pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0025224**
Facility Type	**Municipal**	APS ID	**471011**
Major / Minor	**Minor**	Authorization ID	**1320130**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Saint Clair Borough Sewer Authority Schuylkill County**	Facility Name	**St Clair WWTP**
Applicant Address	16 S 3rd Street	Facility Address	625 Street Clair-Port Carbon Highway (SR 1001)
	Saint Clair, PA 17970-1207		St Clair, PA 17970
Applicant Contact	Charles Weber	Facility Contact	Brandon Reed (Plant Manager)
Applicant Phone	(570) 429-1512	Facility Phone	(570) 622-5645
Client ID	44478	Site ID	451582
Ch 94 Load Status	**Hydraulic Overloading in December 2020 – May 2021, projected into future**	Municipality	East Norwegian Township
Connection Status	No Limitations	County	Schuylkill
Date Application Received	July 9, 2020	EPA Waived?	No
Date Application Accepted	December 22, 2020	If No, Reason	CSOs

Purpose of Application: RENEWAL OF EXISTING NPDES PERMIT.

Summary of Review

This is an NPDES Permit Renewal Application for a 0.75 MGD POTW discharging to Mill Creek (CWF; Stream Code# 2353; Impaired) and CSO Outfall No. 002 discharge to UNT to Mill Creek (CWF; Stream Code #2354; Impaired) near confluence with Mill Creek (within 100-year floodplain); with CSO Outfall Nos. 003-006, and 008 discharging to Mill Creek.

Background:

- **Permit Status**:
  - **Existing NPDES Permit**: The existing December 9, 2015 NPDES Permit had been administratively extended. The 2017 Approved LTCP consisted of the 2016 LTCP as approved by condition by the 2/17/2017 DEP LTCP Approval with Conditions Letter (including the 2017 Approved with Conditions CSO Flow Study and In-Stream Water Quality Monitoring Plans) per NPDES Permit Part C.II. See Treatment System section for list of applicable Part II WQM permits.
  - **Potential Rerate Request & Hydraulic Overloading (Chapter 94 21-22)**: The Chapter 94 Reports indicate SCSA is considering a potential rerate to ~1.0 MGD to address existing and projected hydraulic overloading as part of Corrective Action Plan (for both separated sewer system and combined sewer system areas). This proposal is outside the scope of this NPDES Permit Renewal action:
    - No such request has been received as part of the NPDES Permit Renewal Application. Act 537 Planning and DRBC Docket requirements would pertain. Rerating would also trigger consideration of new or more stringent permit limits (including Natural Trout Reproduction non-summer DO limits) due to updated water quality modeling/Reasonable Potential Analysis.
    - See Treatment Plant Section for discussion of reported hydraulic overloading and related concern about apparent potential unauthorized CSO discharges (apparent bypassing).

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	June 17, 2023
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Program Manager	8-16-23

Summary of Review

- **WWTP Effluent Annual Average Daily Flows (AADF):** Please note that this data is potentially suspect due to potential unauthorized usage of CSO Outfall No. 002 as a treatment plant bypass (not meeting NPDES permit requirements for CSO discharges as discussed in this Fact Sheet):
  - **Application Information**: 0.759 MGD (2019) with highest daily flow of 0.976 MGD in May 2019, 0.774 MGD (2018), and 0.569 MGD (2017).
  - **2022 Chapter 94 Report Information**: 0.684 MGD AADF (2020), 0.775 MGD AADF (2021 with December 2022 through May 2021 hydraulic overloading), and 0.598 MGD AADF (2022)
- **Collection System**: Chapter 94 Report described as ~7.8 miles of 8-inch and 3,600 LF of 18-inch CSS lines. Four pump stations with ~1610 LF of 4-inch force main in the St. Clair Industrial Park. ~1060 LF of 4-inch force main in the East Mines (Norwegian Township) area. The 2021 LTCP Update indicated that 53% of the SCSA Service Area consists of separated sewers. CSOs in CSS collection system (see details below).
- **Response to 3/21/2021 Technical Review Letter with LTCP Update:** On-Base Reference Numbers 37617 and 140929. On-Base E-mail received 11/23/2021. Hard copy received 11/29/2021.
- **SCSA Primary Facility Number:** 632275
- **Sludge use and disposal description and location(s)**: 41.9 dry tons disposed at Lycoming County Landfill in 2019. 27 dry tons disposed in 2022 (3 tons/month average) per 2022 Chapter 94 Report.
- **CSO-related Information**: CSO Outfall No. 002 is located directly before the WWTP headworks. CSO Outfalls Nos. 003 – 006 and 008 are located within the St. Clair Borough collection system. CSO-related information is found in the:
  - This Section: See explanation for CSO-related site-specific permit conditions below.
  - Stream Information Section: See receiving stream information for CSO outfall discharges.
  - Treatment Information Section: Includes comments on the 2019 -2022 Chapter 94 Annual Municipal Wasteload Report /Annual CSO Status Reports. See On-Base Nos. 53835 and 100250 for the 2021 and 2022 Reports.
  - Compliance Section: Including CSO-related issues
  - CSO-related Information Section: Additional CSO-related information compilation
  - Communications Log: See log for CSO-related history.
  - 2020 LTCP Update: An update was submitted concurrent with the NPDES Permit Renewal Application. It is approved except as superseded by statutes, regulations, and permit conditions (discussed below).
  - 2021 and 2022 Chapter 94 Annual Municipal Waste Load Reports/Annual CSO Status Reports: See On-Base Nos. 53835 and 100250.
- **DRBC Docket**: The existing 7/28/1971 DRBC Docket D-70-241 CP (0.75 MGD) is outdated due to facility changes since 1970 (including conversion to UV disinfection in 2018).

New and Part C Special Conditions: Changes bolded:

- **Part A.I.C (Outfall No. 001): Special footnotes added:**
  - **"*Unless the Department allows reduction to Part C.I.D requirements in writing**". (This is to address facility claims of TRC source in collection system per inspection reports, resulting in 1/day sampling unless the Department approves otherwise in writing).
  - **"**See Part A.I Additional Requirements Item 2 for the existing narrative Technology-Based Effluent Limit. SCSA may seek relief via LTCP Update addressing Chapter 92a.47(g, h) requirements**". (This allows them to make a technical case that relief from the 85% minimum monthly average reduction is allowable per Chapter 92a.47(g, h). To date, SCSA has not made such a technical case.)
- **Part A.I.D (CSO Outfall No. 002): New monitoring requirements (flow monitoring and sampling).** (Monitoring now required due to installed flow meter and magnitude of CSO discharges (84% of all CSO discharges, >84 million gallons discharge during 2018 CSO Flow Study), failure to provide flow duration/quantity data via CSO Monitoring Report Forms, potential contribution to exceedances of applicable Water Quality Standards, apparent bypass discharges, and lack of submittal of annual in-stream WQ data. The Department is gathering data to determine if CSO Outfall No. 002 permit limits will be required in the future LTCP Updates and NPDES Permitting.)
- **Part A.I.E (Internal Monitor Point/Outfall No. 101): This internal monitor point has been administratively created** (to address the WWTP influent monitoring and reporting under Chapter 94, and CSO-related monitoring requirements (influent flow monitoring)).
- **Part C.I.A, B, C:** Existing Stormwater prohibition; Necessary property rights; Residuals management
- **Part C.I.D: Updated** Chlorine Minimization condition to reflect conversion to UV disinfection (chlorine gas disinfection was allowed for emergency disinfection only). **NOTE**: The Inspection Reports indicated the use of

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chlorine tablets as supplemental disinfection, which has not been proposed or approved. If needed, it would indicate UV disinfection system issues that require corrective action or a WQM permitted upgrade to the disinfection system.

- **Part C.I.E: New Responsible Operator identification requirement to ensure identification of the Responsible Certified Operator in future.** (The responsible operator has Chapter 302 responsibilities).
- **Part C.I.F:** Existing condition regarding changes in effluent or stream conditions
- **Part C.II: 3-year Schedule of Compliance (Ammonia-N) due to new summer WQBELs and uncertainty whether facility can meet the new limits.**
- **Part C.III: Updated CSO Conditions including:**
  - NMC Requirements: **Besides Authority commitments, the following site-specific NMC language has been added.**
    - NMC 1: **LTCP Implementation Plan referenced** (as a complete collection system inspection/investigation is part of the proposed corrective actions to meet CSO requirements.
    - NMC 2: "**Use of the "gate valve located at CSO Outfall No. 002" is not authorized as a method of maximizing storage capacity in the collection/conveyance system unless the Department authorizes it in writing via a Part II Water Quality Management Permit and Approved Long Term Control Plan. See Part A.I.F and Part C.III.A.1 for authorized CSO discharges. See Part A.II and Part B.I.G for bypassing requirements when discharges are discharges noncompliant with Part A.I.F and Part C.III.A.1 requirements".** (To date, SCSA has not submitted a Part II WQM Permit Application to justify usage of a gate valve to throttle peak wet weather influent flows as required by the 2/17/2017 LTCP Approval with Conditions Letter (to show that any such usage complies with applicable statutes, regulations, and permit conditions). SCSA has also failed to address CSO monitoring & reporting requirements set forth in the existing NPDES Permit that might have supported any such request.).
    - NMC 3:
      - **"The (base) Pretreatment Program consists of: No acceptance of any non-sewage waste-stream from any existing customer, with periodic spot checks by the permittee, and compliance with NPDES Permit Part A.III.C.2 (Planned Changes to Waste Stream), A.III.C.3 (Hauled-in Wastewater requirements), B.I.C.4 (Annual Report requirements), and B.I.D (General Pretreatment Requirements) requirements. Any Fats, Oils & Grease (FOG) Program requirements are incorporated by reference as part of the Permittee's Pretreatment Program".** (This defines the existing Pretreatment Program as required by permit condition since permittee thought that they did not have one, which would be a violation of NMC requirements.)
      - **Any acceptance of non-sewage wastewater will require Part A.III.C.2 (Planned Changes in Waste Stream) notification at least ninety (90) days prior to acceptance. The Part A.III.C.2 notification shall identify any CSO Outfall (if any) that might receive industrial wastes/wastewater**. **The Department reserves the right to require an LTCP Update as needed.** (This is an existing 2/17/2017 LTCP Approval with Conditions Letter requirement that clarifies new customer/new waste stream requirements).
      - **The WWTP shall retain records onsite of commercial/industrial indirect dischargers with applicable SIC Code, discharger address and discharger contact information.** (Clarification of minimum onsite record-keeping requirements.)
    - NMC 4: "**Use of the "gate valve located at CSO Outfall No. 002" to throttle influent flows is not authorized unless the Department authorizes it in writing via a Part II Water Quality Management Permit and Approved Long Term Control Plan. See Part A.I.F and Part C.III.A.1 for authorized CSO discharges. See Part A.II and Part B.I.G for bypassing requirements when discharges are discharges noncompliant with Part A.I.F and Part C.III.A.1 CSO discharge requirements"**. (See above. Maintenance bypassing and non-authorized CSO discharges are addressed under the bypassing permit conditions.)
    - NMC 5:
      - **"Any CSO discharges continuing >48 hours after significant precipitation (0.11-inches) has ceased, must be reported as a potential dry weather and/or unauthorized CSO discharge. The permittee shall investigate and report the cause of the discharge to the Department within seven (7) days"**. (See Part A.I.F and Part C.III.A.1 language limiting CSO discharges to during or immediately after precipitation events (including snow melts). SCSA has not shown that assorted reported and unreported CSO discharges are not

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"dry weather CSO discharges" in its CSO Monitoring Reports. The CSO Flow Study Report indicated discharges occurred at 0.11-inches of precipitation.)

- **"Chalking, block testing, bottle-on-a-string or other Department-approved methodology (meeting EPA Technical Guidance requirements) shall be installed at each CSO Diversion Structure/Outfall, that can be checked and reset after each inspection. Resetting the visual aid shall be verified by digital photograph with date stamp retained in the WWTP Records with the CSO Monitoring Report for that calendar month".** (This is an existing 2/17/2017 Approved with Conditions LTCP requirement needed to detect dry weather discharges and wet weather discharges for CSO Outfalls lacking an installed flow meter. Chapter 94 Reports and CSO Monitoring Reports indicate no such visual aid and thus the facility cannot detect dry weather CSO discharges or verify adequacy of its proposed CSO flow estimation method –expected discharges tied to precipitation inches.)

- NMC 6: **"CSO Outfall No. 002 screens and/or other approved controls shall be installed in accordance with the LTCP Implementation Schedule".** (SCSA previously committed to installing a bar screen if solids became an issue. A 2020 site visit noted a build-up of solids triggering this commitment which might require more than a trash rack or bar screen.)
- NMC 7: **The permittee shall record and retain records of any Borough/other party street sweeping or catch basin cleaning within the collection system. The records shall include street sweeping and catch basin cleaning (date, street block, and CSO sewer shed or other). A full-sized drawing shall show the locations of all known catch basins/manholes within the CSO Outfall sewer sheds. If third party cleaning of catch basins is not documented, the permittee shall conduct catch basin inspection and cleaning for that calendar year**. (This is an existing 2/17/2017 Approved with Conditions LTCP requirement.)
- NMC 8: New template language on requirements.
- NMC 9:
  - **Annual Stream monitoring (including E Coli and all known causes of stream impairment) is required.** (SCSA has apparently not conducted the required 4-years of In-Stream WQ Monitoring annual stream sampling to make any case that it is not contributing to stream impairments. Previous sampling did not address the post-LTCP Approval Chapter 93 E Coli Water Quality Standard).
  - **Annual CSO Outfall discharge sampling is required**. (The magnitude and frequency of the CSO discharges require data collection on E Coli, Fecal Coliform, and known causes of stream impairment (pH, Total Aluminum, Total Manganese, Total Iron, and Total Suspended Solids)).
  - The facility is also required to comply with existing standard NPDES monitoring & reporting requirements for CSO discharges as set forth in Part A.I.F and Part C.III.

- **LTCP:**
  - **Part C.III.C.1 (clarified to identify the approved LTCP and to allow for future updating):** The permittee submitted a revised Long Term Control Plan concurrent with the NPDES Permit Renewal**. The permittee shall implement the Approved LTCP (except as superseded by statutes, regulations and/or NPDES/WQM permit conditions).** The 2021 LTCP Update issues are being addressed by the permit condition language and the LTCP Implementation Schedule. To clarify assorted LTCP requirements (in addition to NMC-related information above):
    - **LTCP Section 1.1 (Purpose of Report):** This section indicated the LTCP would be updated by the 2/17/2017 LTCP Approval with Conditions Letter requirements (which incorporated the 2/17/2017 LTCP Approval with Conditions Letters (including the 2/17/2017 CSO Flow Study and 2/17/2017 In-Stream WQ Monitoring Plans by reference). The DEP Letters are directly incorporated by reference by permit condition for clarity. (SCSA appeared to believe the conditions of approval to be "comments" per Section 1.2).
    - **LTCP Section 2.2 (Receiving Stream Quality Characterization) & Appendix K (Stream Water Quality Monitoring Plan and Sample Results) & Appendix L (Post Construction Compliance Monitoring Plan)**: The In-stream WQ monitoring plan's 2019 data was summarized here (upstream sampling point A (upstream of all CSOs) & downstream sampling point B (downstream of all CSOs and Outfall No. 001, but also receiving AMD-impaired UNT flow on the AMD-impaired Mill Creek). However, the monitoring plan

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preceded the Chapter 93 E Coli Water Quality Criteria (i.e. no E Coli data), and the LTCP did not include the required follow-up annual stream monitoring (4 years) results.

- Annual sampling data is still required (4 years-worth) per the approved Monitoring Plan.
- E Coli monitoring (during swimming season) has been added to the required annual monitoring and will be required for the Post-Closure Compliance Monitoring (PCCM) Plan to address the new E Coli Chapter 93 WQS.
- In practical terms, the 2019 results showed an increase in various parameters. However, Mill Creek has not been classified as pathogen-impaired (with 2019 grab sampling results below the Chapter 93 Fecal Coliform WQS, with AMD-impacts expected from the AMD-impaired UNT flow contribution). The UNT's AMD discharges might be masking AMD-impaired groundwater in CSO discharges, so CSO Outfall No. 002 will be sampled for the AMD parameters, pathogens, and additional metal(s) in the new permit term.
- The Department will evaluate the adequacy of the proposed PCCM Plan in the LTCP Implementation Schedule milestones (LTCP Updates and Final PCCM Plan). CSO Outfall No. 002 monitoring and stream sampling will likely be permanent requirements until CSO discharges cease.

- **LTCP Section 4.1 (Conduct Proper Operation & Regular Maintenance Plan)**: The LTCP differed from Annual CSO Status Reports in terms of inspection frequency for CSOs, the plan for a trash rack/bar screen) for CSO Outfall No. 002, etc. The NMC has been clarified regarding inspection schedules unless the Department approves otherwise in writing. The LTCP Implementation Schedule addresses the need for solids & floatable controls for CSO Outfall No. 002. CSO Reporting requirements have been clarified by permit conditions.
- **LTCP Section 4.2 (Maximize Use of Collection System for Storage) & Attachment G (Wet Weather Operating Plan)**: At this time, the NPDES Permit and Approved LTCP does not authorize any usage of the "gate valve located between CSO #002 and the headworks building in accordance with the Wet Weather Operating Plan to allow backup into the collection system". The 2/17/2017 LTCP Approval with Conditions Letter required a Part II WQM permit application to justify the proposed usage of the standard maintenance gate valve for this function. The LTCP Wet Weather Operating Plan indicates the valve would be set at 1.8 MGD for one (1) hour, and then partially closed to allow only 1.0 MGD influent flows during wet weather events. The Gate Valve would be reset to 1.8 MGD after "wet weather event ends" or influent flows drop below 1.0 MGD for 24 hours. The Wet Weather Operating Plan indicates that the 1.8 MGD headworks is followed by several limiting units (12-inch piping between primary clarifier and aeration tanks (1.39 MGD); Aeration Tanks (1.008 MGD Maximum Capacity); and the 10-inch piping between the secondary clarifier and UV System (1.42 MGD)).
  - As there is only 6,200 gallons of identified available pipeline storage capacity per the LTCP, the back-up flow does not appear "stored" but discharged via CSO Outfall No. 002.
  - As noted in the 2/17/2017 DEP LTCP Approval with Conditions Letter, the Department awaits a Part II WQM Permit Application to justify such usage in accordance with all NPDES Permit Conditions (including Part B.I.G bypass conditions if any discharge is not authorized by NPDES Permit Part A.I.F and Part C.III.A.1 language due to identified hydraulic restriction for discharges during or immediately after significant precipitation events). CSO Monitoring & Reporting requirements have been clarified to ensure adequate reporting for all CSO discharges and their causes.
  - The LTCP "Wet Weather Operating Plan" does not self-define what is a "wet weather event" or how it would calculate whether the total influent flow has dropped to 1.0 MGD flow. The ambiguity of the term is confusing. In practical terms:
    - The day after a significant precipitation event (≥0.11-inches of precipitation) ends would be considered the end of a wet weather precipitation event for CSO outfall discharges (unless the LTCP provided technical analysis/justification for other definition). A CSO Wet Weather event, that

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lasted more than 48-hours after precipitation ends, would have to be justified due to Part C.III.A.1 language.
    - A combined CSO Outfall No. 002 and influent flow meter rate of 1.0 MGD discharge would not be an authorized CSO Outfall unless both Part A.I.F & Part C.III.A.1 requirements are met. Part B.I.G bypassing requirements would have to be shown to be met by all other CSO Outfall No. 002 discharges.
- **LTCP Section 4.9 (Monitoring to Effectively Characterize CSO Impacts and Efficacy of CSO Controls)**:
    - The CSO Graphical Model methodology (CSO discharge estimated by precipitation in inches) to estimate CSO discharge events and flows has not been verified to be adequate due to inadequate CSO Monitoring & Reporting (see comments on Annual CSO Status Reports in Treatment Plant Section). This permit includes CSO Outfall No. 002 flow monitoring & reporting, installation of visual aid to detect off-hours or dry weather CSO discharges, and specified all required CSO-related information must be included in all CSO Monitoring Report Forms (monthly and annual). SCSA noted the flow study took place in 2018, a record year of precipitation and believes the model might be conservative (assuming higher groundwater levels led to increased inflow and infiltration (I&I)), but that has not been supported by deficient CSO monitoring & reporting.
        - The Department will re-evaluate its adequacy in the next LTCP Update (when required CSO Monitoring Report information (including use of visual aid) and summarization should be available for direct comparison). Please note that while the LTCP's attached CSO Monitoring Reports (2018-2019) had more data than the more recently submitted CSO Monitoring Reports, they did not include visual aids for detection of off-hour discharges (when SCSA personnel were not present) nor estimated pipe flow depths to correlate to flow rates/quantities per the 1995 empirical correlations (or by other means).
        - The CSO Flow Study report indicated CSO discharges began between 0.11 and 0.18 inches of daily precipitation (page 10).
    - The CSO Continuous Simulation Modeling was used to evaluate data and to help determine collection/conveyance system improvement projects for consideration. Its accuracy is unverified due to lack of adequate calibration, but it will help the permittee to prioritize corrective actions as part of the LTCP Implementation Schedule (incorporating other SCSA commitments). SCSA will be able to comment on the Draft NPDES Permit LTCP Implementation Schedule if it wants to change prioritization of specific CSS areas for investigation and corrective action in accordance with Modeling results.
    - The 85% Capture/Treatment calculations (the permittee shall eliminate or capture for treatment, or storage and subsequent treatment, at least 85% of the system-wide combined sewage volume collected in the combined sewer system during precipitation events under design conditions) were potentially invalid due to failure to separate out any potential Separated Sewer Sheds' I&I contributions (see exact wording of the LTCP Presumptive Goal).
        - The LTCP Implementation Schedule includes the need to evaluate any Separated Sewer Shed's I&I contributions during each phase. Separated sewer sheds I&I issues are outside the scope of the CSO permit conditions (including LTCP Implementation schedule), requiring implementation of Chapter 94 Corrective Action Plans as needed.
        - The Annual CSO Status Reports appear to assume "design conditions" are an assumed average year of precipitation. Please note that design conditions can be proposed in the LTCP Update, but are not necessarily tied to an assumed "average year of precipitation" precipitation amount.
- **Section 10.2 (WWTP Capacity Increase)**: SCSA indicated it might consider potential rerating of the 0.75 MGD WWTP and might consider plant upgrades. The 2022 Chapter 94

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Report/Annual CSO Status report mentioned rerating of the facility (to ~1.0 MGD per Report), but that would require Act 537 Planning, a major NPDES Permit Amendment, and DRBC Docket updating if pursued. The 2022 Chapter 94 Report indicated a December 2021 to May 2022 period of hydraulic overloading that triggers the need for corrective action and would have provided data on existing as-built/as-operated facility unit capacities.

- The need for WWTP hydraulic capacity increase would be determined by whether the facility can comply with all NPDES Permit requirements at the existing 0.75 MGD hydraulic design capacity and under the expected loadings (plus potential for corrective actions in the combined and separated sewer sheds).
- A CSO bypassing option (bypassing secondary aeration to achieve minimum treatment of CSS flows at higher flow rates) was required to be evaluated by the 2/17/2017 DEP LTCP Approval with Conditions letter (incorporated by reference into the NPDES Permit). The Wet Weather Operating Plan also identified several limiting factors that could also be addressed (12-inch piping between primary clarifier and aeration tanks (1.39 MGD); Aeration Tanks (1.008 MGD Maximum Capacity); and the 10-inch piping between the secondary clarifier and UV System (1.42 MGD)) as part of such a project.

- **Section 11 (Implementation Schedule)**: The LTCP schedule is already obsolete as some milestones were due in 2022. Therefore, the LTCP Implementation Schedule has been modified to follow the same sequence but with interim compliance milestone modified (postponed) to some extent.

- **Part C.III.C.2 (LTCP Goal): The 4 CSO Event/Year Goal is being dropped per SCSA request (with the 85% Capture/Treatment Presumptive Goal WQBEL retained).** (The Approved LTCP and NPDES Permit Part C.II.C.5 had included both the 4 CSO Event/Year and 85% Capture/treatment presumption goals per previous SCSA request. SCSA later indicated it misunderstood the LTCP goals to be "either/or" targets, not realizing both are enforceable narrative WQBELs in effect simultaneously per their request).

