a cracked sewer main that overflowed during high flow conditions.

CSO Related: Per 2022 Chapter 94 Report:

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- CSO Discharges: Two (2) discharges from CSO Outfall No. 012. Zero (0) discharge from CSO Outfall No. 003. No discharge from former CSO Outfall No. 004.
- CSO In-Plant Bypasses: Six (6) bypasses due to peak wet weather flows in excess of 20 MGD (diverted around aeration basins/intermediate clarifiers in accordance with LTCP).

Communications Log:
12/16/2022: Redraft NPDES Permit issued (sent by electronic mail).
12/19/2022: Bethlehem (Boscola) E-mail acknowledging receipt of Redraft NPDES Permit.
1/6/2023: EPA (Dana Hales) E-mail asking for copy of the Bethlehem's CSO Long Term Control Plan (LTCP).
1/6/2023: DEP (Bellanca) E-mail regarding placement of Bethlehem LTCP in file share to allow EPA access.
1/6/2023: EPA (Dana Hales) acknowledgment of access to LTCP.
1/12/2023: EPA (Dana Hales) E-mail asking for a discussion regarding several items and possibly other EPA comments: "We have noted your fact sheet interpretation of Chapter 92a.51, in which you believe that compliance schedules can be included in a permit to address issues of non-compliance. EPA does not agree that the above schedules and conditions are consistent with the CWA".

- "The permit still authorizes a compliance schedule to meet existing ammonia-nitrogen WQBELS that are already in effect in the current permit. There are two issues noted here. Part A (pg. 5) of the permit seems to require compliance with the NH3-N WQBELs at permit issuance. Part C of the permit authorizes a 3 year compliance schedule, affording the permittee 3 years to comply with those same WQBELs. Not only does this create conflicting requirements in the permit, but as EPA noted in our 2017 comments, since the WQBELs are already in effect this creates a backsliding issue. Backsliding of any WQBELs needs to be consistent with any of the exceptions in 402(o)(2) or 303(d)(4) of the CWA. No such justification was provided, and the exceptions do not seem to apply".
- "The permit also continues to authorize a compliance schedule to conduct collection system work to eliminate SSOs in the system (due to areas of hydraulic restrictions). SSOs are appropriately noted in Part A of the permit as being prohibited, but the compliance schedule in Part C requires "compliance with effluent limitation (No recurrent SSO discharges) – 36 months after PED". In doing this, the permit affords a 3 year schedule to eliminate SSOs but at the same, prohibits them. This schedule does not seem to be an appropriate permit requirement because it creates conflicting requirements and because the permit should not include a schedule to comply with an unauthorized discharge. This seems appropriately handled in an enforcement action outside of the permit".

1/12/2023: Bethlehem (Jeff Morgan) E-mail Requests for meeting and some permit related documentation:

- Please provide a copy of PADEP's Annual Stormwater Report Template referenced on Page 50 of the permit;
- Please provide a copy of the PADEP's Sludge Estimating Worksheet referenced on Page 20 the Fact Sheet;
- Please provide a copy of the PADEP's Toxics Management Spreadsheet and associated documents referenced on Page 3 of the Fact Sheet;
- The City requests a 15-day extension for the submission of comments. If this request needs to come from Mr. Boscola, please advise as he is copied on this email and directed us to make this request.
- Finally, we are considering requesting a meeting with you and Amy to discuss and clarify some of the permit conditions prior to submitting comments on the permit as we feel it will make this process more efficient. Please advise if having meeting in the next few weeks would be acceptable.

1/12/2023: DEP (Berger) Response E-mail to Bethlehem:

- Department granted the requested 15-day extension to **February 21, 2023**
- The DEP Annual IW Stormwater Report form is available via DEP E-library.
- The PADEP Sludge Estimation Worksheet is available via the DEP Wastewater Operators Resources web-page under the Spreadsheet link.
- The Toxics Management Spreadsheet and other water quality models are available via the DEP Water Quality Models and Tools web-page. Scroll down the Redraft FS Addendum to page 20 for PDF versions of the WQ modeling for the Redraft NPDES Permit.
- 1/12/2023 EPA comments forwarded to City for informational purposes.
- Asked Bethlehem to let DEP know if they have made sufficient progress that Bethlehem believes the EPA-referenced SSO and Ammonia-N schedules of compliance (see original e-mail attachments and Redraft NPDES Permit) are no longer needed in any final NPDES Permit

1/12/2023: Bethlehem (Jeff Morgan) E-mail asking if the attached IW Annual Report and Worksheet were what had been referenced.