- **LTCP Schedule for Implementation Milestones:**
  - Annual Chapter 94/Annual CSO Status Report:
    - **The requirements have been clarified to require reporting on the status of the LTCP Implementation Schedule (status, findings, proposed corrective actions) and concurrent Separated Sewer System Corrective Action Plan requirements.** (Due to both CSS and separated sewer system areas potentially contributing to WWTP hydraulic overloading, with separated sewer systems not subject to CSO permit conditions or regulations. Please note that CSO permit conditions/regulations do not pertain to issues in the 53% separated sewer system except as SCSA might make commitments applicable to both.)
    - **"The Annual CSO Status Report Form shall include all required information reported on the form itself".** (Existing summarization requirement for required information that submitted Reports did not meet.)
  - DMR Supplemental Forms (CSO Monitoring Report Forms):
    - **"The CSO Supplemental Forms shall have all required information reported on the form itself"**. (Existing permit requirement that submitted CSO Monitoring Reports have not met. Submittal of a SCSA Form is not acceptable, with the SCSA form also lacking required certification language.).
    - **"The 1995 SCSA Final Plan of Action Appendix C (Inspection Data Tabulation Sheets)-required information shall be reported on the CSO Supplemental Forms"**. (Previous SCSA commitment to share information including height of flow in the CSO Diversion Chamber pipes that were correlated to a flow estimation method in 1995. SCSA indicates its belief that the 1995 correlations are no longer accurate, but has not provided adequate explanation. Regardless, pipe flow depth reporting, etc. is needed to help verify any CSO flow estimation method.)
  - Visual Aid requirement:
    - **"Chalking, block testing, bottle-on-a-string or other Department-approved inspection visual aid (meeting EPA Technical Guidance requirements) shall be installed at each CSO Diversion Structure/Outfall, that can be checked and reset after each inspection.**

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Resetting the visual aid shall be verified by digital photograph with date stamp retained in the WWTP Records with the CSO Monitoring Report for that calendar month". (Existing 2/17/2017 LTCP Update requirement)

- **"Submittal of PA Professional Engineer-signed and sealed engineering report identifying a visual aid, mechanical device or other option (consistent with EPA Technical Guidance) for each CSO Diversion Chamber/Outfall structure able to detect dry or wet CSO discharges".** (To verify adequacy of installed visual aid to detect CSO discharges during wet or dry weather).

- In-Stream WQ Monitoring Requirement: "**Update In-Stream Water Quality Monitoring Plan and Post-Construction Compliance Monitoring (PCCM) Plan to incorporate annual in-stream pH, Total Aluminum, Total Manganese, Total Iron, Fecal Coliform and E Coli monitoring (during May 1 through September 30 time-frame) and Laboratory sampling QA/QC protocols".** (Needed to address Chapter 93 E Coli Water Quality Criteria, sheer magnitude of the CSO Outfall No. 002 discharges (potential impairment and TMDL considerations), and apparent failure to conduct previously required Annual monitoring per 2/17/2017 Approval).
- CSO Outfall No. 002 Solids and Floatable Controls: "**Submittal of a complete and technically adequate Part II Water Quality Management Application for a new CSO Outfall No. 002 Screen or other controls to control solids and floatables".** (Previous SCSA commitment in event of solids/floatable issues at CSO Outfall No. 002 discharge point. 2020 Department site visit noted such build-up. Annual CSO Status Reports indicated plan to install a bar screen (which might not necessarily be adequate to control solids.)
- Separated Sewer System Report: "**Submittal of report identifying separated sewer system areas by name, with identification of each separated sewer system area's municipality, percentage of tributary municipality service area, expected dry/wet weather flows (100 GPCD assumption for dry weather in absence of better data), EDUs, estimated population, flow-receiving CSO Outfall Sewer Sheds, identifying age and type of separated sewer system piping to flag areas likely to have substantial I&I issues, and calculation to determine if the 85% LTCP Presumption Goal was met for 2019 through 2022 (excluding identified separated sewer contributions). A schedule for use of portable flow meter to determine areas of high I&I infiltration shall be included with the report".** (To demonstrate meeting the 85% LTCP Presumption Goal, the impact of separated sewer system I&I flows must be quantified and not used in the 85% Presumption Goal calculation. The facility has purchased a portable flow meter and can therefore spot check separated sewer shed contributions during peak wet weather events.)
- Updated CSO Figures: "**Submittal of updated CSO Outfall figures to show all solids & floatable controls, appurtenances, valving, and visual aid/mechanical device (or flow meter)"**. (Existing Annual CSO Status Report figures show no required visual aid, no CSO Outfall No. 008 bar screen, and no proposed CSO Outfall No. 002 solids & floatables control.)
- High Flow Management Plan: "**Updated Wet Weather Operating Plan AKA High Flow Management Plan (HFMP) addressing all NPDES permit requirements and maximize capture for treatment of peak wet weather flows".** (Facility is in hydraulic overload per 2022 Chapter 94 Report and may not have taken all appropriate actions to meet CSO requirements to maximize flow to the Treatment Plant for minimum treatment. At this time, SCSA has not received permission to throttle peak wet weather influent flows via gate valve, as it has not shown the discharges comply with all permit conditions via a PA Professional Engineer signed and sealed Part II WQM Permit Application).
- Annual CSO Status Report Investigation & Corrective Action Plan: **The Annual CSO Status Report's Corrective Action Plan Phases 1 through 5 milestones have been adopted with some allowance for more time (if needed).** (The SCSA schedule for implementation has apparently not been implemented to date, pushing back assorted target dates for compliance milestones. Completion of Phase construction is required within one (1) year of beginning construction because the SCSA milestones did not indicate more than one year would be necessary).
- LTCP Update (24 months of PED): "**LTCP Update submittal that addresses any requirements to upgrade the facility due to hydraulic overloading or other permit conditions; addresses any inability to meet the 85% LTCP Goal; includes Separated Sewer System Area flow data to quantify each Separate Sewer System Area I&I contributions to the CSO Outfall sewer sheds (including table of pump station pump sizing and flows); an updated Sewer Shed Map**

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identifying any Separated Sewer System Area discharging into the Collection System plus municipality boundaries; Catch basin/inlet mapping; previous LTCP Implementation Schedule documents; incorporates any applicable NPDES and WQM permit condition requirement; and as otherwise needed. The LTCP Update shall address plant upgrade options including internal WWTP bypassing and any other WWTP Hydraulic Capacity upgrading/rerating options, Minimum treatment of CSO Outfall No. 002 discharges, and Million Gallon Influent WWTP Equalization Tank (with cost analysis including in the Selected Collection System Improvements and Affordability Analysis sections)". (The inadequate CSO Monitoring Report forms and 2020 LTCP Update lacked too much information, analyses, and technical justification to verify compliance with permit conditions. This milestone, plus clarified monitoring & reporting requirements, will allow updating of the Approved LTCP as needed).

- LTCP Update for NPDES Permit Renewal Application (54 months of PED): "**Submit LTCP Update with Post-Construction Compliance Monitoring (PCCM) Plan.** (Required with NPDES Permit Renewal Application).
- LTCP Final Compliance Date: **December 31, 2042** (EPA-approved Target date for final compliance with LTCP Goals and all other CSO requirements.)

- **Additional CSO-related requirements (Part C.III.G): .**
  - Classification as a "Focused Small System LTCP"**: Requirements stated to clarify minimum requirements that must be met.** (If not met, additional requirements would pertain per DEP/EPA CSO Policies).
  - **For Compliance purposes:**
    - **"If the CSO Graphical Model Method is used to determine CSO flows and/or CSO flow duration for self-reporting in the DEP Forms (in addition to required NMC/LTCP inspections and/or CSO flow metering), then self-reporting will include all sets of data. The facility will be subject to compliance action if any set of data indicate noncompliance unless a Department-approved visual aid or mechanical device or flow meter demonstrates that no discharge took place".** (SCSA has been inconsistent on how it is reporting CSO discharges and has not adequately shown either its inspections and/or CSO graphical estimation method are adequate.)
    - **"The facility shall continue its daily CSO inspection frequency unless the Department approves an alternate schedule in writing".** (SCSA has committed to daily inspections in Annual CSO Status Reports. If it installs and uses an acceptable visual aid or calibrated flow meter, the Department might allow relaxation of the inspection requirements. Weekend inspections will be required in the interim.)
    - **"If a CSO Outfall continues to discharge more than 48 hours after significant precipitation has ceased, the permittee shall report the event as a potential dry weather and/or unauthorized CSO discharge. For purposes of this condition, "significant precipitation" shall be ≥0.11-inches rainfall daily unless the Department approves an alternate standard in writing".** (See below:
      - Part C.I.F states: "The outfalls identified below serve as combined sewer overflows necessitated by storm water entering the sewer system and exceeding the hydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for this reason".
      - Part C.III.A.1 states: "The permittee is authorized to discharge from the combined sewer overflow (CSO) outfalls identified in Part A of this permit when flows in combined sewer systems (CSSs) exceed the design capacity of the conveyance or treatment facilities of the system during or immediately after wet weather periods".
      - Continued discharges more than 48-hours after the last significant precipitation event might indicate prohibited "dry weather CSOs" and/or otherwise not be covered by the CSO permit language. In practical terms:
        - The Application indicated CSO discharges started at 0.11-inches rainfall, which is used as an interim "significant precipitation" value for CSO reporting purposes.
        - The CSO daily inspection frequency means that the significant precipitation date is excluded from the 48-hour time-frame for compliance monitoring purposes.

Summary of Review

- Continued discharges might alternatively indicate the need to take corrective action to stop groundwater infiltration or creek overflows into specific portions of the combined or separated sewer sheds.
- The Department views non-consecutive CSO discharge days as discrete CSO Events (with multiple CSOs discharging during the same CSO event).

- **"In-stream water quality monitoring data shall be reported via DMR Supplemental Report "Surface Water Data Monitoring Report" via eDMR in addition to the CSO Annual Status Report".** (This is to clarify existing Approved LTCP reporting requirements.)

- **Part C.IV:** Existing Solids management conditions (including existing Sewage Sludge Management Inventory reporting requirements)
- **Part C.V**: **New standard WQBELs for Toxic Pollutants (Copper, Lead, and Zinc) conditions.** (Due to Reasonable Potential Analysis. The Chapter 94 Reports indicate SCSA might have additional sampling data to submit, but nothing has been received for updating the Reasonable Potential Analysis).

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001 CSO Outfalls Nos. 003-006, 008	Design Flow (MGD)	0.75 CSOs: see NMCs and LTCP Goals
Latitude	40º 42' 26.00" (001) 40º 42' 49.00" (003) 40º 42' 49.21" (004) 40º 42' 49.88" (005) 40º 43' 5.02" (006) 40º 43' 15.00" (008)	Longitude	-76º 10' 36.00" (001) -76º 11' 6.00" (003) -76º 11' 6.46" (004) -76º 11' 6.72" (005) -76º 11' 16.07" (006) -76º 11' 21.00" (008)
Quad Name	Pottsville	Quad Code	1336 (6-19.4)
Wastewater Description:	001: Sewage Effluent 003 – 006, 008: Combined Sewer Overflows		

Receiving Waters	Mill Creek	Stream Code	2353
NHD Com ID	133228606	RMI	-
Drainage Area	24.2 square miles	Yield (cfs/mi^2)	0.2206
Q_{7-10} Flow (cfs)	5.34	Q_{7-10} Basis	USGS PA Streamstats
Elevation (ft)	665 Feet	Slope (ft/ft)	-
Watershed No.	3-A	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	FLOW REGIME MODIFICATION, HABITAT ALTERATIONS, METALS, SILTATION		
Source(s) of Impairment	ACID MINE DRAINAGE (AMD), CHANNELIZATION, HIGHWAY/ROAD/BRIDGE RUNOFF (NON-CONSTRUCTION RELATED), STREAMBANK MODIFICATIONS/DESTABILIZATION, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final, Final	Name	Mill Creek Watershed (Schuylkill) AMD Upper Schuylkill River AMD

Background/Ambient Data		Data Source
pH (SU)	**5.33**	2/25/2019 Sample ID: 2280272; Sequence Number: 405; Monitoring Point ID: 0; Station ID: 20190225-1405-tdaley; located ~1.5 miles upstream of Outfall No. 001 (and upstream of CSOs). Appears to be located at intersection of Front Street and 2nd Street.
Temperature (°C)	5.6	See above
Hardness (mg/L)	127	Application information. 51 mg/l when DEP Sampled in 3/2019. Applicant
TSS (mg/l)	<5	See above
TDS (mg/l)	198	See above
Total Aluminum (ug/l)	**885**	See above. **No assimilative capacity**
Total Iron (ug/l)	**1690**	See above. **No assimilative capacity**.
Total Manganese (ug/l)	**613**	See above. **Limited assimilative capacity**.
Total Copper (ug/l)	<4.00	See above
Total Lead (ug/l)	<1.00	See above
Total Zinc (ug/l)	54.4	See above
Total Nickel (ug/l)	19.9	See above

Nearest Downstream Public Water Supply Intake		PAW Glen Alsace Exeter Water System (ID# 101174-077)	
PWS Waters	Schuylkill River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~58 miles

Changes Since Last Permit Issuance: **Mill Creek is now classified a Natural Trout Reproduction stream.**

Other Comments:

- Upstream/Downstream: Outfall No. 001 is located on Mill Creek ~0.01 miles from confluence with UNT No. 2354 (which receives CSO Outfall No. 002 discharges about 0.04 miles upstream on UNT plus upstream AMD discharges) which flows to Schuylkill River (about 1.27 miles downstream).
- CSOs: CSO Outfall No. 002 discharges to UNT No. 2354 (just above Mill Creek confluence) and five (5) active CSOs that discharge to Mill Creek. See LTCP Information Section for details.
- Mill Creek watershed TMDL (AMD) and Upper Schuylkill River Watershed (AMD) plus Impairments:
    - The TMDLs did not set forth any Waste Load Allocations for this WWTP.
    - There are potential WWTP contributions due to AMD-impaired groundwater entering the collection/conveyance system (pH, TSS, Total Aluminum, Total Iron, and Total Manganese).
        - There AMD discharges upstream and downstream on Mill Creek. There are also additional AMD discharges upstream on the UNT. Therefore, the LTCP stream monitoring data (elevated AMD parameters of interest) cannot be tied to the WWTP at present.
        - CSO discharge sampling will be required in this permit term to allow ballparking of WWTP contributions, with the CSO Long Term Control Plan/Nine Minimum Controls reducing any existing impacts.
    - The WWTP is not expected to be a significant source/cause of siltation (other than potential CSS solids), urban/road runoff or earth disturbance/habitat alterations impairments.
- SCSA-provided Mill Creek data (on the basis of 500 feet of data), near Outfall No. 001:
    - Mill Creek Stream Width: 19.54 Feet
    - Mill Creek Depth: 4 feet (unclear if max or average, so not used in Water Quality modeling, allowing TMS to calculate based upon other inputted data)
    - Mill Creek Slope (over 100 LF): -0.009 feet/feet.
- SCSA-provided Stream Total Hardness Data: In practical terms, the toxicity of assorted metals varies with Total Hardness (increased toxicity at lower Total Hardness), so the Reasonable Potential Analysis assumed the low end of the range to ensure compliance with the Water Quality Criteria (53 mg/l Total Hardness in the stream; see DEP sampling result) for conservatism. SCSA assumed an average 127 mg/l Total Hardness (CaCO3) based on 17 samples with data ranging from 54.6 mg/l to 189 mg/l Total Hardness as CaCO3 (calculated) based upon 2005 - 2010 USGS Gage No. 01467492 Mill Creek at Schuylkill River sampling point data. Downstream Orphan AMD (between SCSA and Schuylkill river) might render the Gage Location unrepresentative of the Outfall 002.
- SCSA Sampling Points for LTCP In-Stream Monitoring and TMDL sampling points:
    - Sampling Point A (Upstream): 40°, 43', 40" N; -76°, 11', 37" W
    - Sampling Point B (Downstream): 40°, 42', 21" N; -76°, 10', 36" W
    - TMDL Sampling Points:
        - M4 (Upstream of Sampling Point A): 40°, 44', 35" N; -76°, 12', 09" W
        - M6 (Mouth of Mill Creek Creek on Schuylkill): 40°, 41', 38" N; -76°, 09', 52" W

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0 (see NMCs and LTCP Goals)
Latitude	40º 42' 26.00"	Longitude	-76º 10' 35.00"
Quad Name	Pottsville	Quad Code	1336 (6-19.4)
Wastewater Description:	Combined Sewer Overflow		
Receiving Waters	Unnamed Tributary to Mill Creek	Stream Code	2354
NHD Com ID	133228610	RMI	~0.03 miles from confluence by measurement
Drainage Area	1.9 square miles	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.19	Q_{7-10} Basis	Statewide default
Elevation (ft)		Slope (ft/ft)	-
Watershed No.	3-A	Chapter 93 Class.	CWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	SILTATION		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final, Final	Name	Mill Creek Watershed (Schuylkill), Upper Schuylkill River Watershed

Background/Ambient Data		Data Source
pH (SU)	6.79	2/21/2019 Sample ID: 2279486; Sequence Number: 397; Monitoring Point ID: 0; Station ID: 20190221-1010-tdaley; located about 0.33 miles upstream of Outfall No. 001 & 002 (CSO at confluence with Mill Creek)
Temperature (°C)	10.2	See above
Hardness (mg/L)	276	See above
TSS (mg/l)	6	See above
TDS (mg/l)	434	See above
Total Aluminum (ug/l)	**399**	See above. **Limited assimilative capacity.**
Total Iron (ug/l)	**5790**	See above. **No assimilative capacity.**
Total Manganese (ug/l)	**3880**	See above. **No assimilative capacity**.
Total Copper (ug/l)	<4.00	See above
Total Lead (ug/l)	<1.00	See above
Total Zinc (ug/l)	65.5	See above
Total Nickel (ug/l)	49.8	See above

Nearest Downstream Public Water Supply Intake		PAW Glen Alsace Exeter Water System (ID# 101174-077)	
PWS Waters	Schuylkill River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~58

Changes Since Last Permit Issuance: None known.

Other Comments:

- Upstream AMD discharges in UNT (including Pine Forest Mine “Pump in borehole intermittent”; Eagle Hill Mine Diamond water level drift). There is little to no assimilative capacity for AMD metals.
- CSO Outfall No. 002 is located very near confluence with Mill Creek, within the 100-year Mill Creek floodplain. SCSA believed the Outfall location to be part of Mill Creek as Mill Creek inundates the area during high flow conditions. However, E-maps indicated the UNT flows there at low flow conditions, with maintenance of water quality criteria at low flow conditions (Q7-10) being the regulatory requirement for NPDES discharges. SCSA is free to further investigate and to transmit its findings to the Department as part of the next LTCP Update.
    - CSO Outfall No. 002 receives the majority of the SCSA CSS discharges per 2018 CSO Flow Study and (substantially incomplete) CSO Monitoring Report forms. More than 84 million gallons of CSS discharges in 2018 (during flow study). See Treatment Plant Section and CSO Information Section for more recent CSO Outfall No. 002 discharges.
    - There had been a build-up of solids at the CSO Outfall No. 002 discharge per 2020 DEP Site Visit. The Chapter 94 Reports indicate SCSA is considering installation of a bar screen.
    - The Department did not include the UNT in the In-stream WQ Monitoring Plan due to proximity to Mill Creek (since any discharge is expected to immediately flow into the monitored Mill Creek (with Mill Creek sampling points upstream of CSOs and downstream of CSO Outfall No. 001).
- Low Flow: Due to mine disturbance, AMD discharges, and too small drainage area for PA Streamstats regression equations, the low flow LFY is assumed to be 0.1 CFS/square mile default, as Mill Creek LFY (at confluence) might not be representative of low flow conditions in the disturbed UNT.

Treatment Facility Summary

Treatment Facility Name: St Clair WWTP

Issuance Date	WQM Permit	Scope
10/11/2016	5416401	CSO Outfall No. 008 bar screen
7/14/2016	5406402-A2	WWTP Upgrade changes including: UV disinfection System (two 1.9 MGD units), New 2.0 MGD Screen; Influent Flow Meter tied to SCADA System, conversion of two anaerobic digesters to aerobic digesters, magnesium hydroxide (pH Adjustment), changes to sludge management facilities, replacement of some equipment, etc. Removal of stormwater pipe directing stormwater flow to CSO Outfall No. 002 was also required. Chlorine gas disinfection can be used for emergency disinfection. Additional Sewage Sludge Management Inventory requirements and CAP requirement if facility cannot handle loadings.
6/27/2006	5406402	Improvements to include replacement of existing comminutor with automated bar screen, replacement of existing grit system, replacement of three raw sewage pumps, installation of flow mixing box prior to aeration tank, conversion of anaerobic digester tanks to aerated sludge holding tanks, replacement of centrifuge with rotary press, and installation of sludge dryer.
8/5/1971	5470407	Upgrade to primary treatment to secondary treatment via installation of grit chamber, comminutor, duplicate settling tanks, aeration tanks, duplicate final settling tanks, and sludge holding tank at 0.75 MGD.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Aeration Tanks	UV disinfection (with emergency chlorine gas disinfection option)	0.75

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.75	1275	**Hydraulically overloaded***	Aerobic digestion	Disposal

*Hydraulic Overloading documented for December 2020 to May 2021 (projected to continue), with potential additional hydraulic overloading masked by potential unauthorized CSO Outfall No. 002 discharge (for bypassing WWTP). See discussion below.

Changes Since Last Permit Issuance:

- Permit No. 5406402-A2 WWTP upgrades completed (unauthorized CSO Control device/influent gate valve in usage).
- 10/11/2016 WQM Permit No. 5416401 (offsite CSO Outfall No. 008 bar screen) installed.

Other Comments:

- **Sludge Disposal**: 49.91 tons disposed per application at Lycoming County Landfill per application. 27 dry tons disposed in 2022 (3 tons/month average) per 2022 Chapter 94 Report.
- **Wastewater Treatment Chemical**: 50 lb/day Soda Ash used for pH adjustment

- **No WWTP Upgrades Planned**: CSO Projects include CSO Outfall No. 002 bar screen (no WQM permit application received per date) mentioned in Chapter 94 Reports (see below).
- **<85% Minimum Monthly Average Reduction Request**: They have requested for relief from the existing 85% minimum monthly average reduction (concentration basis) requirements (NPDES Permit Part A.I Additional Requirements Item 2 & Chapter 92a.47(g, h)), which was not previously requested or granted. The variable influent/effluent concentrations (due to CSS and any I&I from separated sewers) means potential for not meeting the existing 85% concentration reduction. The 2021 LTCP Update lacked required technical justification for granting relief. **The NPDES Permit language will allow for them to pursue relief in a new LTCP Update. If they do not make an adequate technical case, the existing NPDES Permit Part A.I Additional Requirements Item 2 narrative 85% monthly average minimum reduction Technology-Based Effluent Limits will remain in effect.**
    - **BOD5**:
        - Influent Data: Average 85 mg/l BOD5 concentration (40 mg/l – 180 mg/l range, 28 samples) and 478 lb BOD5/day mass load, indicating CSS flows are diluting influent flow to the WWTP. An 85% reduction of the average concentration would be a 12.75 mg/l BOD5 effluent on average (6 mg/l – 27 mg/l range).
        - Effluent Data: Average 2.64 mg/l CBOD5 (2 mg/l – 23 mg/l range). Using the 1.2 CBOD5/1 BOD5 effluent correlation used in the absence of other data, this equates to an average 3.168 mg/l BOD5 average effluent (2.4 – 27.6 mg/l BOD5 range).
    - **TSS**:
        - Influent Data: They received an average of 80 mg/l TSS (16 mg/l – 170 mg/l range, 28 samples) and 462 lbs/day TSS average mass loading. An 85% reduction of the average 80 mg/l concentration would be a 12 mg/l TSS effluent (2.4 mg/ - 25.5 mg/l range).
        - Effluent Data: Average 3.13 mg/l TSS (1.0 – 17.0 mg/l range, 118 samples).
- **WWTP Peak Influent Flows Experienced**: As identified by revised NPDES Permit Application in accordance with Part II WQM Permit No. 5406402-A2 Special Condition D.3 requirements:
    - WWTP Flow with CSO Valve being used:
        - Peak Instantaneous: 2.09 MGD
        - Peak Hourly: 1.80 MGD
        - Max Daily flow: 1.57 MGD
    - WWTP Flow without Valve:
        - Peak Instantaneous: 8.59 MGD
        - Peak Hourly: 6.61 MGD
        - Max Daily flow: 5.15 MGD
- **Existing WWTP Hydraulic Restrictions per Application**: LTCP Attachment 8 is the Hydraulic Profile with Maximum Flow Rates drawing. They did not record WWTP Influent flow data during 2018 CSO Flow metering study (blamed on SCADA issues). Influent Flow monitoring & reporting will be required in this permit term.
    - **Identified WWTP Hydraulic Restrictions**:
        - Offsite CSO Weirs:
            - They say the (offsite) CSO Nos. 003 – 006, 008 weirs cannot allow for more flow to WWTP without causing backflows into customers based on what the Authority said.
            - The 2022 Annual CSO Status Report indicated: The maximum capacity of the interceptor is regulated by several sections of pipe located along Mill Creek south of the Borough. These pipe sections are 18-inch diameter at 0.20% slope and have a maximum capacity of 3.04 MGD.
        - WWTP Headworks: They say the WWTP Headworks can receive 1.8 MGD flow for 1.0 hours then throttling back to 1.0 MGD (for 1.0 MGD daily flow) due Aeration tank limitations. The influent screen is sized for 1.8 MGD.
            - SCSA says the Headworks will start to flood if flows above approximately 2.088 MGD are allowed for extended periods due to the raw wet well backing up. A flow rate of an additional 0.1 MGD above 2.088 MGD max pumping rate would cause the headworks to start to back up in 50 minutes.
            - They say Flows beyond 1.8 MGD peak hour will first cause the line between the primary clarifier and aeration tank to back up and overflow the walls of the primary clarifiers. Increasing that line size would cause the aeration tank and secondary clarifiers to be undersized and cause washouts of solids. Also various other lines would need to be replaced (referencing the hydraulic profile. **NOTE**: See NPDES Permit Part A.II (bypass

and "severe property damage" definitions and Part B.I.G (Bypass) requirements. Flooding and back-ups are not "severe property damage" by themselves.

- Raw Sewage Pumps (Wet Well and Operations Building prior to primary clarifiers) are rated for: ~2.0 MGD
- 12-inch piping between Primary Clarifier and Aeration Tanks: 1.39 MGD
- Aeration Tanks: 1.08 MGD Max to meet PADEP Minimum Detention Time. **NOTE**: They declined to pursue any CSO bypass (secondary treatment) during the most-recent WWTP upgrade project or in the NPDES Renewal Application/LTCP.
- Secondary Clarifiers: 1.13 MGD Max Monthly
- 10-inch piping between Secondary Clarifiers and UV System: 1.42 MGD
- Attachment 12 (Wet Weather Operating Plan): No apparent plan to lower operating levels in clarifiers or aeration tanks prior to expected wet weather events to maximize treatment of peak wet weather flows.

- **WWTP Peak Flow with CSO Valve being used**:
  - Peak Instantaneous: 2.09 MGD
  - Peak Hourly: 1.80 MGD
  - Max Daily flow: 1.57 MGD
- **WWTP Peak Flow without Valve being used**:
  - Peak Instantaneous: 8.59 MGD
  - Peak Hourly: 6.61 MGD
  - Max Daily flow: 5.15 MGD

- **2022 Chapter 94 Report (On-Base No. 100250) Information**: 2021 Chapter 94 Report (On-Base No. 53835) was also looked at for comparison purposes.
  - **Chapter 94 Form: General Information Section**: Brandon Reed is the current Plant Manager.
  - **Chapter 94 Form Items 1, 2, 3, and 9 (Hydraulic and Organic Overloading) and Attachment G (CAP)**:
    - **Hydraulic Overloading (0.75 MGD Design Capacity)**:
      - **December 2020 through May 2021 (0.762 – 0.95 MGD monthly average flows). Projected overloading over the next five (5) years per Chapter 94 Spreadsheet.**
      - Given the Chapter 94 Report Table precipitation figures and CSO Report data showing the 2021 rainfall was 40.47 inches (below the calculated average rainfall for the last 10 years of 53.23-inches (46.45-inches excluding 2018 data) and the 2022 48.20-inches of precipitation), there is no rationale for why 2022 hydraulic overloading did not occur, except because of unapproved bypassing at the headworks (via unapproved use of slide-gate or valve to redirect influent flow to CSO Outfall No. 002). See 2022 Chapter 94 Report/Annual CSO Status Report-related comments below for details.
    - **Organic Overloading (1,275 lb BOD5/day Design Capacity): April 2021 (1,489 lb BOD5/day).** The annual average was 687 lb BOD5/day. Pattern shows organic loading nearly doubling in certain months. This might indicate either intermittent industrial discharges or sampling issues. However, SCSA has not provided any technical evaluation to support its claim of sampling anomaly. Outliers cannot be ignored in the absence of technical rationale. **NOTE**: The Draft NPDES Permit includes 24-hour composite sampling to eliminate potential biasing.
    - **Corrective Action Plan (Hydraulic Overload)**: **"In lieu of preparing a Corrective Action Plan (CAP), the Authority has begun to prepare a Water Quality Management (WQM) Permit Part II application to hydraulically rerate the WWTP for 1.00 MGD**. The WQM permit application will be submitted to PA DEP for review in the upcoming months. A hydraulic profile of the SCSA WWTP illustrating maximum hydraulic capacities for each treatment component is included in Attachment G". (bolding added)
      - The same language was in the 2021 Chapter 94 Report. No submittal received as of May 9, 2023. See 2019 Chapter 94 Report comments (below) for a previous overloading event and previous CAP proposal.
      - Rerating to 1.0 MGD would require Act 537 Planning and would trigger Major NPDES Permit Amendment Application requirements, Major Sewage POTW requirements, and DRBC Docket updating requirements even if allowed by the Department to solely address wet weather hydraulic loadings.

- The organic loading value measured in April 2021 was significantly higher than historical values at the WWTP and is considered to be a sampling anomaly by SCSA**. Outliers cannot be dismissed without technical justification. Illicit dumping can cause spiking. If there is a sampling problem, then SCSA needs to find it and correct it to prevent recurrence(s).**
- The LTCP Update has proposed a multi-year plan to inspect and map the collection system (53% separated), but the collection system evaluation would apply to the separated sewer watersheds. They could use the portable flow meter to determine if there are any substantial separated sewer shed I&I contributions to the peak wet weather flows upfront.
- The Department previously directed SCSA's attention to the internal CSO secondary treatment bypassing option (requiring NPDES permit condition, LTCP updating, and WQM permitted construction) on various occasions (and required cost estimation in the LTCP Update that was not addressed as required by the 2/17/2017 LTCP Approval-with-Conditions Letter Item 10.d).

- **2/17/2017 DEP CSO Long Term Control Plan Approval-with-Conditions Letter (incorporated by reference as part of the Approved LTCP into the existing NPDES Permit):** To clarify some applicable requirements in terms of flow estimations and therefore potential peak wet weather flows requiring treatment at the Treatment Plant:
  - Letter Item 2 (LTCP Corrective Action Plan): This item required a corrective action plan in event the facility was not meeting its LTCP Goals (4 CSO Events/year; 85% capture/treatment). The facility has not been meeting the 4 CSO Event/year goal and has not shown that it is properly calculating percentage capture/treatment (due to undefined I&I contribution from 53% separated sewer system I&I issues).
    - The CAP requirement applies to the 4 CSO Events/year LTCP Presumptive until that Presumptive Goal is removed by Final NPDES Permit action.
    - At this time, the 85% Goal has not clearly been met for reasons discussed below.
  - Letter Item 5 (Unauthorized CSO Outfall No. 002 discharges): Item 5 explicitly did not approve any use of an influent slide-gate or throttling valve for limiting peak wet weather flows into the Treatment Plant. The Item noted a Part II WQM Permit Application would be required to demonstrate that any such proposed usage is consistent with LTCP requirements (including NMCs), with Item 7.b.i addressing the relationship of any such permit to the NMCs in event of WQM permitting. No such WQM Permit Application has been received to date. See available information on CSO Outfall No. 002 discharges below.
  - Letter Item 7.d (Visual Aid for Detecting CSO discharges): No visual aid appears in usage per Chapter 94/Annual CSO Status Report reporting and/or CSO Monitoring Reports and/or DEP Inspection comments). Item 7.d (NMC Visual Inspection with Inspection Aid Requirements) stated:
    - "Chalking, block testing, bottle-on-a-string or other Department-approved methodology (that can be checked and reset after each inspection) is required for each CSO Diversion Structure/Outfall. (EPA NMC Guidance Section 6.1.1 and 10.2)".
    - "Visual inspections (without resettable visual aids) alone are not authorized except to verify an ongoing CSO outfall discharge by the physical presence of an observer during a CSO discharge, after which CSO Outfall must be cleaned and the visual aid reset".
    - "Resetting of inspection aid will be verified by digital photograph (cell phone or other) with date stamp retained in the WWTP records".
    - "The Visual Inspection Aid method must be used regardless of separate flow metering of CSO Outfalls".
    - "The Department reserves the right to require the use of permanent installed flow meter at each CSO diversion/outfall structure for CSO flow monitoring in event that dry weather discharges are detected and/or if CSO Inspections do not detect discharges during unattended hours".
    - Existing NPDES Permit Parts A.I.B, Part C.II.A.1, and Part C.II.D requirements were cross-referenced.
  - Letter Item 9.d.i (CSO Estimation Method): This item explicitly stated the Department had not approved any hydraulic modeling-based "CSO outfall discharge/precipitation/WWTP influent flow monitoring methodology" at that time. In practical terms, the Department did not approve the use

of the CSO/precipitation estimation method that SCSA is using to calculate compliance with the 85% LTCP Goal.

- SCSA's failure to provide CSO Outfall No. 002 measured flow data, implement the required visual aid usage to detect CSO discharges, and other CSO Monitoring Report issues do not support such a proposed usage of its proposed methodology.
- In practical terms, the Chapter 94 Spreadsheet tables (monthly flows and precipitation), discussed below, indicate that <85% of peak wet weather influent flows are being treated (due to 2021 hydraulic overloading when precipitation was less than prior during the same calendar months in other years). Aside from unauthorized CSO Outfall No. 002 discharges, there is no other known potential cause for the discrepancies.

2022 Chapter 94 Spreadsheet Flows (Existing and Projected Hydraulic Overloading >0.75 MGD): Hydraulic Overloading is also projected for the next five (5) years. Please note the 2018-2019 figures were adjusted by SCSA, but originally reported hydraulic overloading per the 2019 Chapter 94 Report (discussed below) during very wet weather year conditions (as discussed below).

Month	2018	2019	2020	2021	2022
January	0.605	0.743	0.63	0.95	0.592
February	0.784	0.716	0.708	0.929	0.722
March	0.695	0.697	0.673	0.92	0.726
April	0.739	0.758	0.803	0.893	0.798
May	0.779	0.804	0.717	0.762	0.601
June	0.597	0.687	0.709	0.665	0.499
July	0.688	0.58	0.537	0.692	0.451
August	0.696	0.657	0.593	0.684	0.374
September	0.726	0.395	0.604	0.885	0.489
October	0.582	0.571	0.601	0.691	0.58
November	0.854	0.669	0.715	0.685	0.567
December	0.686	0.629	0.913	0.538	0.771

2022 Chapter 94 Report Spreadsheet Precipitation Data: Precipitation was generally greater in other years than in the December 2020 through May 2021 hydraulic overloading period, indicating likelihood of unapproved bypassing (to CSO Outfall No. 002) discharges. The facility previously installed a CSO Outfall No. 002 flow meter but is not reporting flow data (contrary to existing NPDES Permit requirements):

Month	2018	2019	2020	2021	2022
January	6.83	5.4	3.4	1.3	2.0
February	6.75	2.05	2.38	2.3	4.3
March	3.5	3.65	4.24	2.3	4.4
April	5.84	6.42	7.1	1.8	4.75
May	7.39	9.9	3.2	4.7	6.4
June	5.48	4.7	6.05	3.1	4.25
July	8.28	4.4	3.57	4.8	0.7
August	23.4	1.45	6.8	3.3	2.3
September	7.94	1.5	3.45	9.07	4.3
October	3.8	9.5	3.7	3.6	5.1
November	8.7	1.6	4.2	2.6	4.2
December	6.31	3.7	4.3	1.6	5.5

Rainfall Data for last ten years (2022 Annual CSO Status Report):

Year	Rainfall
2022	48.20
2021	40.47
2020	52.03
2019	54.27
2018	94.23
2017	50.24
2016	33.75
2015	45.43
2014	52.28
2013	41.43
Average	**51.23**
Average excluding 2018	**46.45**

- **Bypassing to CSO Outfall No. 002 is contrary to existing NPDES permit conditions:**
  - NPDES Part A.I.B (IDENTIFICATION OF COMBINED SEWER OVERFLOW DISCHARGES): The outfalls identified below serve as combined sewer overflows **necessitated by storm water entering the sewer system and exceeding the hydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for this reason**. Dry weather discharges from these outfalls are prohibited. **Each discharge shall be monitored for cause, frequency, duration, and quantity of flow. The data must be recorded on the CSO Supplemental Reports (3800-FM-BPNPSM0441 and 0442) and shall be reported monthly as an attachment**

to the Discharge Monitoring Report (DMR) or as otherwise authorized in the permit. (bolding added)

- NPDES Part A.II (bypass and "severe property damage" definitions) and Part B.I.G (bypassing): The Report indicates apparent throttling of influent flows to prevent headworks flooding (with headworks screen sized for 1.8 MGD flow).
  - The existing NPDES Permit does not include any CSO bypassing condition language, and standard bypassing conditions requirements have not been shown to be met to date for any CSO Outfall No. 002 discharge bypassing.
  - They have made no technical case that the flooding would result in "severe property damage" for any discharges not authorized by the CSO conditions.
  - A Part II WQM Permit Application was required by the 2017 LTCP Approval with Conditions Letter to propose such usage and to show it is allowable given the applicable statutes, regulations, permit conditions, and EPA/DEP policies. No such WQM permit application was submitted.
- NPDES Permit Part C.II.A.1: Combined sewer overflows (CSOs) are allowed to discharge only in compliance with this permit **when flows in combined sewer systems exceed the design capacity of the conveyance or treatment facilities of the system. NOTE:** The headworks units can take a 1.8 MGD flow. The Chapter 94 Report indicates that the facility can handle up to 1.0 MGD wet weather flows, and therefore the 2022 flows should have reflected this.
- NPDES Permit Part C.II.B.1.b: The "Maximum Use of Collection System for Storage" NMC is for storage in the collection/conveyance system prior to discharge to the Treatment Plant, not discharge to a CSO Outfall. There is no storage when the flow is discharged to the waters of the Commonwealth. The 6,200-gallon storage capacity (before CSO Outfall discharging) is not increased by this practice.
- NPDES Permit Part C.II.B.1.c: The "Maximize Flow to the Treatment Plant" requires maximizing influent flows to the WWTP. If they could handle 1.0 MGD monthly average flows in 2021 (as claimed in their Chapter 94 hydraulic figure), then they should be doing so now.
- NPDES Permit Part C.II.C.3: The incorporated-by-reference Approved LTCP (approved 2017 with conditions) explicitly did not authorize any usage of the headworks valve to redirect influent flows to CSO Outfall No. 002 discharge (simply to prevent headworks flooding). See the 2017 Approval with Conditions Letter for details.

- **Chapter 94 Form Item 4 (Sewer Extensions) & Attachment C**: The Chapter 94.12(a)(4) requirement includes: "all known proposed projects which require public sewers but are in the preliminary planning stages. The map shall be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served".
  - **"**No sewer extensions have been constructed or are anticipated".
  - The Attachment C (LOCATION MAP WITH SERVICE AREAS NOTED) noted "future growth areas" that are presumably future anticipated extensions.
- **Chapter 94 Form Item 5 (Sewer system O&M) and Attachment D**: Chapter 94.12(5) requires "A discussion of the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year".
  - "A copy of the Authority's Combined Sewer System Operation and Maintenance Plan has been provided in the 2016 Long Term Control Plan".
    - The Report required a discussion, not a reference to unsubmitted documentation.
  - "A major improvement project to the WWTP began in 2015 and was completed in 2018".
  - "the Authority completed flow monitoring which started on December 19, 2017 and concluded January 23, 2019 to correlate overflow events at all of its CSOs. The flow study included installation of flow meters at all of its CSOs for a period of one year in accordance with the CSO Flow Study Plan. A full conclusion and detailed report was provided in the 2021 Long Term Control Plan Update".
    - The Report required a discussion, not a reference to unsubmitted documentation.

- "The Authority has installed a permanent flow meter in CSO #002 to record overflows. This flow meter will be tied into the SCADA system. The Authority also intends to purchase a portable flow meter to analyze flow in the collection system". **NOTE**: The 2021 Chapter 94 Report also stated: "The Authority also intends to purchase a portable flow meter to continue to analyze flow in the remainder of the five (5) CSOs and the collection system".
  - **No measured CSO Outfall No. 002 flow data is being reported despite flow meter and existing NPDES Permit Part A.I.B and Part C.II.D requirements.**
  - They are only reporting inspection-seen flows on the CSO Monitoring Reports and CSO Model estimates (based on precipitation) in estimating percentage captured (LTCP Goal). They are reporting only inspection-noted overflows in the CSO Monitoring Reports and only CSO Model-predicted flows in the Annual CSO Status Report reporting (missing even the SCSA internal inspection forms). They are not using the visual aid-method to detect off-hour or dry weather CSO discharges.
- The Authority has also purchased a sanitary sewer camera to evaluate and troubleshoot the collection system.
  - The 2021 Chapter 94 Report stated: "Use of the camera will begin in 2022". It is unclear if they have any sewer system investigation to date.

- **Chapter 94 Form Item 6 (Sewer System Condition)**: The Chapter 94a.12(a)(5) requirements include: "A discussion of the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, combined sewer overflow, sanitary sewer overflow, excessive infiltration and other system problems." No reported bypassing, SSOs or surcharging per report. System did not experience capacity-related bypassing, SSOs or surcharging during the report year 2022 per response.
  - Available information indicates bypassing at the headworks (discharging to CSO Outfall No. 002) as discussed below. They are also proposing rerating the 0.75 MGD facility to 1.0 MGD per Chapter 94 Narrative, but no other known follow-up. No apparent progress in implementing the proposed LTCP Plan to progressively investigate the collection system for potential issues and corrective action (per previous Chapter 94 Reports).
- **Chapter 94 Form Item 7 (Pump Stations) & Attachment E**: Chapter 94.12(a)(7): The requirements include: "a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station":
  - The St. Clair Sewer Authority has four (4) pump stations. Three (3) of the pump stations are located in the St. Clair Industrial Park and one is located in the East Mines area of Norwegian Township. Flow meters are not provided for each pump station. Pump run times are monitored daily by plant personnel so that any issues can be detected.
    - Maximum pumping rates/flows not provided. The 2021 LTCP Update Section 4.1 provided estimated pump run times, but not actual flow figures.
  - The pump station that has the highest run time is the East Mines Pump Station. During heavy rain events when the flow is the highest these two pumps will typically run approximately 5 to 6 hours each per day.
    - Maximum pumping rates/flows not provided. The 2021 LTCP Update Section 4.1 indicated the following average pump times (both pumps running) but without identifying actual pump station pump capacity:
      - 5.20 hours pumping at the East Mines Pump Station
      - 3.64 hours at UPS Pump Station
      - 1.56 hours at Reidler Industrial Park No. 2 Pump Station
      - 2.58 hours at Industrial Park No. 1 Pump Station.
  - Per CSO Section: There are also four (4) pump stations in the system which are checked daily by SCSA personnel for proper operation. Pump run times are recorded and compared so SCSA personnel can determine if there are any issues developing, which can many times be determined and addressed ahead of time if the pump run times are longer than normal.
    - Therefore, SCSA can provide pump station flow data, and should.
- **Chapter 94 Form Item 8 (IW Report) & Attachment F**: Chapter 94.12(a)(8): "A report, if applicable, of industrial wastes discharged into the sewer system" including ordinances; a discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year"; and "discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken

to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers."

- No ordinance provided.
- No list of industrial customers causing problems. At least one incident referenced in Report.
- No discussion of steps taken to address past operational problems (cleaning solvent discharge for example).

"The St. Clair Sewage Treatment Plant does not receive any industrial wastes. The St. Clair Industrial Park is connected to the collection system; however, the industries only discharge domestic sewage. The Authority does periodically spot check the point sources from each industry in order to verify only domestic sewage is discharged into the collection system".

- The Annual CSO Status Report information only indicated no "industrial strength waste" was discharged, which implies IW discharges are possible. There are a number of IW Stormwater NPDES GPs in the apparent collection system area including: Leed Foundry (NPDES Permit No. PAR202244); EJ USA, INC. - ST. CLAIR FABRICATION (NOEX No. NOEX13102); HEXCEL POTTSVILLE CORP (NOEX No. NNOEX13602; D G YUENGLING & SON, INC. (NPDES Permit No. PAG032210). SCSA has only stated that Yuengling discharges elsewhere.
- No details given on spot-checking of customers discharges.

"There was one situation where a facility discharged cleaning solvents to the sewer system. This discharge was located during an inspection and the owner was notified of the violation. The owner reimbursed the Authority for costs associated with resolving the discharge".

- No mention of what industry/source caused the Report-referenced (undated) cleaning solvent problems (or when).

- **Chapter 94 Form Item 10 (Sewage Sludge Management Inventory) and Attachment H**:
  - 27 dry tons disposed in 2022 (3 tons/month average).
  - Missing NPDES Permit "Part C.III-required Sewage Sludge Management Inventory": This is an existing NPDES Permit Part B.I.C.4/Part C.III permit requirement that such an inventory must be submitted with the Municipal Wasteload Management Report required by Chapter 94. Additional Information is required by WQM Permit No. 5406402-A2. This condition required use of 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. They did not include the available DEP Operator Spreadsheet (available via the DEP website, that uses the EPA methodology) or provide alternative calculations using the methodology.
- **Chapter 94 Form Item 12 (Flowmeter Calibration):** Chapter 94.13(b): "Flow measuring, indicating and recording equipment shall be calibrated annually, and the calibration report shall be included in the annual report submitted under § 94.12 (relating to annual report)".
  - They calibrated the effluent flow meter, but not the installed Influent Flowmeter (future NPDES Permit monitoring/reporting requirements) or the installed CSO Outfall No. 002 flow meter (monitoring & reporting per existing permit conditions).
- **Chapter 94 Form Item 11 (Annual CSO Status Report) and Annual CSO Status Report:**

SCSA provided a "2022 COMBINED SEWER OVERFLOW REPORT" that consisted of a narrative report, the DEP Annual CSO Status Report Form, and assorted attachments. See also Chapter 94 Report CSO-related information above. Other CSO-related information can be found in other Fact Sheet sections.

- **2022 COMBINED SEWER OVERFLOW REPORT Narrative**:
  - **Section II.A.1 (Proper operation and regular maintenance programs for the sewer system and CSO outfalls NMC)**:
    - "The SCSA has a staff of three full-time people responsible for O&M of the collection system and the WWTP: the Manager/Chief Operator, a second licensed WWTP Operator

and a licensed Collection System Operator. SCSA personnel perform inspections daily of each CSO".

- The attached CSO Monitoring Reports do not verify any daily inspections of the Diversion Chambers or CSO Outfall locations. 2021 Reports included SCSA forms (not meeting NPDES Permit requirements) that indicate they missed weekend inspections, etc. See related comments on lack of required installed visual aid (below).
- Three persons might not be able to adequately address CSO-required inspections and O&M where there are multiple CSOs scattered throughout the Borough (in addition to normal WWTP duties).