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1/13/2023: DEP (Berger) response E-mail indicated they were the referenced documents.
1/13/2023: Bethlehem (Jeff Morgan) E-mail indicated they were unable to open Redraft Fact Sheet water quality modeling PDFs.
1/13/2023: DEP (Berger) E-mail sending new PDF versions of water quality modeling (TMS and WQM Model 7.1) printouts. Also asked Bethlehem to let DEP know if you have made sufficient progress that Bethlehem believe the EPA-referenced SSO and Ammonia-N schedules of compliance (see original e-mail attachments and Redraft NPDES Permit) are no longer needed in any final NPDES Permit.
1/18/2023: Sent conference call dates to EPA for the discussion they requested 1/12/2023.
1/18/2023: EPA (Dana Hales) E-mail indicating DEP's offered dates did not work for EPA. EPA indicated it would sent alternate dates. NOTE: None received as of 1/30/2023.
1/18/2023: EPA (Jennifer Fulton) E-mail with General Objection Letter (Catherine Libertz, Director, Water Division) to Bethlehem Redraft NPDES Permit "allow for the full 90-day review to conduct a more detailed review of the permit to ensure consistency with federal regulations". The extended Public Comment Period date is **March 20, 2023**. Bethlehem was copied on General Objection Letter. Cited Issues:

- **Ammonia-N Schedule of Compliance: Concern about potential inconsistency with antibacksliding prohibition regarding the Ammonia-N limits (CWA Section 402(o) and 303(d)(4)).**
  - No relief from existing Part A limits granted.
  - New daily max limit (set at IMAX limit) in Redraft NPDES Permit is new limit and no relief from IMAX.
  - Do they believe ANY Chapter 92a.51/Part C Schedule of Compliance is a change in permit limits?
  - Are they demanding CO&As be negotiated with everyone for any future Part C schedule of compliance?
  - Are not permit conditions enforceable with no relief from penalties promised?
- **SSO Schedule of Compliance:** Concern of SSO Schedule of Compliance conflicts with prohibition and TBELs/WQBELs **(CWA Section 402(a)(1))**: (1) Except as provided in sections 1328 and 1344 of this title, the Administrator may, after opportunity for public hearing issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 1311(a) of this title, **upon condition that such discharge will meet either (A) all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title, or (B) prior to the taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this chapter**.

1/27/2023: Bethlehem (Jeff Morgan) E-mail containing a request for a meeting/conference call within the public comment period to discuss the following items:

- Compliance schedules for D.O., NH3-N and SSOs
- Potential pending enforcement actions, such as a Consent Order and Agreement
- EPA concerns regarding the Redraft NPDES Permit.

1/30/2023: DEP (Berger) E-mails to Bethlehem with two offered dates for the requested conference call.
1/30/2023: Bethlehem (Jeff Morgan) E-mail acknowledging receipt of offered dates. Bethlehem will let DEP know about the conference call date.
2/7/2023: Conference Call with EPA regarding their General Objections Letter.

- Participants:
  - DEP: Amy Bellanca (Program Chief), Maria Schumack (Central Office), James Berger
  - EPA: Dana Hales and Jessica Martinsen
- General Objection:
  - EPA: EPA does not believe the Part C Ammonia-N and SSO Schedules of Compliance are appropriate due to antibacksliding prohibition and existing Water Quality Standards/narrative TBELs because the schedules can be interpreted as conflicting with the existing NPDES Part A permit limits and existing narrative TBEL prohibition of SSO discharges (i.e. by appearing to authorize such discharges during the schedule of compliance period). EPA believed that the schedules are prohibited by Federal Act sections cited in the General Objection Letter. Schedules of compliance are appropriate for new limits, not to address noncompliance with existing permit limits. EPA believes PA Chapter 92a.51 cannot be interpreted as less stringent than the Federal Act in terms of noncompliance with existing permit limits. EPA noted that it had made a similar objection on another permit, and will let the Department know which one.
  - DEP: DEP indicated it understood the EPA objection and would delete the two schedules of compliance. The intent of the compliance schedules was solely for an enforceable corrective action schedule with specific milestone dates, not any relief from existing permit limits (WQBELs or TBELs).
  - Going Forward:
    - EPA noted that it would need to see a Redraft NPDES Permit prior to March 20, 2023 to avoid having to issue a Specific Objection Letter. DEP noted that a meaningful Redraft NPDES Permit