- "The weir settings are set in accordance with the Final Plan of Action for the Identification and Minimization of Dry Weather Combined Sewer Overflowed Discharges of 1995".
  - It is not clear why they are not using the 1995 Engineering Correlations of pipe flow depth to discharge volumes for CSO Outfall Nos. 003 – 006, and 008, for lack of better flow data. Even if the old correlations are obsolete, they could compare reported CSO pipe depth flow values to CSO Model outputs for example to see if that helps calibrate that model.
- "In January 2020, SCSA installed a permanent flowmeter to monitor discharge in CSO #002 per the Report".
  - They are not reporting CSO Outfall No. 002 flow monitoring data on the CSO Monitoring Reports, despite existing NPDES permit reporting requirements. If they use that portable flow meter (purchased per the Report) to monitor CSO Outfall flows, that data would also be required to be reported.
  - They are not reporting CSO discharges at their other CSOs based on their CSO Flow Model which predicted multiple additional CSO discharges (in addition to those actually seen during CSO diversion chamber inspections).
  - They are not using the "visual aid" method of detecting CSO discharges to allow any calibration of their CSO Model (discharge per precipitation in inches) or to detect dry weather discharges.
- "The inspection/maintenance program is a visual inspection of the CSO structure. The visual inspection includes review of the inside of the structure, the discharge end of the CSO, and the area in the vicinity of the outfall. The visual inspection looks for debris that accumulates on the bar screens of the diversion manhole. Any debris located in the general area along the streambed which was small enough to pass through the bar screen is collected and disposed of. If there are any blockages on the bar screen the SCSA personnel remove the blockage with available equipment. If any structural defects are observed, the SCSA will determine a corrective action. During the inspection, the operation of the tide valves is also checked, and any necessary maintenance is performed such as replacement of pins, hinges, etc. If there is flow discharging through the CSO outfall during inspections, it is recorded on a form used by SCSA. These forms are submitted to PADEP on a monthly basis with the DMRs".
  - The 2022 Report's attached CSO Monitoring Reports do not have the required information regarding inspections, etc.
  - The 2021 Report's usage of SCSA forms (lacking certification section, etc.) is not acceptable as the permit conditions require usage of current CSO Monitoring Report Forms. The SCSA forms lack certification sections, etc.
  - They are not using any approved visual aid methodology to detect CSO discharges at other times than during actual inspections (bottle on string method, etc.).
  - They have not indicated any inspection of the CSO discharge points on the stream to detect and correct any solids or floatable issues.
  - The 2/17/2017 LTCP Approval with Conditions Letter required use of the Visual Aid method of detecting flows, with specific requirements that have <u>not</u> been addressed.

- **<u>Section II.A.2 (Maximize Use of Collection System for Storage NMC)</u>**:
  - "The maximum capacity of the interceptor is regulated by several sections of pipe located along Mill Creek south of the Borough. These pipe sections are 18-inch diameter at 0.20% slope and have a maximum capacity of 3.04 MGD".

- "The WWTP influent flow is controlled by a gate valve located prior to the headworks building but after CSO #002. The gate valve functions as a flow control device to maximize the flow to the plant **while prohibiting the combined influent flow from flooding the head works of the plant. It also allows for flow to be held back in the collection system to utilize it as storage volume during wet weather**. The collection system can hold approximately 6,200 gallons until CSO #002 will begin to discharge". **(bolding added)**.
    - The Department has not approved this usage in the approved LTCP. In practical terms, any held back flow >6,200 gallons results in CSO Outfall No. 002 discharges, i.e. no additional storage is expected to occur in the collection system by this practice. The NMC goal is storage and then discharge to the POTW, not for later discharge to the waters of the Commonwealth.
    - The intentional use of the valve to prevent flooding triggers the applicability of existing NPDES Permit bypass requirements. Prevention of flooding of the headworks does not meet existing bypass language requirements for allowed bypassing. See number of CSO events and (modeled) estimated discharge information below.

- **Section II.A.3 (Review and modification of pretreatment requirements to ensure that CSO impacts are minimized NMC)**: **"**The SCSA currently does not have a pre-treatment program due to a lack of industrial users. The existing St. Clair Industrial Park does not include any business that discharges industrial strength waste. The Yuengling Brewery's Mill Creek plant in the St. Clair Industrial Park does have a pretreatment facility; however, it discharges to the Greater Pottsville Area Sewer Authority system. Coal Creek Plaza is the commercial development on the north end of the Borough. This development is zoned commercial; therefore, no industrial strength waste is anticipated from the further development of this area. The only areas zoned as industrial from the current Zoning Map would be difficult to develop due to its topography. The need for a pre-treatment program is evaluated every time SCSA receives an application for a proposed new connection to the system. If there is any future need to develop a pre-treatment program due to industrial users coming on the system, it would be developed within a one (1) year timeframe from the date of the industrial user land development application and prior to the connection of the industrial user to the SCSA collection system".
    - A pretreatment plan is an existing NMC requirement, and cannot be deferred. In terms of minimum requirements (besides the commitment to review any proposed new connection to the SCSA POTW):
        - The Chapter 94 Report states there are no industrial wastes, not that there is no business that "discharges industrial strength waste". The discrepancy must be resolved.
        - IW is not defined by strength but by source and type (non-sewage). Classification as an Industrial User is related to the Standard Industrial Classification (SIC) Code (see the IW Stormwater General Permit PAG-03 for how specific SIC codes relate to specific industrial categories) and 40 CFR 400 – 500 Effluent Limitation Guidelines for identified industrial categories.
        - See the NPDES Permit Part A.III.C.2 (Planned Changes in Waste Streams) and Part B.I.D (Pretreatment) requirements that must be addressed in any Pretreatment Program. See also additional Part B.I.C.4 annual reporting requirements for any industrial classification subject to pretreatment requirements.
- **Section II.A.4 (Maximization of flow to the WWTP for treatment NMC)**: "The WWTP was designed in 1974 for an average daily flow (ADF) of 0.75 MGD and a peak design flow (PDF) of 1.5 MGD. The new headworks capacity was increased to allow for the increased peak hourly flow of 1.8 MGD thereby maximizing flow to the WWTP".
    - No mention of proposed facility rerating and any expected impact on the ability of the facility to handle greater wet weather flows.
    - No explanation why they are not directing 1.8 MGD flows into the Treatment Plant.
- **Section II.A.5 (Elimination of CSOs during dry weather NMC)**: "SCSA personnel continue their daily inspections of the CSOs to assure no dry weather overflows occur. The operators can visually tell if an overflow had occurred at the CSO due to the presence of leaves, solids or

floatables captured at the bar screen or seen at the outfall. If a dry weather overflow would occur, the operators would record the event".

- They have apparently failed to install or use visual aids at the CSOs per the Approved LTCP to detect dry weather or other discharges when SCSA personnel are not present. As noted above, they may not have enough personnel to perform adequate CSO inspection and are not doing daily inspections for CSO Outfalls other than CSO Outfall No. 002. CSO Outfall No. 002 also has no bar screen to detect discharges (in the absence of flow meter monitoring & reporting).
- 2021 and 2022 CSO Monitoring Reports had dates when there was discharges without an accompanying precipitation event recorded or other written explanation (snow melt). One 2021 CSO Monitoring Report indicated discharges every day of the month of March (with confirming Attachment 2 form) in the absence of recorded precipitation events for the majority of the days and without identifying quantity/duration for CSO Outfall No. 002 discharge.
- The attached 2022 CSO Monitoring Reports do not report <u>daily</u> monitoring is being done. The 2021 Report had SCSA Inspection Reports (no certification section, etc.) that indicate lack of weekend coverage, etc. and which do not meet NPDES Permit requirements to use the CSO Monitoring Report forms for reporting.

- **<u>Section II.A.6 (Control of solid and floatable materials in CSOs NMC)</u>**:
  - "All of the CSOs have metal tide gates which control the CSO portion of the structure. The tide gate keeps the majority of the solids and floatables within the CSOs diversion manhole which discharges to the interceptor so that they are transported to the treatment plant".
    - Tide gates keep floodwaters out, but any accumulated solids/floatables would be flushed out in the next CSO discharge.
      - The CSO No. 002 figure appears to place the tide-gate on the discharge pipe to the stream. There was a previous accumulation of solids there at the CSO Outfall discharge, indicating previous tide gate failure to control solids.
      - Other CSOs (with internal chamber tide gate) would have any accumulated solids/floatables flushed out of the internal chamber during wet weather events.
    - There is no CSO Monitoring Report information showing that SCSA has inspected CSO discharge locations for accumulated solids or floatables. 2020 Site visit indicated solids build-up at CSO Outfall No. 002. The 2021 Inspection Report found accumulated solids/floatables at several CSOs, with CSO Outfall No. 002 not observable due to weather/vegetation conditions.
  - "CSOs #003, #004, #005, #006 and #008 have bar screens which catch any large floatables which may have entered the CSO portion of the diversion manhole before entering Mill Creek".
    - The provided CSO No. 008 figure did not show any bar screen. The requirement is also to address solids in general, not just large floatables. No stream inspection plan was cited to verify lack of solids & floatables build-up at the CSO discharge points.
  - "The effluent pipe at CSO #002 is approximately 4-feet higher than the invert of the interceptor and therefore most solids will be captured in the manhole and not exit to the stream".
    - Historically, this statement is false as SCSA was required to address solids build-up at the CSO Outfall No. 002 discharge point. No proposed action to prevent recurrence was identified. Elsewhere, a possible CSO Outfall No. 002 bar screen was mentioned, but no information provided.
- **<u>Section II.A.7 (Pollution prevention programs to reduce contaminants in CSOs NMC)</u>:**
  - "The Borough of Saint Clair presently has a street cleaning program which covers a large portion of the paved collection system area. The Borough owns their own street sweeper. Streets are cleaned twice per year. Once is typically in late spring/early summer and the second time is prior to the Borough's annual Halloween Parade. The Borough cleans all catch basins at a minimum of twice per year. Additional cleanings are performed as necessary. The Borough has a voluntary recycling program".

- SCSA did not indicate it was compliant with the 2/17/2017 LTCP Approval with Conditions Letter requirements for recordkeeping for these actions. **NOTE**: At least one other facility blamed treatment plant problems on lack of its host municipality to conduct catch basin cleaning, etc.

- "SCSA requires that all new restaurants have grease traps and regularly inspects them. Any commercial establishments which have been found to be discharging anything above normal are monitored more closely. For example, one fast food restaurant was found to be discharging more grease than would be expected. SCSA now requires this establishment to submit copies of their bill for grease trap cleaning to ensure it is being cleaned on a regular basis. In the past, SCSA has mailed out a flyer regarding discharge of Fats, Oils and Grease as a Public Education Outreach".
  - The FOG program and its monitoring program should be further explained.

- **Section II.A.8 (Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts NMC**):
  - "The Authority publishes periodic ads to provide the public with Long Term Control Plan updates, as well as discusses necessary items regarding the CSOs during regular public Authority Meetings".
    - See new Draft NPDES Permit Part C CSO public participation language.
  - "All CSOs are posted with signs notifying the public of the potential for raw sewage discharge at that location during wet weather".
- **Section II.A.9 (Monitoring to effectively characterize CSO impacts and the efficacy of CSO**
- **controls NMC)**:
  - The Report mentioned previous 2018 CSO flow study and purchase of CSO Outfall No. 002 flow meter, but no CSO Outfall No. 002 flow data was provided. No mention of any in-stream Water Quality monitoring program (with annual reporting requirements), etc.
- **Section III (2022 Discussion**):
  - CSO Monitoring: "The CSO discharges and WWTP treated flows as recorded by the CSO meters":
    - No CSO flow meter data was found in the Report or the CSO Monitoring Reports for 2022.
  - Ten-Year Average Precipitation: They estimate an average annual rainfall of 46.45-inches (excluding 2018 data), with 51.23-inches if 2018 rainfall data is used. As that volume exceeded the 2021 year's precipitation (especially during the 2021 calendar months of hydraulic overloading), that would indicate similar hydraulic overloading would have been expected in 2022 (unless the CSO Outfall No. 002 is being used for bypassing).
  - Minimum Precipitation Causing Discharge: 0.10-inches.
    - The CSO Flow Study indicated discharges started at 0.18-inches of precipitation.
    - This indicates CSO Outfall No. 002 discharges are expected to continue during most rain events. However, the CSO Monitoring Report is not reporting CSO discharges during all such rain events. In practical terms, this value might also change if they stop bypassing at the headworks.
    - See Attachment 16 reported data below for 2022 modeled estimates of CSO discharges (based on precipitation/CSO discharge correlation from 2018 study, not calibrated by accurate/complete CSO Monitoring Report data.
- **Section IV.B (Implementation Schedule)**: The multiple Chapter 94/Annual CSO Status Reports (2019 – 2022) show a pattern of scheduling slippages (of ~1 year, each Chapter 94 Report/Annual CSO Status Report submittal) each year. 2022 Report Implementation Schedule:
  - April 2022: Submit Total Hardness, Total Lead, and Total Zinc effluent samples to PADEP:
    - Not received to date. Target date same as in 2021 Report.
  - April 2023:
    - Submit WQM Permit Application for CSO #002 Barscreen: Not received to date.
      - Install Barscreen at CSO #002: 90 Days after Receipt of Permit
    - Perform Annual Stream Sampling: Status unknown. 2021 Report indicated it would be done March 2022.
    - Evaluate options for CSO overflow observation: April 2023. 2021 Report indicated it would be done April 2022.

- Submit WQM Part II Permit revision for valve outside of headworks building: Status unknown. 2021 Report indicated it would be done April 2022.
- Begin Phase 1 of Televising and Mapping Program: Status unknown. 2021 Report indicated it would be done March 2022. Any year of delay automatically delays the next step by a year, and all subsequent milestones.

- May 2023: Install CSO Overflow Observation Equipment: Status unknown
- June 2023: Update Collection System Mapping: Status unknown
- March 2024:
  - Begin Design on Phase 1 Improvements
  - Begin Phase 2 of Televising and Mapping Program
- March 2025:
  - Bid Phase 1 Improvements
  - Begin Phase 3 of Televising and Mapping Program
- March 2026:
  - Construct Phase 1 Improvements
  - Begin Phase 4 of Televising and Mapping Program
- March 2027:
  - Begin Design on Phase 2 Improvements
  - Begin Phase 5 of Televising and Mapping Program
- March 2028: Bid on Phase 2 Improvements
- March 2029: Construction Phase 2 Improvements
- March 2030: Begin Design on Phase 3 Improvements
- March 2031: Bid Phase 3 Improvements
- March 2032: Construct Phase 3 Improvements
- March 2033: Begin Design on Phase 4 Improvements
- March 2034: Bid Phase 4 Improvements
- March 2035: Construct Phase 4 Improvements
- March 2036: Begin Design on Phase 5 Improvements
- March 2037: Bid Phase 5 Improvements
- March 2038: Construct Phase 5 Improvements. 2021 Report indicated it would be done March 2037. See comments on 2019 and 2020 Reports (below) for what was proposed back then.

- **DEP CSO Status Report Form**: This form is the Annual CSO Status Report required by the existing NPDES Permit Part C.II.D:
  - **NINE MINIMUM CONTROLS (NMCs) AND LONG-TERM CONTROL PLAN (LTCP) Section:**
    - Item 2 (Were all NMCs Implemented): Contrary to the response, they do not appear to be fully implemented (see above). The 2/17/2017 LTCP Approved with Conditions included additional NMC-related requirements incorporated into the Approved LTCP and NMCs (such as visual aid requirements). No schedule was provided for unimplemented NMC requirements (including maximization of flow to the WWTP for minimum treatment).
    - Items 3, 4, and 5 (LTCP Status and Outstanding Issues):
      - The 2020 LTCP was referenced but indicated unapproved. The 2017 (Approved with condition) LTCP is in effect now. The unaddressed Approved LTCP requirements should have been addressed here (missing Annual In-Stream WQ sampling, etc.).
      - The response statement that: “All components of the LTCP are underway” is effectively meaningless. No other information was provided.
    - Item 6 (agreement with DEP and/or EPA for any aspect of the CSS or CSO discharges): “As part of permit conditions, permittee installed temporary flow meters to record flows at all CSOs for one year. Permittee has submitted a Flow Study to model/estimate future CSO flows. Permittee has also prepared an updated LTCP which utilizes the flow meter data to plan future projects to remove I&I and perform separation work in collection system”.
      - Any agreement with the NE Monitoring & Compliance Section to address previous or current noncompliance should have been addressed here

- No actual corrective action plans were identified in this form. SCSA has apparently not followed through on the proposed collection system investigations (previous Chapter 94 CAP/LTCP) or potential projects noted in the CSO Flow Study Report.

- Item 7 (Have all tasks and milestones for the LTCP been completed with identification of uncompleted items): The response was "no", but only completed tasks were identified.
  - The uncompleted tasks/milestones were not identified.
  - The In-Stream Water Quality Monitoring Plan required Annual monitoring which apparently has not been done, as one example.
- Item 8 (anticipated modifications to NMC and/or LTCP implementation plans or facility improvements planned for the next reporting period): The response was "NA".
  - This item was applicable and must be completed. If "none", then state none.
  - A CSO Outfall No. 002 bar screen was mentioned in Chapter 94 reports as one anticipated modification.

- **ANNUAL MONITORING, INSPECTION AND MAINTENANCE ACTIVITIES Section**:
  - Item 2 (Dry Weather Discharge Inspections) and 5 (dry weather discharges corrective actions): SCSA claimed none observed and referenced attached documents.
    - The form items and existing NPDES permit conditions require summarization of the required information in the Report, not referencing a year's worth of DMR Supplemental Forms or attached tables.
    - The lack of visual aid implementation and partially uncompleted CSO Monitoring Reports means SCSA is simply stating they did not physically observe a discharge. However, CSO reporting appears to indicate discharges without an accompanying precipitation event (see below) by flow data. No corrective action is apparently planned to reduce CSO Outfall discharges.
  - Item 3 (Wet Weather Discharge Inspections): The form items and existing NPDES permit conditions require summarization of the required information in the Report, not referencing a year's worth of DMR Supplemental Forms or attached tables. The partially uncompleted CSO Monitoring Reports means insufficient data in the report as well.
  - Item 4 (All maintenance and remedial activities): The requirement was reporting of any maintenance work, not just lack of "major" maintenance work. They also did not define what they meant by "major maintenance", rendering their response non-responsive.
  - Item 6 (Sampling of CSO discharges or stream): No sampling of CSOs or receiving waters per response.
    - The 2/17/2017 DEP Stream Water Quality Monitoring Plan Item 2 (incorporated-by-reference into the Approved LTCP) require a minimum of 5 years of sampling (first year quarterly sampling, remaining four years of annual sampling). With their delays in starting up the stream sampling program (first delayed to complete WWTP upgrade project with first sampling year corresponding to July 2018 – June 2019), annual water quality monitoring/reporting was required in 2020 through 2023. See 2/17/2017 Letter in terms of specified monitoring requirements and reporting form.
    - No identification of CSO Outfall sampling data to determine if the discharges are contributing to stream impairment and TMDL loadings. The CSO Outfall No. 002 discharges are of sufficient magnitude to potentially require TMDL-related considerations.
  - Item 8 (Where flows in the interceptors can be controlled by throttling and/or pumping): "WWTP personnel have utilized the existing influent valve at CSO# 002 prior to the headworks building to maximize the flow into the WWTP and maximize storage in the collection system".
    - For each instance provide the location, date, time and duration of the overflow as required.
    - As valve restrictions result in CSO Outfall No. 002 discharges, this appears not to be maximizing storage but maximizing CSO Outfall No. 002 discharges to the waters of the Commonwealth.
    - This practice is not approved in the Approved LTCP or existing NPDES Permit. See related comments

- **Figures**: No existing or proposed bar screen or other solids/floatables control shown for CSO Outfall No. 002 or 008.
- **Attached 2022 CSO Monitoring Report Forms**: From a look-over of the attached incomplete 2022 CSO Monitoring Report forms, they are not completing the CSO Monitoring Report forms as required by NPDES permit conditions. They cannot report using their own forms (that lack certification sections, etc.): In addition:
  - CSO Discharges:
    - CSO Outfall No. 002 discharges most months (usually multiple times). Line and Gate blockage reported in May and several other months. No discharge reported in June despite 4.15-inch precipitation event. No discharge reported in July, August.
    - CSO Outfall No. 003 – 006, 008 discharged: April 2022 (apparently going by physically observed discharges, not modeled discharge).
    - There were reported discharges without accompanying reported precipitation that must be assumed to be dry weather discharges (in the absence of any information showing that they were snow melt events in the comment section). Conversely, there were precipitation events without any evidence of inspection to determine if the CSO model was incorrect in its prediction of CSO discharges.
  - Form Issues:
    - DMR Permit expiration date is incorrect: December 31, 2024. However, the current permit's expiration date was 12/31/2020, except as administratively extended. Renewal due date (180 days prior to expiration) appears inputted by SCSA.
    - SCSA is not reporting CSO duration and volume as required by the NPDES Permit. Form signature date left blank. As they indicated CSO Outfall No. 002 flowmeter was previously installed, they should have provided that data in the CSO Monitoring Reports.
    - Not all signature sections were completed. It appears Mr. Collins (former Plant Manager) was replaced by Mr. Reed during June 2022 as the EDMR submitter. CSO Monthly Report was left unsigned but Mr. Reed signed the CSO Detailed Report for June.
    - CSO Monthly Inspection Report Comment section referenced "Attachment 2". Form requirements must be addressed on the form itself. Attachment 2 was not found in the 2022 Report, but were found in the 2021 CSO Annual Status Report attachments, but the Attachment 2 SCSA form cannot be used as CSO Monitoring Reports per NPDES permit language (Part A.I.B and Part C.II.D), lacks required certification, etc.
    - CSO Detailed Report Comment Section was left blank. That is where inspection comments like pipe flow height, spotting evidence of pervious discharge, description of required maintenance, snow melt happening, etc. is required.
    - June, July, August Detailed CSO reports not reporting any CSO inspections for CSO Outfalls. They did not provide Detailed CSO reports for the other outfalls to document inspections (except for single month of April), etc.
- **Attachment 16 (2022 Data Report)**: Report was based on "model" outputs for CSO discharges. The model predicted CSO discharges not reported on the CSO reporting forms. Provided data:
  - Total 2022 Volume Treated at WWTP during Wet Weather: 210,736,000 gallons
  - Total 2022 Estimated Volume CSO Discharged: 36,044,797 gallons
  - Total 2022 Wet Weather Volume: 246,780,797 gallons
  - 2022 Treated Flow During Wet Weather: 85%
    - "Per discussions with PADEP, Multiple day treatment plant flow was counted towards yearly volume of wet weather discharge".
    - "Wet weather events were considered over when WWTP flow dropped below 363,360 GPD".
    - "If data was invalid due to meter failure, CSO flows were estimated based on the average percentage for all valid data points for each individual CSO".
  - General Comments:
    - **Potentially Invalid Calculation**: The 85% calculation (based on gross wet weather flow modeled figures) might be invalid.
      - The 2021 LTCP Update indicated that 53% of the SCSA Service Area consists of separated sewers. The SCSA separated sewer sheds might have significant I&I contributing to wet weather flows. The LTCP Goal is "Elimination or capture of 85% by volume of the combined sewage collected in the combined sewer system

during precipitation events on a system-wide annual average basis" (excluding separated sewer shed I&I contributions by definition). They need to verify no substantial I&I issues in the separated sewer sheds.
    - SCSA apparently bypassing influent wet weather flows (unauthorized CSO Outfall No. 002 discharges) in the absence of CSO Outfall No. 002 flow data).
    - The calculations are based on an uncalibrated precipitation/CSO discharge model which SCSA itself is not using to report CSO Outfall discharges via the CSO Monitoring Report forms.
- **Estimated number of CSO discharge events from modeling**:
    - 57 CSO events (counting consecutive discharge days as the same event). The DMRs reported 19 CSO events in comparison, but it is unclear if they are performing inspections that would catch all CSO discharges. In practical terms, if they have a CSO Outfall No. 002 flow meter, then they should be reporting CSO Outfall No. 002 flow volumes/durations by flow meter and using the CSO Model or 1995 Engineering Correlations (to pipe flow depth), but have not been doing so.
    - All CSO Outfalls were predicted to discharge every month of the year, including the DMR "no discharge" months. The predicted CSO discharges should have been reported in the absence of a visual aid method of detecting discharges (when SCSA personnel are not actually observing the outfall discharge).
- **For comparison, here is the 2021 Annual CSO Status Report estimates**:
    - Total 2021 Volume Treated at WWTP during Wet Weather: 265,848,000 gal
    - Total 2021 Estimated Volume CSO Discharged: 34,990,975 gal
    - Total 2021 Wet Weather Volume: 300,838,975 gal
    - 2021 Treated Flow During Wet Weather: 88%

- **2020 Chapter 94 Report/CSO Annual Status Report Issues**: The Report is available via OnBase. They used the DEP Chapter 94 Form and spreadsheets plus DEP Annual CSO Status Report form. Review comment from a look-over as part of this NPDES Permit Renewal Technical Review:
    - **Chapter 94 Form: General Section**: The WWTP/discharge outfall is located in East Norwegian Township, not St. Clair Borough. (CSOs are in the Borough).
    - **Chapter 94 Form Items 1, 2, 3, and 9 (Hydraulic and Organic Overloading)**:
        - **Hydraulic Overloading (>0.75 MGD)**: They included two different sets of spreadsheets.
            - One set of Spreadsheets indicated **2018 and 2019 hydraulic overloading**, projected to continue. The overloading period overlapped with wet weather year of record in NE PA.
            - A second Appendix I set (based on "corrected" information due to "improperly calibrated flowmeter") indicating no previous or projected hydraulic overloading. Information on Correction: "During preparation of this report it was discovered that during the August 2019 flowmeter calibration, the flow meter was inaccurately reporting approximately 120 gpm higher than it should have. A copy of the 2019 Calibration Report is included. Based on this information a Corrected Chapter 94 Spreadsheet was developed showing revised values for August 2018 through July 2019 based upon the Calibration Report. The revised values subtracted 172,000 gpd (120 gpm) from the August 2018 through July 2019 Average Monthly Flows. The revised calculations show that there is no projected hydraulic overload of the treatment plant. From this report moving forward, subsequent Chapter 94 reports shall utilize the corrected values from August 2018 to July 2019." The provided 8/5/2019 calibration report noted the flow meter was reading 120 GPM higher before the calibration than afterward.
                - Additional engineering analysis/explanation is required because the reported hydraulic overloading corresponded to extreme precipitation months.
                    - Other facilities reported hydraulic overloading during the same periods due to high precipitation and I&I problems (see Chapter 94 Spreadsheet precipitation values). So hydraulic overloading was likely during the time-frame
                    - It is unclear if the 120 GPM error was for the entire flow range or only higher flows. Simple subtraction of 120 GPM (172,000 GPD) might mask actual hydraulic overloading months and potential future need for plant expansion.

        - In CSO terms, if the facility was not exceeding its hydraulic capacity in 2018 and 2019, then an undefined number of CSO No. 002 discharges were not authorized to be discharged by the NPDES Permit Part A.I.B language (limiting authorized CSO discharges to hydraulic overload situations).
    - **Corrective Action Plan**: "Although one is not warranted, A Corrective Action Plan was prepared as part of the 2019 Chapter 94 Report and is attached. **The Authority continues to move forward with items within the 2020 CAP**." They essentially combined the CSS LTCP and Separated Sewer System into one CAP. The CAP milestones are also in the Annual CSO Status Report Implementation Schedule.
        - **CAP Language**: "The calibration report from 2019 indicates that the inaccurate flow readings were from August 2018 to August 2019. The inaccurate flow meter was reporting approximately 120 gpm higher. The reported hydraulic flow values were corrected in the 2020 Chapter 94 Report. revised values subtracted 172,000 gpd (120 gpm) from the August 2018 through July 2019 Average Monthly Flows. The revised calculations show that there is no projected hydraulic overload of the treatment plant".
        - **Identified CAP Tasks**:
            - LTCP Implementation Plan includes: "Continue adjustments at CSO #002 to maximize flow to the WWTP" in 2020.
            - Purchase a portable flow meter: June 2021
            - Purchase a sewer inspection camera: June 2021
            - Develop a Sewer System Mapping Program: "Mapping of the collection system will be coordinated with the camera inspection plan. The Authority anticipates mapping of the collection system to be completed in a period of five years.
            - Implement system inspection and mapping program: June 2021.
                - "The Authority plans on separating the collection system into five (5) areas to perform the video and inspection".
                - "As Authority staff televises and inspects the collection system the pipeline will be evaluated for I/I and other damage. If identified the Authority will formulate a slip-line, rehabilitation and/or separation plan to reduce I/I. This will be a multi-year phased project".
            - Design and construct collection system improvements
            - Evaluate WWTP for increasing capacity: If hydraulic overloads continue in the future, other options at the WWTP will also be considered such as flow equalization or increasing capacity
            - Update LTCP: June 2026 and June 2030 and June 2034
            - Construct Phase 5 improvements: June 2036
            - "Please note that SCSA intends to implement all items in the schedule, but the schedule for large construction projects may be affected by funding availability".
        - Where is the Influent Flow Meter data for 2018 and 2019? One was installed in 2018 as acknowledged elsewhere in the Report.
- Organic (>1275 lbs BOD5/day): No existing or projected organic overloading. They did not adjust the organic loadings in the Appendix I corrected spreadsheet for that period (but changes in flows would change influent mass loadings). In terms of sanitary flow loadings:
    - Application Information:
        - St. Clair Borough: 100% CSS, 4,830 persons, 83% flow contribution
        - Norwegian Township: No CSS, 116 persons, 2% flow contribution
        - East Norwegian & New Castle Twps.: 87% CSS, 873 persons, 15% flow contribution.
        - Total Population: 5819. **NOTE**: This would equate to a dry weather loading of 989.23 lbs BOD5/day at the DWFM default of 0.17 lbs/person for new system.
    - EDUs:
        - 1,781 EDUs existing.
        - Projected 5 EDUs/year increase (no sewer extensions per Report)

- Estimated 3.5 persons/EDU. NOTE: This would equate to 6233.5 persons (no IW, but normal commercial/institutional sources)
- 0.400 lbs loading/EDU

- Load: 0.114 lbs/capita. The DWFM default assumption is 0.17 lbs BOD5 for new systems.

- **Chapter 94 Form Item 4 (Sewer Extensions)**: None constructed or proposed per Report. 2020 CSO Annual Status Report Attachment 2 Service area and CSO location map showed some potential future extension areas.
- **Chapter 94 Form Item 5 (Sewer System O&M Plan)**: Referenced Attachment D did not contain information on the O&M Plan. Description of previous WWTP upgrades, mention of CSO flow study, and reference to future purchase of camera is not an O&M Plan. No reference to either CAP or LTCP Implementation Plan.
- **Chapter 94 Form Item 6 (Sewer Condition)**: Referenced Attachments F and G did not include any plan to reduce CSOs which are capacity issues. A general description of the sewer system and treatment plant is not a description of their condition.
- **Chapter 94 Form Item 7 (Pump Stations)**: "The St. Clair Sewer Authority has four (4) pump stations. Three of the pump stations are located in the St. Clair Industrial Park and one is located in the East Mines area of Norwegian Township. Flow meters are not provided for each pump station. Pump run times are monitored daily by plant personnel so that any issues can be detected." No pump capacity or existing/projected pump station flow provided.
- **Chapter 94 Form Item 8 (IW)**: Report indicated no IW waste streams. Report noted incident: "There was one situation where a facility discharged cleaning solvents to the sewer system. This discharge was located during an inspection and the owner was notified of the violation. The owner reimbursed the Authority for costs associated with resolving the discharge." **NOTE**: The LTCP does not state that there are no IW waste streams, only that there are no "industrial strength" discharges. The discrepancies must be clarified.
- **Chapter 94 Form Item 10 (Sewage Sludge Management Inventory**): The NPDES Permit Part C.III.C-required inventory (using condition-specified EPA methodology, with spreadsheet available on DEP Operators webpage) was not provided. They produced 34.42 dry tons in 2020. No liquid sludge was removed from site.
- **Chapter 94 Form Item 11 (Annual CSO Status Report)**: See below.
- **Chapter 94 Form Item 12 (Calibration)**: There were two effluent calibration reports. It is unclear if two copies of same report or if they calibrated two different flow meters (maybe CSO Outfall No. 002). Clarification is needed. Three calibration reports should have been included. Besides Outfall No. 001 effluent flow meter:
  - "Installation of new headworks building including automated mechanical screen, grit removal system and **influent flow meter"**. (Bolding added), and completed in 2018 per Report. The 2020 CSO Status Report stated that SVSA "installed a permanent flow meter to monitor discharge in January 2020".
  - "The Authority has installed a **permanent flow meter in CSO #002** to record overflows. This flow meter will be tied into the SCADA system. The Authority also intends to purchase a portable flow meter to continue to analyze flow in the remainder of the five (5) CSOs and the collection system." (bolding added)
- **2020 Annual CSO Status Report**: See existing NPDES Permit Part A.I.B (CSO Outfalls) and Part C.II (CSOs) for reporting requirements (monthly and Annual CSO Status Report) for required information, summarization, and analysis. The following are comments from an initial glance-over.
  - **Form NMC and LTCP Section:**
    - **Item 2 (NMC Implementation)**: What NMC improvements are being referenced? The Form requires summarization, not referencing other documents. The Form response also failed to specify where any required or referenced information is located.
    - **Items 3 and 4 (LTCP Submittal/Approval)**: They referenced the 9/2020 LTCP Update, but not the (approved with conditions) 2017 Approved LTCP. The "in effect" approved LTCP should have been addressed here, with explanation regarding update.
    - **Item 5 (Outstanding LTCP Issues)**: The response that "All components of the LTCP are underway" is clearly not adequate when issues such as the apparent unauthorized CSO bypassing have not been addressed.
    - **Item 6 (Any agreement with DEP/EPA)**: Was the LTCP requirements being referenced? Permit conditions are not "agreements" per se. In the absence of any CO&A or other

written agreement, explanation and all details should have been provided as to what was agreed (with whom, when, with details).

- **Item 7 (LTCP Milestones)**: They failed to identify whatever milestones and task remain to be completed. For example, this is where compliance with the NPDES Permit-incorporated LTCP Goals should have been addressed. The Chapter 94 CAP appears to be the LTCP Schedule of Compliance (as it references the LTCP although it also addresses separated sewer system shed discharging to CSS sewer sheds).
- **Item 8 (Any NMC/LTCP Implementation changes or Facility improvements anticipated)**: Item was left blank. This is where the 2020 LTCP Update and any proposed NMC changes or Facility improvements (to meet LTCP Goals or NMC requirements) should have been addressed.

▪ **Annual CSO Report Monitoring, Inspection and Maintenance Activities Section**:

- **Item 1 (CSO Inventory)**: CSO Outfall No. 002 discharges to UNT. Correct response.
- **Item 2 (Dry Weather Inspections) and 3 (Wet Weather Inspections)**: The form items must summarize all dry and wet weather inspection with all required information. Referencing copies of 2020 DEP CSO Supplemental Reports and SCSA forms is not the required summarization of the required information. The referenced reports did not include all required information either.
- **Item 4 (All maintenance and remedial activities)**: No "major" item per report. Minor maintenance and remedial activities must be addressed here. No mention of any removal of solids by CSO Outfall No. 002 discharge.
- **Item 6 (Monitoring)**: The response did not contain the required stream information (receiving water name and proximity to CSO outfalls) and list the analytical results) from the concurrent In-stream WQ Monitoring Report.
- **Item 8 (Overflows due to throttling, etc.)**: For each instance provide the location, date, time and duration of the overflow:
  - Summarization is required here, not referencing scattered information in multiple attachments.
  - "WWTP personnel have utilized the existing influent valve at CSO#002 prior to the headworks building to maximize the flow into the WWTP and maximize storage in the collection system". This practice was not approved in the existing LTCP incorporated by reference into the NPDES Permit.

o **Annual CSO Status Report Narrative**: Informational comments:

- They estimated 76 CSO events (noncompliance with 4 CSO Event/year Goal) and think they achieved the 85% capture Goal in 2020 (but unclear if their calculations are accurate for reasons discussed in 3/10/2021 DEP Technical Deficiency Letter (NPDES Permit Renewal including LTCP Update and 2019 Annual CSO Status Report)).
- It is unclear if they updated any DMRs and CSO LTCP information/analysis to address the 2019 flow meter calibration problems discussed in the Chapter 94 Report. They adjusted the Chapter 94 flows for the period of August 2018 through July 2019 (i.e. overlapping part of the CSO flow study period).
- The Report narrative contains assorted deficiencies discussed in the 3/10/2021 DEP Technical Deficiency Letter (NPDES Permit Renewal Application including 2020 LTCP Update and 2019 Annual CSO Status Report) including unauthorized use of gate valve to direct discharges to CSO Outfall No. 002. The Annual CSO Status Report and LTCP Update language/issues overlap.
- When was the "replacement of several hundred feet of terra cotta sewer line with new PVC pipe on 4th Street in the Borough which was clogged with tree roots"? Such sewer O&M/replacement should be explicitly identified as progress in meeting NMC/LTCP Goals in the annual report (without repeating the information in subsequent years). Any references to >3-year old projects should be deleted from Annual Reports.
- They plan to purchase a portable flow meter, trial camera in June 2021 for the CSS.

o **Attachments 4 through 15**: These were copies of the DEP CSO Supplemental Reports and SCSA internal forms that cannot substitute for the summarization and analysis required by the NPDES Permit (Part A.I.B and Part C.II). In addition, the DEP CSO Supplemental Forms should contain all NPDES-required information, not referencing SCSA forms that do not address current reporting requirements. The Reports included failures to report CSO discharge volumes and duration contrary to the NPDES Permit requirement, especially since a CSO Flow Meter was apparently installed on CSO Outfall No. 002. There

also appears to be a discrepancy in terms of reported CSO discharges with the Annual Report narrative table that appeared to indicate all CSO outfalls discharged when CSO Outfall No. 002 discharged.

- **Attachment 16**: This was the "2020 Annual Data Summary". See 3/10/2021 DEP Technical Deficiency Letter comments and questions regarding these reports.
  - **CSO Outfall No. 002**: The same flow for the same number of inches of rainfall, would appear to indicate estimated flow data provided, not actually measured flows despite CSO Outfall No. 002 flow meter. Mismatch with DMR supplemental Report information. Appears to be based on model output (which has not been shown to be accurate).
  - CSO discharges when plant was receiving substantially less than 0.75 MGD hydraulic capacity flows or 1.0 MGD daily max flow capacity (claimed) or 1.8 MGD peak wet weather flow capacity.
  - **Summary conclusions and note**:
    - Total 2020 Volume Treated at WWTP during Wet Weather: 217,472,000
    - Total 2020 Estimated Volume CSO Discharged: 39,845,320
    - Total 2020 Wet Weather Volume: 257,317,320
    - 2020 Treated Flow During Wet Weather: 85% (calculation methodology issues include failure to separate out any separated sewer system's wet weather loading; use of CSO model that has not been calibrated with adequate CSO Monitoring Report data, etc.).
    - Report Note: "Typical dry weather flow is approximately 450,000 gallons per day. For the purposes of determining wet weather treatment volumes, wet weather events were considered over when the WWTP flow dropped under 450,000 gallons per day. Engineering judgement was utilized for irregularities in data when encountered".

- **2019 Chapter 94 Report Form (including 2019 CSO Annual Status Report)**: This Report was reviewed to determine what information might pertain to the 2020 NPDES Permit Renewal Application and CSO issues. Other issues were noted in the review:
  - **Chapter 94 Report Form Items 1, 2, 3, and 9 (Overloading) and Attachments I (Existing or Projected Overloads)**: No existing/projected organic overloading per narrative. **Hydraulic overloading during August 2018 through July 2019 (12 months straight when 2018 months are included) per Chapter 94 Spreadsheet. Report states: "There are no projected overloads and therefore no need to expand the plant"**. They blame the 2019 overloading on 5.2-inch rainfall months but that only occurred in January, April-May and October 2019. Spring rainfalls are usually greater than the rest of the year as well. Report did not show 2019 annual precipitation was that much greater than their historic annual rainfall norms (see LTCP-related comments). **They also blamed hydraulic overloading on the maximizing flows to the WWTP (LTCP/NMC requirement) but that is a basic permit requirement**. Data:
    - 2018: August through December hydraulic overloading:
      - Max 3-month average: 0.895 MGD.
      - AADF: **0.774 MGD**
      - Annual Precipitation: 94.22 inches
    - 2019: January through July hydraulic overloading:
      - Max 3-month average: 0.933 MGD.
      - AADF: **0.759 MGD**
      - Annual Precipitation: 54.27 inches (They estimated the annual average rainfall at 48.88 inches discounting 2018 flows in one location and at a ~52 inches in another) so it is not far from a typical year).
      - WWTP flows: They provided (apparently effluent only) daily WWTP flow data (along with uncalibrated model CSO discharge volumes) in the CSO Report attachments.
    - Chapter 94 Report Spreadsheet Information:
      - Existing EDUs: 1,761 EDUs (down from 1,827 EDUs in 2018, no explanation)
      - Persons/EDU: 3.5 (equates to ~6,163.5 persons loading from all sources including commercial and industrial parks in 2019; and ~563.5 lbs BOD5/day loading using their load/EDU).
      - Load/EDU: 0.320 lbs BOD5/day
      - Load per Capita: 0.091 lbs BOD5/day
      - Estimated new EDUs for next 5 years: 5 EDUs/year
    - Projected Loadings (2024):

- Max 3-month average: 0.714 MGD.
- AADF: 0.5884 MGD
- Organic Max average: 796 lbs BOD/day
- Organic Annual Average: 489 lbs BOD5/day

- Existing Permitted Design Capacities:
  - 0.75 MGD hydraulic design capacity
  - 1,275 lbs BOD5/day organic design capacity.
- CSO-related Permit Language Regarding authorized CSO discharges:
  - Existing NPDES Permit Part A.I.B: "The outfalls identified below serve as combined sewer overflows necessitated by storm water entering the sewer system **and exceeding the hydraulic capacity of the sewers and/or the treatment plant and are permitted to discharge only for this reason**. Dry weather discharges from these outfalls are prohibited. **Each discharge shall be monitored for cause, frequency, duration, and quantity of flow. The data must be recorded on the CSO Supplemental Reports (3800-FM-BPNPSM0441 and 0442) and shall be reported monthly as an attachment to the Discharge Monitoring Report (DMR) or as otherwise authorized in the permit**". (Bolding added)
  - Existing NPDES Permit Part C.II.A,1: "Combined sewer overflows (CSOs) are allowed to discharge only in compliance with this permit when flows in combined sewer systems **exceed the design capacity of the conveyance or treatment facilities of the system**": This includes the:
    - Influent Pipeline to Headworks: Which can apparently handle at least 1.8 MGD Flow. SCSA has indicated its interceptor can handle up to 3.0 MGD flow.
    - Plant Headworks: Sized for 1.8 MGD Flow
    - WWTP: 0.75 MGD hydraulic capacity and 1.0 MGD max daily flow and 1.8 MGD peak hourly flow per WQM Permit Application Module 1.

- **Chapter 94 Report Form Item 4 (Sewer Extensions) and Attachment C (Location Map with Sewer Extensions Noted)**: The Chapter 94.12(a)(4) requirement includes: "all known proposed projects which require public sewers but are in the preliminary planning stages. The map shall be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served".
  - No extensions have been constructed or anticipated per form. The referenced Attachment C topographic map excerpt did not show any extensions (only general service area footprint).
  - However, the 2019 CSO Status Report Attachment 2 (Service Area and CSO Location map) aerial photo with tracing showed "future growth areas" and identified developments whose status must be clarified. Due to differences in scale and lack of topography on the aerial photo, the two figure's information could not be correlated.
- **Chapter 94 Report Form Item 5 (Sewer System Monitoring, maintenance, repair and rehabilitation) & Attachment D (Monitoring, Maintenance, Repair and Rehabilitation)**: Chapter 94.12(5) requires "A discussion of the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year". They have simply not met the regulatory requirement in this submittal.
  - It referenced the 2016 LTCP Submittal as containing the CSO O&M Report. That report would not address separated sewer system O&M or 2019-conducted CSS area work. Another Report section noted they had repaired seven brick manhole lids in 2019.
  - The (2015 – 2018) WWTP upgrade project that did not list any new influent flow meter despite references elsewhere in the CSO Report.
  - They had conducted the 12/18/2017 – 1/23/2019 CSO Flow Study (with "a full conclusion and detailed report" to be provided with the 2020 LTCP Update).
  - Installed a permanent flow meter for CSO Outfall 002 (in 2020 per 2019 Annual CSO Status Report).
  - Authority intention to purchase a portable flow meter for use in the CSOs and collection system.
  - Authority obtaining quotes for a sanitary sewer camera, with purchase plans placed on hold due to COVID-19 pandemic and desire for demonstration.

- See related CSO-comments below.

- **Chapter 94 Report Form Item 6 (conveyance exceedances) & Attachments F (Condition of Sewer System) and G (Condition of the Treatment Plant)**: The Chapter 94a.12(a)(5) requirements include: "A discussion of the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, combined sewer overflow, sanitary sewer overflow, excessive infiltration and other system problems." No reported bypassing (despite CSO Outfall No. 002 potential bypassing), SSOs or surcharging per report. CSO information referenced in Attachments F and G.
  - Attachment F: The generic description of the collection system and CSO locational information is not a description of their actual condition.
  - Attachment G: The general description of the treatment facility is not a description of its actual condition. The referenced WWTP upgrades did not address the condition of the non-upgraded units/equipment onsite. Facility appears to still be using chlorine disinfection in addition to UV disinfection per Renewal Application data.
  - Unpermitted Hydraulic Restriction: As noted in the CSO-related comments, they have installed an influent valve in a manhole directly upstream of the headworks that is acting as an unpermitted hydraulic restriction triggering CSO Outfall No. 002 discharges by throttling influent flows below WWTP hydraulic design capacity and peak wet weather flow capacity. The Department did not approve this valve (not in WQM permit application per my memory and the 2/17/2017 DEP LTCP Update Approval with Conditions Letter explicitly did not approve this usage).
  - Plant Overflows: Annual CSO Status Report checked "yes" for plant overflows, no data provided. No further information found in 2020 NPDES Permit Renewal Application. DEP Incompleteness letter inquired for more information about any non-CSO Outfall overflow/bypass.
- **Chapter 94 Report Form Item 7 (Pump Stations) & Attachment E (Pump Stations)**: Chapter 94.12(a)(7): The requirements include: "a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station":
  - There are four existing pump stations without any identified pump sizes or flow capacities. Three in the St. Clair Industrial Park (East Norwegian Township) and one located in the East Mines area of Norwegian Township. They were not further identified by name, location or latitude/longitude.
  - They lack flow meters. Pump run times were said to be monitored daily by plant personnel so that any issues can be detected per report, but no comparison of max pumping rates to present max flows or projections provided. East Mines PS was indicated to have highest pump run time with "the highest of these two pumps will typically run approximately 5 to 6 hours each per day". This information cannot be used to estimate flows in the absence of PS pump information (GPM).
- **Chapter 94 Report Form Item 8 (IW Report) & Attachment H Industrial Waste Information)**: Chapter 94.12(a)(8): "A report, if applicable, of industrial wastes discharged into the sewer system" including ordinances; a discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year"; and "discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers."
  - SCSA indicates it does not receive any industrial wastes, and states that the St. Clair Industrial Park clients only discharge domestic wastewater. CSO Annual Report NMC section said no "industrial strength" discharges. 2020 NPDES Permit Renewal Application submittal indicated only domestic wastewater, but types of businesses not identified and 40 CFR categories include dental offices, etc. Clarification was requested.
  - The Authority noted it periodically spot checks the point sources from each industry to verify only domestic sewage is being discharged. However, no further details provided.
  - The Report noted there was an incident where cleaning solvents had been discharged to the sewer system, but did not indicate if any WWTP pass-through or interference occurred (no further information provided). No further details such as date or identification of the source or description of the event provided.

- Annual CSO Report NMC Section indicates no pretreatment plan exists, but that one would be created if anyone proposed to send IW to the facility. No ordinance/reg for IUs provided. No description of any existing surveillance program provided.