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would require that EPA share any other public comments it might have on the current Redraft NPDES Permit (in addition to receiving and addressing any Bethlehem Public Comments). A separate meeting with Bethlehem was already scheduled.
    - EPA noted that it would want a follow-up discussion with Central Office about the interpretation of Chapter 92a.51.
- Dissolved Oxygen (DO) Schedule of Compliance:
    - EPA noted this was an acceptable schedule for a new limit, but noted the fact sheet indicated additional information on facility effluent DO effluent might exist. EPA wanted the Fact Sheet to include the data and justify why a schedule of compliance is needed.
    - DEP noted there is no existing NPDES Permit monitoring requirement but the DRBC Docket required DO monitoring (so DO data should now be available). The original DO schedule of compliance had been coordinated with the (now deleted) 3-year Ammonia-N schedule, but that is no longer a consideration. The Department would be evaluating whether a schedule of compliance is needed in the future Redraft.
- LTCP Clarifications: EPA noted it has some other questions from reviewing the Fact Sheet and existing LTCP.
    - Plant Overflows: EPA noted the Fact Sheet discussion of when a plant overflow is CSS-related or not (on a case-by-case basis), but was unclear on the purpose of the language. The Department noted that the language was for clarification for the permittee.
        - Any plant overflow at <20 MGD (plant hydraulic capacity) would not be considered wet weather CSS-related, and not subject to the CSO conditions. Such overflows might result from equipment malfunctions, out-of-service units, etc. subject to normal O&M requirements.
        - Any plant overflow at >20 MGD might trigger coverage by the CSO conditions and potentially need to be addressed in the LTCP. A case-by-case determination would be required for the cause of the overflow.
    - CSOs versus Bypassing:
        - EPA noted that an important difference is whether the overflow is taking place before or after the WWTP headworks. If after the headworks, the overflow would be considered a CSO bypass subject to CSO bypassing language/requirements, not a CSO. EPA was looking over the existing LTCP, but was unsure if CSO Outfalls Nos. 003 & 004 were located before or after the headworks.
        - DEP noted that the two CSOs (Nos. 003 and 012 which replaced 004) were located on the two main trunk sewer lines going to the WWTP, but had to look up where they were in relation to the headworks. Outfall No. 004 was replaced by Outfall No. 012 per the LTCP. The status and future of Outfall No. 003 (in the LTCP) would be determined in the next LTCP Update, since it was in the existing LTCP. Outfall No. 006 is used when river levels do not allow for river discharge via Outfall No. 001, but the effluent is fully treated.
    - 6 CSO Event/Year Presumptive Goal: EPA noted that it understood that the permittee had requested this goal, but that any such goal had to be justified. The DEP agreed, with the facility largely having fewer CSO events/year per Chapter 94 Reporting.
    - LTCP Design Conditions: EPA noted that it was important that the LTCP and NPDES Permit define what are the design flows for the CSO conditions. It should not be upon all wet weather conditions, but tied to design flows.
    - 85% TSS Minimum Monthly Average Reduction: EPA noted the Fact Sheet talked about this requirement (i.e. permittee had asked for relief), but indicated the permittee had not submitted the information needed to justify any relief at this time. EPA noted the Fact Sheet noted additional factors i.e. TSS stream impairment and DRBC requirement as well. EPA thought that the 85% requirement applied until they show that they meet the specified exception (Part A.I Additional Requirements/Chapter 92a.47(g, h)). EPA indicated that any monitoring requirement should reference the Part A Additional Information to clarify that the narrative TBEL was in effect now. EPA noted that West Virginia was requiring wet weather monitoring to gather information, which would be an option.
    - Other Comments: EPA indicated they had some other minor comments, but will talk further with the reviewing engineer to discuss them.