- **Chapter 94 Form Item 10 (Sewage Sludge Management Inventory) & Attachment J (Sewage Sludge Management Inventory)**:
  - They estimated "232.14 gallons" total* (table missing asterisk explanation) at average 18.32% solids. 41.91 dry tons of "liquid sewage sludge/Biosolids" hauled offsite. Disposal location not identified in Attachment J.
  - **Missing NPDES Permit "Part C.III-required Sewage Sludge Management Inventory"** that must be submitted with the Municipal Wasteload Management Report required by Chapter 94. This summary shall include the expected sewage sludge production (estimated using the methodology described in the U.S. EPA handbook, "Improving POTW Performance Using the Composite Correction Approach" (EPA-625/6-84-008)), compared with the actual amount disposed during the year. They did not include the available DEP Operator Spreadsheet or alternative calculations.
- **Chapter 94 Report Form Item 11 (Annual CSO Status Report)**: Noted issues include:
  - **CSO Annual Report Form NMC Section Item 1 (NMC Report submission)**: They referenced the 2016 LTCP submittal, not addressing 2017 LTCP Update with Conditions letter (which included conditions relevant to NMCs).
  - **CSO Annual Report Form NMC Section Item 2 (NMC Implementation during reporting period)**: They claim implementation and provided no schedule for implementation. Their response is not accurate. NMCs are enforceable narrative TBELs that must be complied with, and assorted NMC issues were noted during the review of the 2019 Annual CSO Status Report:
    - NMC 1 (Proper O&M Program): They are not compliant with this NMC.
      - The CSO discharges when reported WWTP flows below 0.75 MGD hydraulic design capacity, below 1.0 MGD max daily flow and below 1.8 MGD peak hourly flows indicate a failure to comply with existing NPDES Permit CSO requirements that only allow discharge during peak wet weather flows exceeding the listed capacities.
      - If their CSO discharge model is correct, the existing CSO inspection plan is totally inadequate as it has failed to detect numerous "estimated" non-CSO Outfall No. 002 discharges.
      - The described program did not identify minimum frequencies for inspections or other required O&M actions (including removal of sediment and debris from the collection system, etc.).
      - **January 2020 DEP site visit found solids at CSO Outfall No. 002, i.e. they are not complying with O&M and below NMC**.
    - NMC 2 (Maximize Use of Collection System for Storage): They are not compliant with this NMC. The Department has never authorized usage of a gate valve (located before the headworks) to control peak wet weather influent flows for this facility with only back-up capacity to 6,200 gallons prior to CSO Outfall No. 002 discharge "to prevent headworks flooding". In addition, it is unclear whether the unapproved installation of this control valve reduced previous sewer system collection storage capacity. It certainly reduces the storage capacity from when the valve is wide-open.
    - NMC 3 (Review and Modification of Pre-Treatment Program): The Report criteria "industrial strength waste" is not enough to establish the absence of IW dischargers triggering Pre-treatment requirements. No IW dischargers were identified in the 2019 Chapter 94 Report or the initial 2020 NPDES Permit Renewal Application (ambiguous about nature of businesses discharging domestic wastewater to sewer system), but it is unclear whether there are IW dischargers discharging domestic wastewaters to the facility (dental offices other).
    - NMC 4 (Maximize Flow to the WWTP): They appear non-compliant with this NMC as CSO data indicates CSO Outfall No. 002 discharges when the WWTP was treating below 0.75 MGD flows (hydraulic design capacity) and 1.00 MGD max daily flows. The root cause appears to be the unpermitted gate valve causing backflows to CSO Outfall No. 002. In addition, the Report referenced the "Final Plan of Action for the Identification and Minimization of Dry Weather Combined Sewer Overflowed Discharges of 1995" in terms of CSO weir settings (CSO Nos. 003-6, 008 regulators) but did not verify that the weir

settings were optimized to direct flow to the WWTP (and indicated weir settings are modified elsewhere). The referenced Attachment 4 did not contain this 1995 document.

- NMC 5 (Elimination of Dry Weather CSO discharges): The Report-described monitoring/reporting program does not explain how they detect dry weather discharges.
- NMC 6 (Control of Solids and Floatables in CSO discharge): DEP personnel noted solids build up during a January 2020 site visit, so they have failed to meet this NMC. The Report-described inspections do not appear to include observation of receiving stream to detect solids/floatables being directed to the River. CSO Outfall No. 002 has an effluent pipe approximately 4-feet higher than the invert to the interceptor, with the Report assuming most solids would be captured. It is unclear whether their inspection program would catch solids and floatables there, in the absence of a bar screen such as at the other CSOs. It is unclear if the monitoring would detect solids released.
- NMC 7 (Pollution Prevention): The Authority cleans its streets and catch basins twice per year. All new restaurants are required to have grease traps with regular inspections. All new construction is required by the County Conservation District to have proper E&S controls.
- NMC 8 (Public Notifications): No public notification for the required LTCP Update was found in the Report.
- NMC (Monitoring to Characterize CSO Impacts and Efficacy of CSO Controls):
    - They did not meet the existing NPDES Permit LTCP Goal of no more than 4 CSO events per year.
    - Unclear if they met the existing NPDES LTCP Goal of 85% capture. They claim 85%. They are apparently using modeling to estimate CSO flows of unknown validity.
    - They installed the CSO Outfall No. 002 flow meter in January 2020 time-frame per Report but did not start monitoring, so all 2019 flow is modeled data, not observed measured flow.
    - Report indicates each CSO discharge discharging during CSO flow event. This was not documented in their previous reports. This is contrary to the 2019 CSO Supplemental Reports that indicated no discharges for various outfalls during various reporting months. It is not consistent with previous site historical information. **For comparison, the 2018 CSO Report (concurrent with actual CSO flow monitoring but also during record year of precipitation) indicated**:
        - CSO Outfall No. 002 (near plant headworks): 203 CSO flow events (apparently days of CSO discharge); discharge at 0.09-inches rain, no decrease in monthly flow events even in December (after WWTP upgrades); 255,644 gallons average discharge
        - CSO Outfall No. 003: 121 CSO flow events; discharge at 0.17-inches; 2,411 gallons average discharge
        - CSO Outfall No. 004: 84 CSO flow events; discharge at 0.17-inches; 29,518 gallons average discharge
        - CSO Outfall No. 005: 89 CSO flow events; discharge at 0.28-inches; 5,079 gallons average discharge
        - CSO Outfall No. 006: 69 CSO flow events; discharge at 0.50-inches; 12,242 gallons average discharge
        - CSO Outfall No. 008: 26 CSO flow events; discharge at 0.89-inches; 221 gallons average discharge
        - Total 2018 CSO Discharge: 111,061,925 gallons CSS flows discharged to Mill Creek.
    - Calculation included the separated sewer flows without quantification. There are 4 pump stations so flow data and separated system EDUs can be used to separate out the CSS wet weather flows.
- NMC Section Item 6 (Agreements with DEP): The item referenced the CSO Flow Study and ongoing preparation of an LTCP that would use flow meter data to prepare future projects. The Section did not reference the three DEP Approval with Conditions Letters (LTCP Update, CSO Flow Study, Stream WQ Study).
- NMC Section Item 7 (LTCP tasks and milestones): The date of submittal of the Stream WQ Report was not identified, with monitoring proposed in first two quarters of 2020.

They proposed submittal of the LTCP Update in May 2020. It is long overdue (past Permit Schedule and any previous DEP extension).

- NMC Section 8 (Anticipated modifications to NMCs and LTCP implementation plans or facility improvements): Item left blank. None are apparently proposed.

- **CSO Annual Report Annual Monitoring, Inspection, and Maintenance Activities**: Failure to complete Form tables and to provide required summarization:
  - Item 1: Response indicated CSO-related overflows at the POTW. NPDES Permit Renewal Application contained copy of 2019 CSO Report, but no information on POTW CSO-related overflow events. Incompleteness Letter requires all application-required information.
  - Item 2 (Dry Weather Inspections): The section was not completed except for a reference to attached (apparently the CSO Supplemental Reports). See above NMC comment.
  - Item 3 (Wet Weather Inspections): The section was not completed except for a reference to attached (apparently the CSO Supplemental Reports).
  - Item 4 (Maintenance and remedial activities): Seven brick manholes tops were repaired. No "major maintenance and repairs" per Report.
  - Item 6 (Sampling): No CSO sampling. Required information on the Stream name and sampling locations was not provided or referenced.
  - Item 8 (Throttling/pumping controls): This section referenced the "existing influent valve at CSO#002 prior to the headworks building". Per the LTCP Update with Approval Letter, no usage of this valve for the purpose of peak wet weather influent flow control was approved. The Report section did not provide required information regarding al instances (including date, time and duration of the overflow).
- Attachment 2 (Aerial Photo showing separated and combined sewersheds plus areas designated for future growth): CSO Outfall sewershed were not shown as such. Separated sewer shed areas appears area-wise to not match NPDES Permit Renewal Application.
- Attachment 4 (CSO Supplemental Reports): Detailed Supplemental Reports: Not completed as required by NPDES Permit and Form:
  - Discharge volume was listed as unknown.
  - Duration of event was listed as unknown.
  - Precipitation data was starting at 0.1-inches of precipitation, when discharges at lower precipitation totals historically happened.
  - Comment section referenced Attachment 2 (Old no-longer authorized DMRs for CSOs): The information must be inputted on the submitted Reporting form because the official certified forms are missing required information.

- **CSO Report Discussion Section (i.e. talking about CSO Flow Study)**:
  - They estimated 70 CSO Events (somewhat overestimating because consecutive days of discharge can be classified as one CSO Event which reduces the CSO events to 49). However, all CSO discharge flow data appears to originate in modeling of unknown accuracy.
    - They indicate permanent CSO Outfall flow meter installed in the January – March 2020 time-frame.
    - It is also unclear how this single flow meter will allow operator to view influent plant flow and CSO outflow (i.e. is there a second influent flow meter at the WWTP itself?)
  - No mention of required Stream WQ Monitoring Report and only mention of 2018 CSO Flow Study. They do not describe any stream monitoring plan. The estimated 41,651,278 gallons of raw CSO discharges would impact the receiving stream.
  - They noted early portion of 2019 was very wet, but the 54.27-inches annual total not far from their calculated annual average for the 1975-2019 (52.74 inches per 2019 CAP). In practical terms, spring is generally the wettest season of the year. There was no analysis of CSO event frequency, with later months having similar CSO frequencies (with all CSOs discharging on same date).
  - Clarification is needed on method used to detect, measure (CSO volume, intensity, duration) and its accuracy. It is unclear if their methodology meets NPDES Permit monitoring/reporting requirements.
- **Report Section IV (Implementation Plan and Schedule)**: Their proposal seems to be the Chapter 94 CAP. They are already late in their 2018 CSO Report schedule due to delays in implementation (CSO flow meter, portable flow meter and sewer system camera was to be done in 2019. 2019 Report indicated

CSO No. 002 flow meter installed in January 2020, with purchase of portable flow meter/sewer camera projected in June 2020. Other dates have been pushed back a year. See below for 2019 Schedule

- **New Likely CAP Requirements**: The CAP does not address all needed corrective actions or what must be prioritized
  - **Given 12-months of hydraulic overloading and potential future hydraulic overloading due to peak wet weather CSS flows, they might have to upgrade or rerate their WWTP. They have not shown that they will not experience hydraulic overloading in the future.**
    - Removal or Cessation of Usage of unpermitted influent flow valve to throttle peak wet weather flows is required. Such a valve would be allowable for headworks maintenance only (with bypassing headworks for influent flows while maintenance is done). This will increase hydraulic loading on the WWTP.
    - They might require installation of new internal plant bypassing of the Extended Aeration tanks to allow for minimum treatment of CSS flows (primary treatment and disinfection) to meet current CSO requirements.
  - Given inaccuracies of 2019 Estimated CSO flows and missing required information on CSO events (flow duration and intensity), they need to install flow meters on ALL CSO outfalls.
  - The CSO Flow Study noted the need to correct a hydraulic restriction causing discharges at CSO Outfall No. 004 (and possibly more CSO outfalls upstream). They have identified this problem but do not propose correcting it until later phases (see below). It must be corrected upfront.
- Sewershed Televising and Mapping Phases: See Chapter 94 Report Attachment M for map breaking down phase areas, with CSO Outfalls at some boundaries so it is hard to tell exactly which phase will address them. Potential collection system corrective options were identified as including a “slip-line, rehabilitation and/or separation plan”. Treatment Plan options (in event “hydraulic overload continue into the future”) include “flow equalization or increasing capacity”. Looks like:
  - Phase 1 might include CSO Outfall No. 008 (and closed-off CSO Outfall No. 007)
  - Phase 2 might include CSO Outfall No. 005 and 006
  - Phase 3 might include CSO Outfall No. 004
  - Phase 4 might include CSO Outfall No. 003
  - Phase 5 might include CSO Outfall No. 002
- June 2020: Beginning “Phase I” of sewer system televising and mapping.
- June 2021: Begin design for any “Phase I” improvements and begin Phase 2 of sewer system televising mapping.
- June 2022: Bid Phase I improvements, begin Phase 3 sewer system televising mapping.
- June 2023: Construct Phase I improvements, begin Phase 4 televising and mapping.
- June 2024: Begin Phase 2 improvements, begin Phase 5 televising and mapping.
- June 2025: Update LTCP and bid on Phase 2 work.
- June 2026: Construct Phase 2 work.
- June 2027: Begin Phase 3 design.
- June 2028: Bid Phase 3 work.
- June 2029: Update LTCP, construct Phase 3 work.
- June 2030: Begin Phase 4 design
- June 2031: Bid Phase 4 work
- June 2032: Construct Phase 4
- June 2033: Update LTCP, begin Phase 5 design
- June 2034: Bid Phase 5 work
- June 2035: Construct Phase 5

o **Chapter 94 Report Form Item 13 (Calibration)**: Chapter 94.13(b): “Flow measuring, indicating and recording equipment shall be calibrated annually, and the calibration report shall be included in the annual report submitted under § 94.12 (relating to annual report)”.

- Effluent flow meter calibrated.
- No information on influent meter calibration or CSO Outfall No. 002 permanent flow meter calibration provided. Influent flow meter installed per Chapter 94 Report Attachment D. Permanent CSO Outfall No. 002 effluent flow meter installed and tied to SCADA system per Chapter 94 Report Attachment D.

Compliance History

DMR Data for Outfall 001 (from April 1, 2022 to March 31, 2023)

Parameter	MAR-23	FEB-23	JAN-23	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22
Flow (MGD) Average Monthly	0.639	0.572	0.736	**0.771**	0.567	0.580	0.489	0.374	0.451	0.499	0.600	**0.789**
Flow (MGD) Daily Maximum	1.374	0.790	0.968	1.548	0.954	0.991	0.855	0.477	0.584	0.682	0.972	1.043
pH (S.U.) Minimum	6.0	6.0	6.4	6.4	6.0	6.0	6.0	6.0	6.0	6.0	6.6	6.6
pH (S.U.) Instantaneous Maximum	6.6	6.7	7.0	7.0	7.9	8.3	8.7	7.3	6.6	7.0	7.6	7.1
DO (mg/L) Minimum	6.1	5.1	5.3	6.1	5.2	4.8	3.5	3.2	4.2	3.9	3.9	4.2
TRC (mg/L) Average Monthly	< 0.04	< 0.04	< 0.03	**< 2.2**	0.04	< 0.03	< 0.03	0.04	< 0.03	< 0.02	< 0.03	< 0.05
TRC (mg/L) Instantaneous Maximum	0.120	0.130	0.060	0.080	0.070	0.050	0.090	0.100	0.100	0.080	0.090	0.140
CBOD5 (lbs/day) Average Monthly	< 15.0	< 15.5	< 18.0	< 13.4	< 10.9	< 15.0	< 16.3	< 13.8	< 11.1	< 29.1	< 19.1	43.0
CBOD5 (lbs/day) Weekly Average	< 19.7	< 16.3	< 22.8	15.2	< 21.7	< 21.5	31.4	27.1	12.6	78.8	35.2	70.8
CBOD5 (mg/L) Average Monthly	< 3.0	< 3.1	< 3.0	< 2.2	< 2.4	< 3.0	< 3.4	< 4.2	< 3.1	< 6.0	< 3.9	6.2
CBOD5 (mg/L) Weekly Average	< 3.2	< 3.0	< 3.0	2.6	< 3.0	< 3.0	4.4	8.7	3.4	15.1	6.5	8.5
BOD5 (mg/L) Influent Average Monthly	142.0	183.0	136.0	110.0	113	89.6	112	218	313	132.0	189	107
TSS (lbs/day) Average Monthly	< 15.0	< 59.8	< 25.6	< 20.2	< 13.5	< 16.1	< 19.8	28.6	< 21.9	< 31.5	< 15.4	110.3
TSS (lbs/day) Weekly Average	< 196.7	< 16.3	60.8	23.4	< 21.7	< 21.5	42.8	45.3	45.9	67.9	< 18.0	253.0
TSS (mg/L) Average Monthly	< 3.0	< 10.3	< 4.0	< 3.3	< 3.0	< 3.3	< 4.0	9.0	< 5.8	< 6.8	< 3.2	14.8
TSS (mg/L) Influent Average Monthly	261.0	147.0	160.0	64.0	33	194.0	123	268	872	122.0	116	156

TSS (mg/L) Weekly Average	< 32.0	< 3.0	8.0	4.0	< 3.0	4.0	6.0	15.0	11.0	13.0	3.0	30.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1.0	< 5.0	< 1	< 1.0	< 4	< 1	< 1	< 4	< 1.0	< 1.0	< 2	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1.0	489	< 1	< 1.0	91	< 1	< 1	153	< 1.0	< 1.0	< 2	< 2
Nitrate-Nitrite (mg/L) Average Monthly	5.96	4.87	6.08	7.63	11.7	11.4	8	13.9	11.4	9.74	4.64	3.87
Total Nitrogen (mg/L) Average Monthly	7.72	9.36	7.52	8.63	12.86	12.61	9.95	16.66	12.79	8.74	6.29	5.75
Ammonia (lbs/day) Average Monthly	< 0.3	< 2.0	< 0.6	< 0.8	0.7	< 1	< 0.8	4	1.0	2.0	1	10
Ammonia (mg/L) Average Monthly	< 2.0	< 0.42	< 0.1	< 0.13	0.16	< 0.26	< 0.2	1.1	0.3	0.4	0.3	1.46
TKN (mg/L) Average Monthly	1.76	4.49	1.44	1.0	1.16	1.21	1.95	2.76	1.39	< 1.0	1.65	1.88
Total Phosphorus (lbs/day) Average Monthly	9.0	10	7	7.0	8	11	10	9.0	5.0	6.0	7	6
Total Phosphorus (mg/L) Average Monthly	1.45	1.65	0.91	0.89	1.96	1.57	1.37	2.41	1.65	1.39	1.23	0.81
Total Aluminum (mg/L) Average Monthly				< 0.1								
Total Copper (lbs/day) Average Monthly	< 0.05	< 0.07	< 0.06	< 0.06	< 0.05	< 0.06	< 0.05	0.07	< 0.04	< 0.06	< 0.05	< 0.07
Total Copper (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Total Copper (mg/L) Daily Maximum	< 0.01	0.02	< 0.01	< 0.01	0.02	0.02	0.01	0.03	0.02	0.02	< 0.01	0.01
Total Iron (mg/L) Average Monthly				0.06								
Total Lead (lbs/day) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.01	< 0.09	< 0.1	< 0.09	< 0.07	< 0.07	< 0.09	< 0.1	< 0.1
Total Lead (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total Lead (mg/L) Daily Maximum	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

Total Manganese (mg/L) Average Monthly				0.03								

DMR Data for Outfall 001 (from November 1, 2020 to October 31, 2021)

Parameter	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20
Flow (MGD) Average Monthly	0.691	**0.885**	0.684	0.692	0.665	**0.762**	**0.893**	**0.920**	**0.929**	**0.950**	**0.913**	**0.715**
Flow (MGD) Daily Maximum	0.895	1.253	0.998	0.862	0.881	**1.009**	**1.271**	**1.133**	**1.340**	**1.211**	**1.220**	**1.149**
pH (S.U.) Minimum	6.0	6.0	6.0	6.0	6.0	6.0	6.4	6.5	6.0	6.1	6.1	6.0
pH (S.U.) Instantaneous Maximum	7.1	7.1	6.6	6.5	6.7	6.7	6.8	6.8	7.5	7.6	7.1	6.9
DO (mg/L) Minimum	4.5	3.9	3.8	4.4	4.2	4.0	4.6	4.6	6.7	4.8	5.3	4.8
TRC (mg/L) Average Monthly	< 0.07	< 0.06	< 0.04	< 0.03	< 0.03	< 0.2	0.05	0.06	0.07	< 0.06	0.06	0.04
TRC (mg/L) Instantaneous Maximum	**0.230**	**0.150**	**0.100**	**0.080**	**0.060**	**0.080**	**0.130**	**0.130**	**0.140**	**0.150**	**0.110**	**0.120**
CBOD5 (lbs/day) Average Monthly	< 11.7	< 15.4	< 14.3	13.9	14.4	< 15.4	< 14.7	< 29.1	< 20.4	< 16.3	< 15.8	< 10.9
CBOD5 (lbs/day) Weekly Average	12.4	< 21.0	19.7	16.5	17.3	19.2	15.9	51.2	31.2	< 18.3	< 18.0	< 12.2
CBOD5 (mg/L) Average Monthly	< 2.1	< 2.3	< 2.4	2.4	2.5	< 2.4	< 2.0	< 3.9	< 2.6	< 2.1	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	2.3	< 3.0	3.3	2.8	3.2	2.7	2.1	7.2	3.8	2.3	< 2.0	< 2.0
BOD5 (mg/L) Influent Average Monthly	82.0	56.7	13.0	200.0	147	106	197.0	64.3	52.4	58.3	41.9	208.0
TSS (lbs/day) Average Monthly	< 18.3	< 23.6	< 21.5	< 18.7	< 38.3	< 25.7	< 23.7	< 32.8	< 25.1	< 27.2	< 39.7	< 24.6
TSS (lbs/day) Weekly Average	21.5	31.7	26.1	< 21.6	72.5	45.7	30.2	74.1	32.9	36.1	74.6	56.0
TSS (mg/L) Average Monthly	< 3.3	< 3.5	< 3.6	< 3.3	< 6.6	< 4.0	< 3.3	< 4.2	< 3.3	< 3.5	< 5.2	< 4.5

TSS (mg/L) Influent Average Monthly	31.0	62.0	67.8	142.0	52	53	88.0	170.0	46.0	70.0	16.0	254.0
TSS (mg/L) Weekly Average	4.0	5.0	5.0	4.0	13.0	7.0	4.0	9.0	4.0	5.0	9.0	10.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 2	< 2	< 4	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 2	< 2	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 1	< 1
Nitrate-Nitrite (mg/L) Average Monthly	6.86	5.51	1.56	8.05	9.29	4.79	2.68	4.83	5.14	5.29	5.49	10.3
Total Nitrogen (mg/L) Average Monthly	6.86	5.51	1.56	9.35	9.29	1.02	2.06	4.83	5.14	5.29	5.49	10.3
Ammonia (lbs/day) Average Monthly	**1**	**1**	**2**	**1**	**1**	**2**	**4**	**1**	**1**	**0.9**	**< 2**	**< 0.6**
Ammonia (mg/L) Average Monthly	**0.19**	**0.22**	**0.27**	**0.25**	**0.19**	**0.25**	**0.6**	**0.13**	**0.13**	**0.12**	**< 0.22**	**< 0.12**
TKN (mg/L) Average Monthly	< 1.0	< 1	1.05	1.3	< 1.00	1.02	2.06	< 1	< 1	< 1	< 1	< 1
Total Phosphorus (lbs/day) Average Monthly	6	6	7	7	7	4	9	3	7	5	4	3
Total Phosphorus (mg/L) Average Monthly	0.95	0.78	1.41	1.3	1.55	0.64	1.15	0.42	0.79	0.52	0.42	0.52
Total Aluminum (mg/L) Average Monthly											< 0.02	
Total Copper (lbs/day) Average Monthly	< 0.06	< 0.07	< 0.06	< 0.06	0.07	< 0.1	< 0.08	0.04	< 0.09	< 0.1	< 0.2	< 0.09
Total Copper (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.02	0.011	0.005	< 0.012	< 0.01	< 0.29	< 0.02
Total Copper (mg/L) Daily Maximum	< 0.01	< 0.01	0.01	0.01	0.02	< 0.02	0.02	0.007	< 0.02	< 0.02	< 0.1	0.02
Total Iron (mg/L) Average Monthly											0.06	
Total Lead (lbs/day) Average Monthly	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.2	< 0.2	< 0.2	< 0.1	< 0.09
Total Lead (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.2	< 0.02

Total Lead (mg/L) Daily Maximum	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.2	< 0.02
Total Manganese (mg/L) Average Monthly											0.131	

DMR Data for Outfall 001 (from May 1, 2020 to April 30, 2021)