2/7/2023: DEP (Berger) E-mail to DRBC, requesting DRBC Docket monitoring data (DO) for last 2 years, as the DRBC Docket included DO monitoring requirements.
2/7/2023: DRBC E-mail included DRBC monitoring data and indicated their review of the Redraft NPDES Permit was ongoing. **NOTE**: The 2019 and 2021 DRBC Data (monthly average values) were all above the proposed 4.0 mg/l DO Instantaneous Minimum limit. No 2020 data available due to Covid emergency. 2022 data not available at time, but DRBC indicated it would be forwarded when available.

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Month	2019 DRBC Data (mg/l)	2021 DRBC Data (mg/l)
January	9.46	8.80
February	9.67	9.30
March	8.92	8.63
April	8.90	8.06
May	8.30	7.62
June	7.91	6.61
July	6.90	5.76
August	6.46	5.64
September	6.54	5.82
October	6.69	5.72
November	8.61	7.04
December	8.84	7.31

2/10/2023: EPA (Dana Hales) E-mail with additional public comments on the Redraft NPDES Permit.
2/13/2023: DEP (Berger) E-mail forwarding the additional EPA public comments to the City of Bethlehem and its consultants on the original Bethlehem Meeting Scheduling E-mail copy list.
2/15/2023: **Conference Call with City of Bethlehem on Redraft NPDES Permit**: Bethlehem requested this conference call prior to submitting its public comments on the Redraft NPDES Permit.

- Participants:
  - DEP: Amy Bellanca (Program Manager), Patrick Musinski (Monitoring & Compliance), Kelsey Glavich (Monitoring & Compliance), James Berger (Engineer)
  - Bethlehem:
    - Bethlehem: Ed Boscola, Jack Lawrence, Diane Beatty
    - SCS Engineers: Jeff Morgan
    - Kleinfeld Associates: T. Bradley
- Compliance schedule for NH3-N:
  - EPA Objection: EPA has objected to any Part C Schedule of Compliance for any existing limit on the basis that it conflicts with the Federal Clean Water Act and regulations (antibacksliding by authorizing discharges prohibited by Part A), regardless of any Fact Sheet/NPDES Permit condition clarification language.
    - The Department could address Ammonia-N exceedances under a CO&A option for existing limits.
    - The Department could address the new Ammonia-N daily max limit (based on the existing IMAX limit) under a schedule of compliance, and maybe otherwise in permitting, depending on when Bethlehem indicated it would be able to come into compliance.
  - Can Bethlehem meet Ammonia-N Limits including Daily Max/IMAX Limits: Bethlehem believe that it can meet the Ammonia-N limits if the mechanical equipment is all operating. They have a number of site projects that should correct any existing problems by the end of the year.
  - CO&A Options:
    - Pat Musinski had made a previous site visit where the CO&A option was mentioned (to address Ammonia-N exceedances, etc.). Bethlehem had indicated it would talk internally about its options.
    - A signed CO&A would be needed for NPDES Permit issuance due to compliance bar because of current noncompliance (including Ammonia-N exceedance; SSOs). The NPDES Permit would not address noncompliance.
    - The City would be deciding on the scope of all that a CO&A would address. The CO&A would have to address the Ammonia-N exceedances and SSOs, but other items (DO schedule of compliance, etc.) can be added.
    - The City would need to provide a corrective action schedule that everyone could agree to. If such a schedule is submitted, the lawyers can quickly come up with a CO&A in a matter of weeks.
    - If Bethlehem chooses to pursue the CO&A option, it should inform the Department.
      - The Department permitting section would let EPA know, which might allow for extension of public comment period to address the applicable issues.

Internal Review and Recommendations

- If Bethlehem wants a CO&A, they need to work with Pat Musinski (Monitoring & Compliance) to obtain the CO&A.

- Compliance schedule for SSOs caused by hydraulic restrictions:
  - EPA Objection: EPA has objected to any Part C Schedule of Compliance for any existing limit on the basis that it conflicts with the Federal Clean Water Act and regulations (antibacksliding by authorizing discharges prohibited by Part A), regardless of any Fact Sheet/NPDES Permit condition clarification language. (The SSO prohibition is a narrative Technology-Based Effluent Limit.)
    - The SSO Schedule of Compliance is coming out of the NPDES Permit. It is the type of schedule best addressed by a CO&A.
    - See above CO&A discussion.
  - Review SSO vs CSO classification: Bethlehem asked for clarification for why the discussion of the difference between SSOs and CSOs in the prior Fact Sheet Addendum. The previous Fact Sheet was clarifying the different permitting and regulatory requirements that applied to SSOs and CSOs. The next LTCP Update will need to clearly define the CSS areas. The Department files had indicated some overflows might be due to backing up of flows into the separated sewer areas, so that should be addressed clearly in the next LTCP Update. If any SSO/CSO has been misidentified, Bethlehem should inform the Department and we would go on from there.
- DO Schedule of Compliance: The City will evaluate whether it needs a schedule of compliance and provide justification if it chooses to request one. Otherwise, the DO Schedule of Compliance will be deleted.
  - EPA comment: EPA said any DO schedule of compliance needed to be justified (data and analysis). Unless justified, the DO Schedule of compliance should be deleted.
    - The Department agreed that any schedule of compliance needs to be justified.
    - Bethlehem would have to provide data and analysis to justify keeping a DO Schedule of Compliance. The Department noted that the general rule is that if the new limit can be met 90% of the time, then the new limit should become effective immediately. Meeting a 4.0 mg/l DO limit was also not thought to be a major problem for larger Sewage Treatment Plants (aerated tank treatment tanks). The Department noted that available DRBC monitoring information (2 years of monitoring data) appeared to indicate Bethlehem can meet the DO limit upfront.
    - Bethlehem asked about hypothetical situations (not meeting the DO limit ten days of the year, not meeting DO limits 90% of the time, etc.).
      - Exceedances (<4.0 mg/l DO instantaneous minimum) would be considered permit limit violations.
      - Bethlehem has the option of addressing coming into compliance with the CO&A.
  - NPDES Permit 4.0 mg/l Instantaneous Minimum limit (daily grab sampling) versus DRBC Docket requirements monthly average reporting (monthly monitoring): Bethlehem was concerned that the NPDES Permit requirements differed from the most recent DRBC Docket requirement. PA requirements can be more stringent that the DRBC requirements. Any more stringent DRBC requirement must be incorporated into the NPDES permit per regulation (Chapter 92a.12). PA requires daily DO monitoring (grab sampling) with a 4.0 mg/l instantaneous minimum limit for discharges to Warm Water Fisheries (such as the receiving Lehigh River).
- Potential pending enforcement actions, such as a Consent Order and Agreement: Bethlehem has been reporting Ammonia-N and SSOs. See above (including Schedule of Compliance and CO&A discussions).
- Other EPA comment regarding the Redraft NPDES Permit:
  - General Objection: No comment.
  - Part A.I.C 85% Minimum Monthly Average Reduction TSS TBEL: EPA noted the 85% requirement is an existing TBEL (in effect now), until the City shows that relief if possible under the Part A.I Additional Requirements Item 2 options (Chapter 92a.47(g, h) and Federal equivalent regulation).
    - The Department will be cross-referencing the Part A.I monitoring requirement to the Part A.I Additional Requirements Item 2 requirements.
    - The Department went to monitoring to allow Bethlehem to pursue the Chapter 92.47(g, h) options during the LTCP Update, if it so chose. Bethlehem must provide the data and analysis if it chooses to pursue this option.
    - Ongoing Lehigh River TSS impairment must also be addressed in any request, by providing data and analysis showing that the Bethlehem CSO discharges are not contributing to ongoing Lehigh River TSS impairment.