Parameter	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20
Flow (MGD) Average Monthly	0.715	0.601	0.604	0.592	0.535	0.709	0.718
Flow (MGD) Daily Maximum	1.149	1.139	0.837	0.903	0.822	1.167	1.192
pH (S.U.) Minimum	6.0	6.0	6.0	6.1	6.1	6.1	6.1
pH (S.U.) Instantaneous Maximum	6.9	7.2	7.0	7.8	6.9	7.1	7.0
DO (mg/L) Minimum	4.8	3.9	4.6	3.2	4.8	4.8	5.4
TRC (mg/L) Average Monthly	**0.04**	**0.05**	**0.05**	**0.05**	**0.05**	0.05	0.06
TRC (mg/L) Instantaneous Maximum	**0.120**	**0.080**	**0.150**	**0.140**	**0.100**	0.140	0.200
CBOD5 (lbs/day) Average Monthly	< 10.9	< 9.2	< 10.0	< 13.3	< 8.9	< 10.3	< 11.6
CBOD5 (lbs/day) Weekly Average	< 12.2	< 10.2	11.6	< 16.8	10.2	< 13.2	< 16.0
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.1	< 2.6	< 2.1	< 2.0	< 2.0
CBOD5 (mg/L) Weekly Average	< 2.0	< 2.0	2.3	< 4.0	2.5	< 2.0	< 2.0
BOD5 (mg/L) Influent Average Monthly	**208.0**	**198.0**	**140.0**	**91.3**	**176.0**	**111.0**	103.0
TSS (lbs/day) Average Monthly	< 24.6	< 5.9	< 7.7	9.1	4.3	< 12.1	< 7.0
TSS (lbs/day) Weekly Average	56.0	< 10.2	10.1	22.5	4.8	26.3	9.5

TSS (mg/L) Average Monthly	< 4.5	< 1.3	< 1.6	1.5	1.0	< 2.6	< 1.3
TSS (mg/L) Influent Average Monthly	**254.0**	**173.0**	**128.0**	**140.0**	**170.0**	**70.0**	62.0
TSS (mg/L) Weekly Average	10.0	< 2.0	2.0	3.0	1.0	7.0	2.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 1	< 7	< 1	< 2	< 1	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	< 1	250	< 1	10	< 1	10
Nitrate-Nitrite (mg/L) Average Monthly	10.3	15	10.9	6.4	8.83	7.77	4.48
Total Nitrogen (mg/L) Average Monthly	10.3	16.23	12.2	7.28	9.68	8.57	5.02
Ammonia (lbs/day) Average Monthly	< 0.6	< 0.5	< 0.5	6	< 0.4	< 0.5	< 0.6
Ammonia (mg/L) Average Monthly	**< 0.12**	**< 0.11**	**< 0.1**	**< 0.38**	**< 0.1**	**< 0.1**	**< 0.1**
TKN (mg/L) Average Monthly	< 1	1.23	1.3	0.88	0.85	0.8	0.54
Total Phosphorus (lbs/day) Average Monthly	3	7	14	5	5	5	5
Total Phosphorus (mg/L) Average Monthly	0.52	1.44	2.67	0.73	1.31	1.13	0.64
Total Aluminum (mg/L) Average Monthly							
Total Copper (lbs/day) Average Monthly	< 0.09	< 0.06	< 0.05	< 0.06	< 0.04	< 0.05	< 0.06
Total Copper (mg/L) Average Monthly	< 0.02	< 0.013	< 0.011	< 0.01	< 0.01	< 0.01	< 0.01
Total Copper (mg/L) Daily Maximum	**0.02**	**< 0.02**	**0.012**	**< 0.01**	**< 0.01**	**0.011**	**< 0.01**
Total Iron (mg/L) Average Monthly							
Total Lead (lbs/day) Average Monthly	< 0.09	< 0.06	< 0.3	< 0.06	< 0.04	< 0.05	< 0.06

Total Lead (mg/L) Average Monthly	**< 0.02**	**< 0.01**	**< 0.06**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**
Total Lead (mg/L) Daily Maximum	**< 0.02**	**< 0.02**	**0.1**	**< 0.01**	**< 0.01**	**< 0.01**	< 0.01
Total Manganese (mg/L) Average Monthly							

DMR Data for Outfall 001 (from June 1, 2019 to April 30, 2020)

Parameter	APR-20	MAR-20	FEB-20	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19
Flow (MGD) Average Monthly	**0.803**	0.673	0.708	0.630	0.629	0.669	0.571	0.395	0.657	**0.752**	**0.896**
Flow (MGD) Daily Maximum	1.331	0.958	1.222	1.022	0.975	1.174	1.286	0.565	0.898	0.994	1.132
pH (S.U.) Minimum	6.0	6.0	6.0	6.3	6.0	6.0	6.2	6.0	6.0	6.0	6.1
pH (S.U.) Instantaneous Maximum	6.7	6.9	7.0	7.1	6.9	6.9	7.0	7.5	7.8	7.2	6.9
DO (mg/L) Minimum	**4.6**	**4**	**5.3**	**5.4**	**5.3**	**4.0**	**3.8**	**3.9**	**5.5**	**3.0**	**4**
TRC (mg/L) Average Monthly	**< 0.04**	**0.05**	**0.04**	**0.07**	**0.07**	**0.07**	**0.06**	**< 0.06**	**< 0.05**	**< 0.07**	**0.1**
TRC (mg/L) Instantaneous Maximum	**0.130**	**0.230**	**0.120**	**0.270**	**0.140**	**0.150**	**0.160**	**< 0.150**	**0.160**	**0.190**	**0.129**
CBOD5 (lbs/day) Average Monthly	< 14.3	< 12.1	< 13.1	< 18.2	< 22.4	< 11.3	< 9.8	< 7.0	< 12.1	**51.4**	**28.4**
CBOD5 (lbs/day) Weekly Average	< 16.7	< 13.2	17.4	44.8	42.5	14.0	< 12.0	8.7	17.0	**155.6**	**37.5**
CBOD5 (mg/L) Average Monthly	< 2.1	< 2.0	< 2.2	< 3.2	< 4.3	< 2.2	< 2.3	< 2.2	< 2.2	8.1	3.8
CBOD5 (mg/L) Weekly Average	2.4	2.1	2.6	6.5	8.7	2.6	2.7	2.7	2.7	23.0	5.0
BOD5 (mg/L) Influent Average Monthly	**210.0**	**84.9**	**104.0**	**46.7**	**165.0**	**91.0**	**182.0**	**123.0**	**94.6**	**113.0**	**83.0**
TSS (lbs/day) Average Monthly	< 6.9	< 8.8	11.2	16.7	< 13.0	7.3	< 8.9	12.8	32.1	22.4	73.4
TSS (lbs/day) Weekly Average	< 8.3	12.4	27.6	29.4	29.3	**12.3**	13.8	**21.5**	**55.6**	34.2	118.7

TSS (mg/L) Average Monthly	< 1.0	< 1.5	1.8	3.2	< 2.5	**1.5**	< 2.2	**4.3**	**5.3**	3.6	9.8
TSS (mg/L) Influent Average Monthly	**74.0**	**74.0**	**98.0**	**108.0**	**97.0**	**86.0**	**136.0**	**133.0**	**72.0**	**74.0**	**96.0**
TSS (mg/L) Weekly Average	1.0	2.0	4.0	7.0	6.0	3.0	4.0	8.0	9.0	7.0	15.0
Fecal Coliform (CFU/100 ml) Geometric Mean	< 1	< 2	< 1	< 2	2	121	< 2	140	329	231	106
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	< 1	10	< 1	30	20	**1120**	10	**580**	**1870**	840	250
Nitrate-Nitrite (mg/L) Average Monthly	8.37	4.73	7.93	6.43	8.33	8.2	13.7	10.6	7.77	1.41	6.98
Total Nitrogen (mg/L) Average Monthly	9.2	5.77	8.85	7.17	10.0	9.42	14.97	11.61	8.73	10.04	8.34
Ammonia (lbs/day) Average Monthly	< 0.7	< 0.6	< 0.6	< 0.5	< 0.6	< 0.5	< 0.4	< 0.6	< 0.6	< 16	< 4
Ammonia (mg/L) Average Monthly	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.18**	**< 0.1**	**< 2.73**	**< 0.59**
TKN (mg/L) Average Monthly	0.83	1.04	0.92	0.74	1.67	1.22	1.27	1.01	0.96	8.63	1.32
Total Phosphorus (lbs/day) Average Monthly	9	4	7	5	6	6	6	6	5	9	10
Total Phosphorus (mg/L) Average Monthly	1.2	0.57	1.25	0.83	1.24	0.92	1.85	1.48	0.74	1.26	1.28
Total Aluminum (mg/L) Average Monthly					0.03						
Total Copper (lbs/day) Average Monthly	< 0.07	< 0.06	< 0.06	< 0.05	< 0.06	< 0.05	< 0.05	< 0.04	< 0.06	< 0.07	0.1
Total Copper (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.013	< 0.013	< 0.01	< 0.011	0.018
Total Copper (mg/L) Daily Maximum	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.011	0.019	0.019	0.011	0.013	0.024
Total Iron (mg/L) Average Monthly					0.09						
Total Lead (lbs/day) Average Monthly	< 0.07	< 0.06	< 0.06	< 0.05	< 0.06	< 0.05	< 0.04	< 0.03	< 0.06	< 0.06	< 0.07

Total Lead (mg/L) Average Monthly	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**
Total Lead (mg/L) Daily Maximum	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**
Total Manganese (mg/L) Average Monthly					0.016						

Compliance History

Effluent Violations for Outfall 001, from: July 1, 2019 To: November 30, 2020

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	08/31/19	Geo Mean	329	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	07/31/19	Geo Mean	231	CFU/100 ml	200	CFU/100 ml
Fecal Coliform	08/31/19	IMAX	1870	CFU/100 ml	1000	CFU/100 ml

Summary of Inspections:

CLIENT	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	# OF VIOLATIONS
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	3196906	07/01/2021	Administrative/File Review	Violation(s) Noted	5
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	3214014	07/01/2021	Combined Sewer Overflow-Non-Sampling	Violation(s) Noted	4
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2416804	05/26/2021	Routine/Partial Inspection	Repairs or Upgrade Required	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2438107	03/11/2020	Routine/Partial Inspection	Violation(s) Noted	1
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2412783	07/11/2019	Complaint Inspection	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2523493	11/15/2018	Routine/Partial Inspection	Repairs or Upgrade Required	0

SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2472206	12/19/2017	Routine/Partial Inspection	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2676422	08/16/2016	Compliance Evaluation	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	3214850	08/16/2016	Routine/Partial Inspection	Viol(s) Noted & Immediately Corrected	1
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2464551	03/15/2016	Routine/Partial Inspection	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2804480	03/01/2016	Routine/Partial Inspection	Violation(s) Noted	3
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	3009817	12/10/2015	Compliance Evaluation	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2920370	12/01/2015	Compliance Evaluation	No Violations Noted	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2500654	10/07/2015	Routine/Partial Inspection	Violation(s) Noted	1
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2352597	09/09/2015	Compliance Evaluation	Repairs or Upgrade Required	0
SAINT CLAIR BORO SEW AUTH SCHUYLKILL CNTY	WPCNP	2523397	03/16/2015	Combined Sewer Overflow-Non-Sampling	Repairs or Upgrade Required	0

*7/1/2021 Inspection report cited: Increased discharge of pollutants without DEP approval, i.e. use of swimming pool chlorine tablets without permission instead of previously permitted chlorine disinfection (emergency use only) system. Requirement to report CSO discharge duration and quantity reporting via EDMR. Need to submit the Available Operator Report due to changes in employment. SCSA thought chlorine was entering collection system, and indicated it would investigate. The CSO Outfall No. 002 flow meter was reported scheduled to be calibrated. **NOTE**: No CSO Outfall No. 002 calibration Report in 2021 or 2022 Chapter 94 Reports.
**7/2/2021 Inspection Report cited: Failure to properly complete monitoring reports (missing volume and duration reporting); failure to properly operate and maintain CSO Structures 006 and 008 (build-up of debris on screens); failure to implement NMCs due to unpermitted influent slide gate (used to throttle influent flows resultant discharges vis CSO Outfall No. 002, and LTCP Plan requirement for WQM permit application if proposed in future); and failure to submit NPDES Permit-required Sewage Sludge Management Inventory. Noted previous CSO Outfall No. 002 dry weather inspections had reported debris, solids, and odors, but it was not visible during inspection due to heavy vegetation and precipitation/discharge event. The report noted CSO Outfall No. 002 “should be calibrated as soon as possible and the flows reported by EDMR as required.

Other Comments:

- **3/29/2021 Notice of Violation:** Issues included:

- **Late Renewal Submittal:** A complete and technically adequate NPDES Permit Renewal Application was due 7/4/2020. The 7/9/2020 submittal was late and fundamentally incomplete (missing required information and LTCP Update). Not complete until 12/22/2020. **NOTE:** The LTCP was missing 2017 LTCP Approval with Condition Letter-required information and documentation noted in the 3/21/2021 Technical Deficiency Letter.
- **Failure to Meet the 4 CSO Events/Year CSO LTCP Goal:** 70 events were reported in 2019. See 2022 Annual CSO Status Report-related comments for discussion of CSO events and conflicting (inaccurate) reporting of CSO Outfall No. 002 discharges and failure to install an EPA-approved methodology of detecting dry weather/off-hour discharges.
- **Failure to Meet NPDES Permit Part C.II.G LTCP Implementation Schedule Milestones**: Late submittals of CSO Flow Monitoring Study Plan report, Stream Water Quality Monitoring Plan start, Second LTCP Update.
- **Unauthorized Throttling of Influent Flows to Headworks as contrary to existing NPDES Permit Language and approved-with-conditions 2017 Long Term Control Plan**: See 2022 Annual CSO Status Report-related comments above.
- **Fecal Coliform exceedances**: See DEP Inspection Report that indicates the facility was using supplemental chlorine disinfection (not authorized by permit).

- **EDMR and application data appears to show compliance issues:**
  - **EDMR/DMR Submittals:** The 2020 NPDES Permit renewal application contained updated CSO Supplemental Forms to address duration of CSO discharges (NPDES Permit requirement), but it is unclear if EDMR was updated.
  - **Chlorine in Effluent:** Despite upgrade to UV disinfection (circa early 2018) and WQM permit language restricting chlorine usage to emergency disinfection, EDMR indicated continued TRC presence in effluent. Authority indicates it has not been using chlorine disinfection but is unaware of source. Application reported max (1.00 mg/l) exceeds TRC IMAX limit (post-UV upgrade). 8/4/2018, 8/23/2018. 8/21/2018 was "<1.00" (exceedance per EPA Sufficiently Sensitive Rule), and missed 8/13 sampling for anything.
  - **Apparent Plant Upsets or Interference:** Application data on Ammonia-N (**32.86/72.56 mg/l min/max; 51.34 mg/l average of 27 samples per effluent table**) conflicts with 12-months of monthly average EDMR data and reported monthly average TN values for same sampling time-frame (plus application of WQ sampling data ranging from 0.050 mg/l min to 6,830 mg/l max, 0.316 mg/l average for 2018 – 4/30/2020 sampling results), and would indicate potential future IMAX violations even if they took additional samples to lower the monthly average value (but the application data shows no such additional sampling).
  - **Lead spiking despite no identified Industrial Source:** Application lead values ranged from 0.100 mg/l max and 0.016 mg/l average – indicating AMD-impacted groundwater entering the collection system in the absence of any Application-identified Industrial User. Their Application table summarizing 2018 – 4/302020 weekly sampling data included insensitive concentration data (<0.006, <0.01; 0.1 mg/l)
  - **Missing Supplemental Form:** Did not find required Stream Monitoring WQ Reporting in the available EDMR/DMR files. Data reporting (with sample form) required by 2/17/2017 DEP Approval with Conditions Letter**.**
- **Chapter 94 Report Issues:** See Treatment Plant Section (above) for comments on deficient Chapter 94 Reports and deficient Annual CSO Status Reports and hydraulic overloading/potential bypassing issues.
- **CSO Related Issues:**
  - **4 CSO Events/Year LTCP Presumption Goal (narrative WQBEL):** Not met in 2018-2023. See Treatment Section for Annual CSO Status Report information. Also, incorrect CSO event definition resulted in a "37-day CSO event" (February – March 2018) and/or reporting each day's discharge as a separate CSO Event in different submittals. (See Treatment Plant Section above for Annual Report information).
  - **85% LTCP Presumption Goal (Narrative WQBEL): "Elimination or capture of 85% by volume of the combined sewage collected in the combined sewer system during precipitation events on a system-wide annual average basis".** Not met in 2018. Uncertainties about 2019 – 2022 due to failure to subtract Separated Sewer System area I&I flows (from 53% of collection system per LTCP).
    - Volume and Frequency of CSO Outfall No. 002 discharges in 2018 for information purposes: 84% of ~111 MG total 2018 CSO discharge flow discharged via CSO Outfall No. 002 during 203 days, including many days when WWTP effluent flow was below 0.75 MGD hydraulic capacity (NPDES Permit Part A.I.B and Part C.II.A.1) or 1.0 MGD Max daily design flow (NMC for maximizing flow to WWTP applies).
    - See Treatment Plant Section above for Annual Report information.

- **CSO Outfall/WWTP Headworks Influent Control Valve Used to Divert Flows: Apparent bypassing without Department approval.** The 2017 LTCP Approval with Conditions Letter did not authorize use of any control valve to throttle WWTP influent flows in the absence of a Part II WQM Permit Application explicitly authorizing such usage. No application received to date.
  - It was not approved as part of the Approved LTCP: The 2/11/2017 LTCP Letter indicated they could submit a Part II WQM Permit application if they could show it would meet all CSO-related requirements). The LTCP Attachment 3 (Treatment Plant Design Drawings (Partial)) Drawing C-5 (Proposed Site Plan) did not show any CSO Sluice Gate or new CSO control.
  - Previous WQM Permitting: The new control valve was not proposed for this usage in the last WQM Permit Application (with control valves commonly used in headworks maintenance). As a CSO control device, not part of WQM permit-approved design, it is a significant construction deviation.
    - They failed to flag the control valve as a significant deviation in the construction certification (either narrative or drawings) per WQM Permit Condition.
    - They failed to submit a NPDES Part A.III.C.1 (Planned Changes to Physical Facilities) written notification for such a proposed new control.
- **Apparent Dry Discharge periods during 2018 CSO Flow Study:** CSO events and authorized CSO discharges are tied to stormwater flows, not groundwater infiltration flows per NPDES Permit Part A.I.B. They identified one 37-day CSO Events in February-March 2018 which included assorted three-day periods of zero or minimal 0.01 -0.05-inch rain during 2018 with CSO Outfall No. 002 discharges including. These situations cropped up multiple times in 2018:
  - 2/12-2/14
  - 2/26-/2/28
  - 3/4-3/6
  - 5/24-5/26
  - 7/26-7/28
  - See Treatment Plant Section above for Annual Report information
- **Failure to Address All CSO reporting requirements:** Duration of CSO discharges required. They updated some CSO reports in 2021 LTCP Update, but unclear if they updated EDMR. (See Treatment Plant Section above for additional CSO Monitoring Report deficiencies).
- **Annual CSO Status Report Issues:** See Treatment Plant Section comments relative to Chapter 94 Reports/Annual CSO Reports.
- **The 2018 DMR forms conflicted with 2018 CSO Study Report information in terms of CSO discharges**:
  - There were 4 discharges of CSO Outfall No. 003 per flow study contrary to January Report claim of none. Other outfalls discharges were also missed. Their methodology of determining no discharge is clearly inadequate. This problem means that future discharges might require a flow meter to catch all CSO discharges.
  - The CSO Monthly Inspection Report comment section and CSO Detailed Outfall Report referenced “Attachment 2” “DMR for CSOs” which is not the existing NPDES Permit-required supplemental form. They need to complete the CSO Supplemental forms in the current NPDES Permit with all required information on the current form on all columns (including comment section).
  - They are still not providing form required data (Discharge MG, using inches of CSS flow in pipe without using 1995 correlation at best (sometimes marked “unknown”), CSO Flow Study-proposed correlation or CSO Flow Study actual data). They did not indicate that they looked at receiving stream for unacceptable conditions, etc.
  - The CSO Detailed Outfall Report precipitation data does not match the CSO Flow Study data (i.e. CSO Flow Study measured precipitation on days where the report indicated no precipitation). If they use the proposed new hydraulic correlation method to precipitation, then they have to report EVERY precipitation event.
  - If the Supplemental reports were used, they would have come up with a different number of CSO events than the CSO Flow Study due to unreported discharges and lack of reporting of minor precipitation events (as they are not reporting down to 0.01-inch precipitation events).

- Rain or snow melt is a dubious cause for 18 days of reported CSO Outfall No. 002 discharge in February 2018.
- See Treatment Plant Section above for Annual Report information.

- **Chapter 94 Hydraulic Overloading: Hydraulic overloading in 2018-2019 and 2020-2021:**
  - **2018**: SCSA admitted hydraulic overloading but later blamed defective flow measurements for record year of precipitation.
  - **2019 Hydraulic Overloading**: EDMR Data (Jan through November) indicated January -June 2019 (6 months straight) Hydraulic Overloading based on reported monthly average flows. SCSA admitted hydraulic overloading but later blamed defective flow measurements for high precipitation time-frame.
  - **December 2020 – May 2021 Overloading**: Reported 2021 and 2022 Chapter 94 Reports, hydraulic overloading projected for next 5 years.
  - **Other Overloading**: See Treatment Section for related information and other comments (including likelihood of additional hydraulic overloading).