Internal Review and Recommendations

        - The Department noted that Bethlehem could propose conducting Wet and Dry monitoring and reporting to gather data to apply for a Chapter 92a.47(g, h) in the future. Bethlehem
    - Plant Overflow/bypassing (whether CSO bypass or just bypass): FS clarification
    - CSO Outfall No. 003: Bethlehem confirmed that the diversion is prior to WWTP headworks, and that there is no piping connection to the Intermediate Clarifiers (for which LTCP figures could be interpreted as implying). Bethlehem will send in a new schematic clearly showing the CSO is prior to the labeled WWTP Headworks.
    - CSO Outfall Nos. 004 and 012: Bethlehem confirmed that the CSO Outfall No. 012 diversion is prior to WWTP headworks. Bethlehem will send in a new schematic clearly showing the CSO is prior to the labeled WWTP Headworks.
    - Proposed 6 CSO Events/year Presumptive Goal in next LTCP Update: EPA indicated any request for 6 CSO Events/year LTCP Presumptive Goal must be justified.
        - The Department noted this goal is not in the current Redraft NPDES Permit (except as a potential option) and would be chosen in the next LTCP Update and then incorporated into the NPDES Permit. The chosen LTCP Goal is not subject to antibacksliding prohibition, and there is room for negotiation in the future.
        - Bethlehem noted that it had less than 6 CSO events/year in the last 5 years.
        - The Department noted that this 6 CSO Event/year LTCP Presumptive Goal is based on an average year (not wettest year). There is allowance for a year where there are multiple triggering wet weather events, one after the other. The Department noted that some other facilities have chosen to start from scratch to develop a new LTCP as well (with alternate chosen LTCP Goal).
        - Presumptive Goal versus Demonstration Goal: The LTCP Update will have to show Bethlehem CSO discharges are not contributing to the ongoing Lehigh River TSS impairment (caused by CSOs) to qualify for any Presumptive Goal based on stream data. Otherwise, much more monitoring will be required to demonstrate no impact to Lehigh River water quality per the LTCP Demonstration Goal.
    - Design Conditions Language: No comment
    - Planned Changes to Waste Stream language: No comment.
    - IPP EPA E-mail Address: No comment
- Response due date for City (Feb 21) vs EPA (Mar 20):
    - EPA wants Redraft NPDES Permit Documents by March 20 to avoid issuing a specific objection letter
    - End of Bethlehem Public Comment Period: Bethlehem decided it would request an extension to the end of the month (February 28) for submittal of its public comments. This will allow time for the Department to work on a Redraft NPDES Permit prior to the EPA request for Redraft Permit documents by March 20.
- Review other miscellaneous requirements in the draft permit as time allows:
    - Metals Monitoring (monthly Cadmium, Hexavalent Chromium, Copper, Zinc): Bethlehem has additional monitoring data and may request changes.
    - Phenol Monitoring (monthly due to spiking): Bethlehem has additional monitoring data and may request changes.
    - Total PCBs Monitoring (annual due to stream impairment): Bethlehem may have comments.
    - Part C.VIII Solids management Conditions: Bethlehem may have comments.
    - Storm outfall monitoring (pH, TSS, TKN, Total Iron): Bethlehem may have comments.
- Other:
    - Organic Design Capacity Rerating: Bethlehem is pursuing this. They have a consultant working on a draft Act 537 Plan update. It is on their agenda for this year. The Department noted that if done prior to NPDES permit action, it might be dove-tailed into the Final NPDES Permit.
    - Other NPDES Permit Differences From 2022 DRBC Docket Requirements: Bethlehem noted the 2022 DRBC Docket had recently changed DRBC requirements. The Department noted Bethlehem could update the Department via its public comments. Bethlehem indicated it had not appealed the most recent DRBC Docket.
    - Other LTCP Schedule of Compliance Comments:
        - Bethlehem indicated it might request 24 months for “studies”. When asked what studies were being referenced, Bethlehem mentioned the O&M Plan and Stream-related LTCP requirement. The Department noted Bethlehem can make any such request, and the Department will see if it is acceptable, but the LTCP end date (December 31, 2042) will not change. A new LTCP Update will also be required 6 months prior to NPDES Permit expiration date (54 months from PED).

Internal Review and Recommendations
▪ The LTCP Goal compliance deadline is at the end of the LTCP Schedule (December 31, 2042) which is the end-date for compliance per PA agreement with the US EPA. All other facilities are under the same deadline. Bethlehem has to demonstrate progress in the meantime. **2/15/2023**: Bethlehem (Jeff Morgan) E-mail request for extension of public comment period to February 28. **2/15/2023**: DEP (Bellanca) E-mail granting extension for public comment period to February 28. **2/28/2023**: DEP (Berger) E-mail forwarding Bethlehem City's public comments to the US EPA for informational purposes. The City submittal included figures showing CSO Outfalls in relation to the Treatment Plant's headworks. **3/7/2023**: DEP (Berger) E-mail to EPA with revised draft Fact Sheet and draft NPDES Permit for informational purposes. (EPA had requested a Redraft NPDES Permit & Fact Sheet by March 20, 2023 to avoid the necessity of an EPA Specific Objection Letter regarding the Ammonia-N and SSO Schedules of Compliance). The E-mail noted the drafts had not gone through complete internal review at that time.