- **Compliance History**: The 5/10/2023 "Open violations by Client number" indicated the following nine (9) open violations:

INSP PROGRAM	PROGRAM SPECIFIC ID	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
WPC NPDES	PA0025224	3196906	918381	05/26/2021	92A.75(A)	NPDES - Failure to submit NPDES renewal application at least 180 days prior to expiration or later approved date
WPC NPDES	PA0025224	3196906	918382	05/26/2021	92A.46	NPDES - Violation of Part C permit condition(s)
WPC NPDES	PA0025224	3196906	918383	05/26/2021	92A.44	NPDES - Violation of effluent limits in Part A of permit
WPC NPDES	PA0025224	3196906	918384	05/26/2021	92A.51	NPDES - Failure to comply with a compliance schedule in an NPDES permit
WPC NPDES	PA0025224	3196906	918385	05/26/2021	92A.41(A)13B	NPDES - Unauthorized bypass occurred
WPC NPDES	PA0025224	3214014	922224	07/01/2021	CSO-NMC1	NPDES CSO - 92A.47(B)NMC1 Failure to implement required NMC #1(Proper operation and maintenance)
WPC NPDES	PA0025224	3214014	922225	07/01/2021	CSO-NMC1	NPDES CSO - 92A.47(B)NMC1 Failure to implement required NMC #1(Proper operation and maintenance)
WPC NPDES	PA0025224	3214014	922226	07/01/2021	CSO-NMC4	NPDES CSO - 92A.47(B)NMC4 Failure to implement required NMC #4 (Maximization of flow)
WPC NPDES	PA0025224	3214850	922299	07/01/2021	92A.24(A)	NPDES - Increased discharge of pollutants or new pollutants discharged without DEP approval

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .75
Latitude 40º 42' 24.29" **Longitude** -76º 10' 35.76"
Wastewater Description: Sewage Effluent

Permit Limits & Monitoring:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	156.0 (lbs/d) 250.0 (lbs/d) 25.0 40.0 50.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. Anti-backsliding does not allow for less stringent mass load limits. Application data: 23 mg/l max and 2.64 mg/l average (118 samples).
TSS	187.6 (lbs/d) 281.4 (lbs/d) 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47). Application data: 17.0 mg/l max and 3.13 mg/l average (118 samples).
pH	6.0 – 9.0 SU	**Inst.** Min - IMAX	Existing Technology limit (Chapter 92a.47) Application data: 6.0 -7.8 SU (850 samples).
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47) Application data: 1/100 ml – 2000/100 ml (850 samples)
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above
Total Residual Chlorine	**0.500** 0.750	Average Monthly IMAX	Facility has upgraded to UV disinfection during previous permit term (i.e. post-upgrade existing limits pertain). 2016 WQM Permit No. 5406402 Special Condition A forbade chlorine usage except for emergency disinfection. Application/EDMR data indicated continued presence of TRC in effluent, with the Authority unable to identify source. **Going to daily monitoring in absence of source identification per Part A.I.C footnote. Antibacksliding does not allow for relief on existing IMAX limit.** Application data: **1.00 mg/**l max (exceedance) and 0.065 mg/l average (850 samples). See EDMR tables for apparent continuous chlorine disinfection usage.
Ammonia-Nitrogen (May 1 - Oct 31) **(Interim)**	Report (lbs/d) **Report (lb/d)** 24.7 **49.4** 49.4	Monthly Average **Daily Max** Monthly Average **Daily Max** IMAX	Existing interim summer limits. Application data**: 72.56 mg/l max and 51.34 mg/l average and 32.86 mg/l min (27 samples). Potential IMAX exceedances. EDMR shows compliance (but is reporting monthly average values only).**

Ammonia-Nitrogen (Nov 1 - Apr 30)	Report (lbs/d) **Report (lbs/d)** Report **Report**	Monthly Average **Daily Max** Monthly Average **Daily Max**	Existing monitoring requirement with expanded reporting.
Ammonia-Nitrogen **(May 1 - Oct 31)** **(Final)**	**Report (lbs/d)** Report (lbs/d) **13.1** **26.2** **26.2**	**Monthly Average** Daily Max **Monthly Average** **Daily Max** **IMAX**	**New WQBEL per water quality modeling incorporating revised Ammonia-N Water Quality Criteria, with interim monitoring.** Application data**: 72.56 mg/l max and 51.34 mg/l average and 32.86 mg/l min (27 samples). Potential IMAX exceedances. EDMR shows compliance (but is reporting monthly average values only).**
Dissolved Oxygen (DO)	**3.0**	**Inst. Minimum**	**New WQBEL from water quality modeling. Previously monitoring only requirement (Chapter 92a.61). Effective immediately as treated sewage should meet this limit, with EDMR data showing compliance.**
Total Phosphorus	Report (lbs/d) Report (lbs/d) **Report** Report	Monthly Average Daily Max **Monthly Average** Daily Max	Existing Monitoring requirement (with expanded reporting). Application data: 1.98 mg/l max and 1.05 mg/l average (28 samples)
Total Nitrogen (TKN + Nitrate-Nitrite-N measured in same sample)	**Report (lbs/d)** **Report (lbs/d)** Report **Report**	**Monthly Average** **Daily Max** Monthly Average **Daily Max**	Existing Monitoring requirement (with expanded reporting). Application data: Total Nitrogen: 14.9 mg/l max, 5.7 mg/l minimum, and 8.90 mg/l average (28 samples). TKN: 8.6 mg/l max, 0.6 mg/l min, 1.4 mg/l average (27 samples). Nitrate-Nitrite-N: 13.7 mg/l max, 1.41 mg/l min, 7.4 mg/l average (27 samples).
Manganese, Total **Iron Total**	**Report (lbs/d)** **Report (lbs/d)** Report **ug/l** **Report ug/l**	**Monthly Average** **Daily Max** Monthly Average **Daily Max**	**Increased monthly monitoring requirement due potential AMD-contaminated I&I/CSS contributions during peak wet weather flows with a receiving stream with limited/zero assimilative capacity.** Application data: Al: ND (1 sample) Total Iron: 0.06 mg/l (1 sample) Manganese: 0.03 mg/l (1 sample)
Aluminum, Total	**Report (lbs/d)** **4.69 (lbs/d)** **Report ug/l** **750.0 ug/l** **750.0 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs due to Reasonable Potential Analysis in effect in three years, with interim monitoring.** Application data: ND (1 sample)
Copper, Total	**0.16 (lbs/d)** **0.21 (lbs/d)** **25.4 ug/l** **34.0 ug/l** **63.5 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs due to Reasonable Potential Analysis in effect in three years, with interim monitoring.** Application data: 0.024 mg/l max, <0.010 mg/l average (114 samples)

Lead, Total	**0.060 (lbs/d)** **0.093 (lb/d)** **9.58 ug/l** **14.9 ug/l** **23.9**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBELs due to Reasonable Potential Analysis in effect in three years, with interim monitoring.** Application data: <0.01 mg/l max, <0.016 mg/l average (114 samples)
Zinc, Total	**Report (lbs/d)** **Report (lbs/d)** Report **ug/l** **Report ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**Minimum monthly monitoring requirement per Reasonable Potential Analysis.** Application data: 0.06 mg/l (1 sample)
BOD5 Reduction	**Report %**	**Minimum Monthly Average**	**Monitoring with foot note referencing existing Part A.I Additional Requirements Item 2 narrative Technology-Based Effluent Limit (85%) unless they provide. technical justification for Chapter 92a.47(g, h) relief. Part A note that relief can be granted via LTCP Update.**
TSS Reduction	**Report %**	**Minimum Monthly Average**	**Monitoring with foot note referencing existing Part A.I Additional Requirements Item 2 narrative Technology-Based Effluent Limit (85%) unless they provide. technical justification for Chapter 92a.47(g, h) relief. Part A note that relief can be granted via LTCP Update.**

Comments:

- **General**:
  - Including additional mass loading and daily max reporting. No additional sampling required.
  - Daily Max limit set equal to existing/new IMAX limits as any exceedance of any duration is a violation of the IMAX limit.
  - Updated Fecal Coliform units and grab sampling units to current EDMR/ICIS requirements.
  - 24-hour composite sampling will be required to eliminate biasing of 8-hour composite sampling.
- **IMP Outfall No. 101**: Created new IMP No. 101 (influent monitoring point at headworks) to address influent monitoring:
  - Existing BOD5 & TSS influent monitoring a
  - Added influent flow monitoring (monthly average and IMAX) needed due to CSO issues.
  - Monitoring upon request for metals due to potential CSO informational requirements.

- **Reasonable Potential Analysis**:
  - SCSA indicated no IUs discharging any non-domestic wastewater to the SCSA WWTP. There are a number of IW Stormwater NPDES GPs in the apparent collection system area including: Leed Foundry (NPDES Permit No. PAR202244); EJ USA, INC. - ST. CLAIR FABRICATION (NOEX No. NOEX13102); HEXCEL POTTSVILLE CORP (NOEX No. NNOEX13602; D G YUENGLING & SON, INC. (NPDES Permit No. PAG032210). SCSA has only stated that Yuengling discharges elsewhere.
  - Due to expected AMD contributions from I&I/CSS peak wet weather flows, monitoring requirements for Total Manganese and Total Iron added.

☑ ***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 Aluminum	Report	4.69	Report	750	750	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.16	0.21	25.4	34.0	63.5	µg/L	25.4	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Lead	0.06	0.093	9.58	14.9	23.9	µg/L	9.58	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	124	AFC	Discharge Conc > 10% WQBEL (no RP)

SCSATMS1.pdf

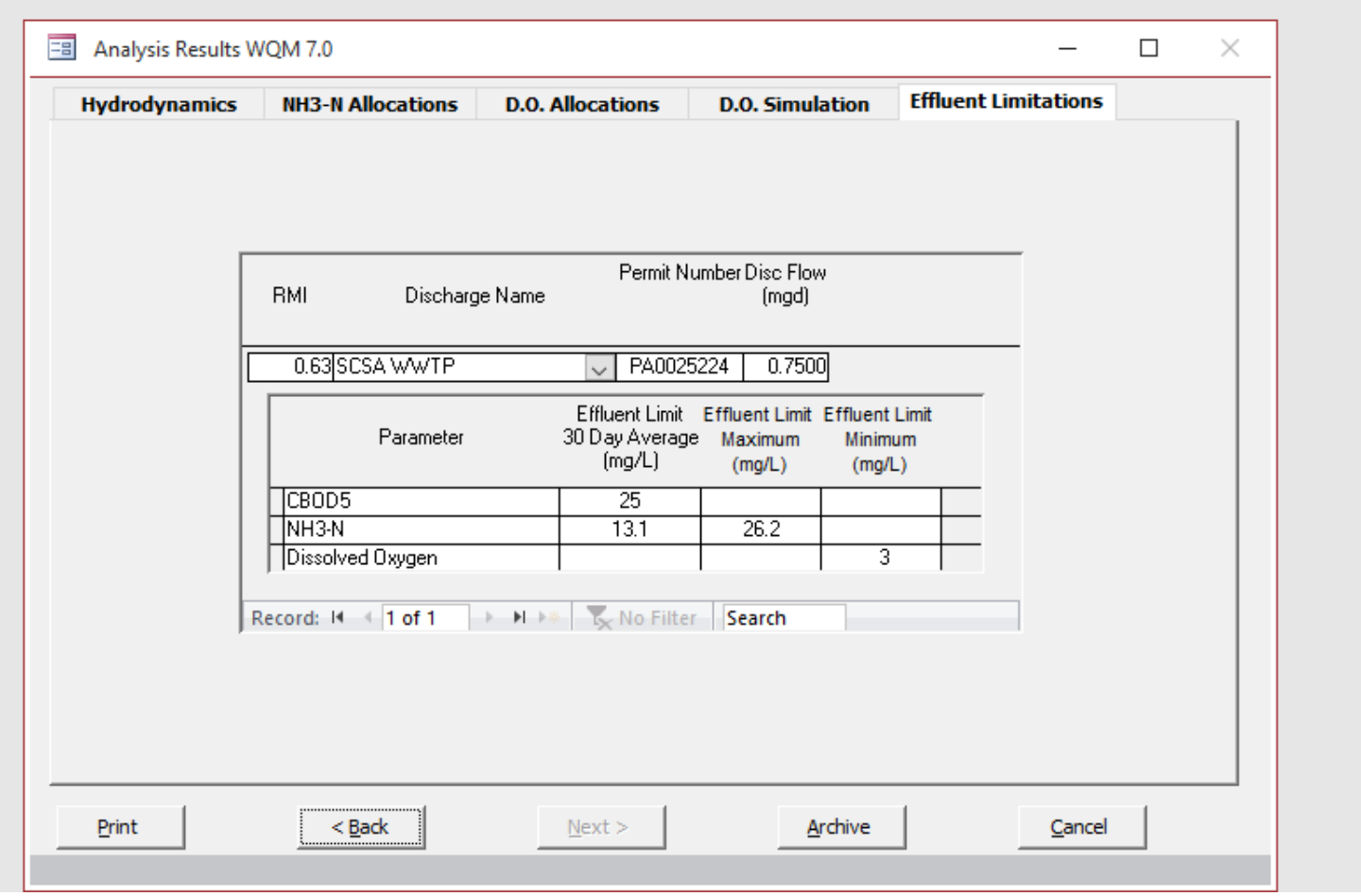
TOXCONC Spreadsheet Output (to calculate LTAMEC and daily COV):

		Reviewer/Permit Engineer:	James Berger
Facility:	St. Clair Sewer Authority		
NPDES #:	PA0025224		
Outfall No:	001		
n (Samples/Month):	4		
Parameter	**Distribution Applied**	**Coefficient of Variation (daily)**	**Avg. Monthly**
Copper (mg/L)	Delta-Lognormal	0.2856715	0.0146937
Lead (mg/L)	Delta-Lognormal	#DIV/0!	#DIV/0!

TRC Spreadsheet:

TRC EVALUATION					
Input appropriate values in A3:A9 and D3:D9		SCSA WWTP			
5.34	= Q stream (cfs)	0.5	= CV Daily		
0.75	= Q discharge (MGD)	0.5	= CV Hourly		
4	= no. samples	0.903	= AFC_Partial Mix Factor		
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor		
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)		
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)		
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)		
Source	Reference	AFC Calculations		Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 1.345		1.3.2.iii	WLA cfc = 1.442
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.501		5.1d	LTA_cfc = 0.839
Source		Effluent Limit Calculations			
PENTOXSD TRG	5.1f	AML MULT = 1.720			
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ	
		INST MAX LIMIT (mg/l) = 1.170			

WQM Model 7.1 Output:



SCSAWQMModel.pdf

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0 (CSO outfall)
Latitude 40º 42' 26.00" **Longitude** -76º 10' 35.00"
Wastewater Description: Combined Sewer Overflow

Permit Limits & Monitoring: **New Part A CSO Outfall No. 002 monitoring & Reporting requirements**.

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
Flow	Report MGD Report (MGD)	Monthly Average Daily Max	Reporting with new flow meter as main CSO Outfall discharge (>84 MG and 203 discharge days in 2018). CSO Outfall M&R is an existing requirement.
Duration of Discharge	Report hours Report hours	Total Monthly Max weekly	Reporting for intermittent discharges as part of CSO monitoring. M&R is an existing requirement.
pH	Report – Report (SU)	Inst. Min - IMAX	Monitoring to gather data for NPDES Permit and future LTCP PCCM updating. Monitoring also required for potential TMDL updating due to magnitude of CSO Outfall No. 002 discharges.
Fecal Coliform	Report (#/100 ml)	IMAX	See above.
E Coli	Report (#/100 ml)	IMAX	See above
Rainfall (In)**	Report (inches)	Total Daily	See above.
Total Residual Chlorine	Report Report	Average Monthly IMAX	Monitoring in case future LTCP Update includes chlorine disinfection only.
Aluminum, Total	Report lb/d Report lb/d Report ug/l Report ug/l	Annual Average Daily Max Annual Average Daily Max	Annual monitoring to gather information for NPDES Permitting and LTCP Update. The CSO is discharging to AMD-impaired streams. Monitoring also required for potential TMDL updating due to magnitude of CSO Outfall No. 002 discharges.
Iron, Total	Report lb/d Report lb/d Report ug/l Report ug/l	Annual Average Daily Max Annual Average Daily Max	See above.
Manganese, Total	Report lb/d Report lb/d Report ug/l Report ug/l	Annual Average Daily Max Annual Average Daily Max	See above
Copper, Total	Report lb/d Report lb/d Report ug/l Report ug/l	Annual Average Daily Max Annual Average Daily Max	Annual monitoring to gather information for NPDES Permitting and LTCP Update. Reasonable Potential Analysis indicated this is a constituent of concern, with CSO Outfall No. 002 discharge of magnitude contributing to potential exceedances.
Lead, Total	Report lb/d Report lb/d Report ug/l Report ug/l	Annual Average Daily Max Annual Average Daily Max	See above
Zinc, Total (ug/l)	Report lb/d	Annual Average	See above.

	Report lb/d Report ug/l Report ug/l	Daily Max Annual Average Daily Max	

Comments:

- CSO Outfall No. 002: This is the main CSO Outfall, located prior to WWTP headworks (accounting for ~84 percent of all 2018 CSO discharges during CSO Flow Study; >84 MG). A flow meter has been installed, allowing for flow monitoring. The WWTP includes a rain-gage allowing for site-specific rainfall reporting. Application and LTCP Update missing requested CSO Outfall sampling data. See LTCP Section for more information.
- Other CSO Outfalls: No Part A monitoring requirements for CSO Outfalls Nos. 003-006, and 008 (subject to other reporting requirements). See LTCP Section for more information. The Department will reevaluate any need for flow meters or sampling in the next NPDES Permit Renewal. In terms of discharge locations by NHD extrapolation from provided coordinates. See CSO section below for more information on the various CSOs.
- Other Requirements: See Part A.I.F (IDENTIFICATION OF COMBINED SEWER OVERFLOW DISCHARGES), Part A.I Additional Requirements narrative Technology-Based Effluent Limits (TBELs), Part C.III (Combined Sewer Overflow) monitoring requirements, NMC narrative Technology-Based Effluent Limits (TBEL), and LTCP Goal Water Quality-Based Effluent Limit (WQBEL) requirements.

CSO-Related Information and Analysis:

Table 1 (CSO Outfalls)

CSO Outfall	Latitude	Longitude	Other Information*
002 (MH-A)	40° 42' 26"	76° 10' 35"	Main discharge by WWTP headworks (entire collection system drainage area) discharging to UNT to Mill Creek. Discharge controlled by throttling valve (not approved by the 2017 Approved LTCP or permitting). ~84% of all CSO discharges during 2018 CSO Flow Study (111,061,925 gallons CSO discharges in total from all CSOs after assorted WWTP upgrades). CSO discharges lasted into the 3rd day of zero/minimal rainfall after significant rain event. 203 CSO discharge days; discharge at 0.09-inches rain. 255,644 gallons average discharge. The Outfall discharged after 0.09-inch rainfall events (without prior days of rainfall to surcharge collection/treatment plant) with discharges at lower rainfalls (with prior day rainfall surcharging). Began discharging 6 – 18 hours of precipitation event per modeling. 2019 Average Discharge Duration: 38 hours CSO Discharges at WWTP when manhole surcharges. 18-inch influent VCP Pipe (Elevation 654.22 Feet) and 18-inch C.I. effluent pipe (Elevation 658.20 Feet) at manhole at WWTP. 2012: 47 days of documented CSO discharges 2013: 36 days of documented CSO discharges. February 9 & 11, 2013 CSO discharges when no rainfall was documented in the preceding 48 hours. 2014: 38 days of documented CSO Discharges Per 5/16/2014 Telephone conversation, the consultant thought that the February 9 & 11, 2013 CSO discharges (when no rainfall was documented in the preceding 48 hours) was due to snow melt. 1995 Info: 1835 EDUs (100% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU (200 EDUs from separated sewer shed formerly CSO Outfall No. 002 (Arnot Addition).
003 (MH 10)	40° 42' 48"	76° 10' 06"	Began discharging 22-26 hours after precipitation started per modeling. 2019 Average Discharge Duration: 16 hours ~1% of total CSO discharge volume in 2018 flow study. Authority thinks a high groundwater table or high stream level impacts the hydraulics of the CSO effluent pipe. Only CSO with discharges on days when CSO Outfall No. 002 was not discharging in 2018. Estimated 10.906-acre sewer shed in CSO Flow Study Report. 121 CSO discharge days; discharge at 0.17-inches; 2,411 gallons average discharge. Mill Street & Caroline Street @ Mill Creek. 24-inch T.C. influent pipe and 24-inch concrete effluent pipe at manhole for CSO. Weir plate design (opening 3" by 8 1/2"). Depth of flow estimated at 0.04 feet. 2012: No documented CSO discharge 2013: 1 day of documented CSO discharge (0.8-inch rain) 2014: No documented CSO discharge 1995 Info: 156 EDUs (9% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU. 27-acre sewer shed.

004 (MH 11)	40° 42' 49"	76° 11' 07"	~10% of all CSO discharges during 2018 CSO Flow Study. Flow Study Report recommended for future upgrades due to large volume of overflows relative to other CSOs and due to its interconnection with upstream outfalls. There is an apparent hydraulic bottleneck at P18 (between CSO No. 005 and 004). Estimated 33.134 acres sewer shed in 2018 CSO Flow Study. 84 discharge days; discharge at 0.17-inches; 29,518 gallons average discharge Began discharging 24 hours after precipitation started per modeling. 2019 Average Discharge Duration: 13 hours Mill Street & Caroline Street @ Mill Creek. 42-inch concrete influent pipe and 42-inch effluent pipe (CSO) at manhole. Weir plate design (opening 3 ½" by 9 ½"). Depth of flow estimated at 0.20 feet. 2012: No documented CSO discharge 2013: No documented CSO discharge 2014: No documented CSO discharge 1995 Info: 449 EDUs (24% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU with 48-acre sewer shed.
005 (MH 14)	40° 42' 49"	76° 11' 09"	Began discharging 26 hours after precipitation started per modeling ~2% of total CSO discharge volume in 2018. 62.312-acre sewer shed per 2018 CSO Flow Study. 89 CSO discharge days; discharge at 0.28-inches; 5,079 gallons average discharge 2019 Average Discharge Duration: 11 hours Second Street @ Mill Creek.48-inch concrete influent pipe and 48-inch effluent pipe at manhole. Weir plate design (opening 3" by 9 ½"). Depth of flow estimated at 0.30 feet. 2012: No documented CSO discharge 2013: No documented CSO discharge 2014: 1 day of documented CSO discharge 1995 Info: 794 EDUs (43% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU with 50-acre sewer shed.
006 (MH 32)	40° 43' 05"	76° 11' 17"	Began discharging 26 hours after precipitation started per modeling. 2019 Average Discharge Duration: 6 hours ~4% of total CSO discharge volume in 2018. 8.014-acre sewer shed per 2018 CSO Flow Study. 69 CSO discharge days; discharge at 0.50-inches; 12,242 gallons average discharge**.** Front Street & East Railroad Street @ Mill Creek. 36-inch concrete influent pipe and 36-inch concrete effluent pipe. Weir plate design (opening 3 ½" by 9 ½"). Depth of flow estimated at 0.14 feet. 2012: No documented CSO discharge 2013: 1 day of documented CSO discharge (1.25 inch rain) 2014: 3 days of documented CSO discharge 1995 Info: 150 EDUs (8% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU with 19-acre sewer shed.
008 (MH 46)	40° 43' 14"	76° 11' 21"	Began discharging 26 hours or no discharge after precipitation started. 2019 Average Discharge Duration: 3 hours

			~0.07% of total CSO discharge volume in 2018. 8.449-acre sewer shed per 2018 CSO Flow Study. 26 CSO discharge days; discharge at 0.89-inches; 221 gallons average discharge Mill Street & East Carroll Street @ Mill Creek. 18-inch T.C. influent pipe and 18-inch concrete effluent pipe. Weir plate design (opening 3" by 9 ½"). Depth of flow estimated at 0.12 feet. 2012: No documented CSO discharge 2013: 1 day of documented CSO discharge (1.25-inch rain) 2014: 1 day of documented CSO discharge. 1995 Info: 86 EDUs (5% total) per 1995 Final Plan dry weather flow at 210 GPD/EDU with 9-acre sewer shed.

Table 2 (Tributary Areas)

Municipalities	Flow Contribution	Separated Sewer System*	Combined Sewer System	Population per application
Borough of St. Clair	83%	0% per application	100% per application	4,830
Norwegian Twp.	2%	0% per application	100% per application	116
East Norwegian & New Castle Twps.	15%	0% per application	100% per application	873

*53% estimated Separated Sewer System Areas in Authority collection system per LTCP. The following separated sewer areas shown on LTCP Figures:

- Coal Creek Plaza
- Woodland Terrace Subdivision
- Arnot's Addition: The 2013 Chapter 94 Report indicated that the "Arnot's Addition" section of town was rehabilitated and separated by slip-lining and pipe replacement in the 2003-2005 time-frame, with elimination of the former CSO Outfall #007.
- East Mines
- Fairlane Village Mall
- St Clair Industrial Park
- Route 61 Commercial
- Louisa Avenue Subdivision
- Future Growth Areas: Indicated as requiring Act 537 Planning. Separated Sewer Systems required for all new construction.
- Other Areas: The figures appear to indicate other unnamed areas outside of the defined CSO Outfall Nos. 003 through 006 and 008 Sewer Sheds. It is unclear if they are CSS areas draining directly to CSO Outfall No. 002 and/or additional unnamed Separated Sewer System Areas.

Other CSO-related Information:

- 2022 CSO Annual Status Report Current CSO Weir Settings:

CSO #	Location Description	Receiving Stream	Width of Cutout	Maximum Length of Cutout	1995 Study Minimum Weir Opening	Actual Opening Length
#002	MH-A	Mill Creek	Surcharge Type Manhole – No Plate			
#003	MH No. 10	Mill Creek	17 1/2"	16"	4.1"	9-1/8"
#004	MH No. 11	Mill Creek	20"	16"	5.1"	9-1/8"
#005	MH No. 14	Mill Creek	20"	16"	7.3"	7-1/2"
#006	MH No. 32	Mill Creek	20"	16"	2.1"	6-1/2"
#008	MH No. 46	Mill Creek	16"	16"	2.8"	6-1/2"

- **CSO Type**: CSO Outfall No. 002 is a surcharge type CSO. Other CSO outfalls controlled by weirs.
- **AMD in CSO Discharges**: Extensive legacy mining impacts in service areas, with AMD discharges to UNT and Mill Creek. AMD metals presumed in CSS and SSS I&I.
- **Pump Stations**: There are four pump stations in the collection system but is unclear if they service CSS areas due to permittee confusion between CSS and SSS areas. It is unclear if the following old data is still accurate:
  - East Mines PS: Average run-time of 2.60 pump hours/day (two pumps operating)
  - UPS PS: Average run-time of 1.82 pump hours/day (two pumps operating)
  - Reidler (Industrial Park #2) PS: Average run-time of 0.78 pump hours/day (two pumps operating)
  - Industrial Park #1 PS: Average run-time of 1.29 pump hours/day (two pumps operating)
- **CSO Flow Study Report Modeling Conclusions**: The Report used graphical analysis and a CSS simulation model calibrated by three CSO discharge events (0.52-inch, 0.11-inch/hour; 2.08-inch, 0.022 in/hr; 3.77-inch, 0.039 in/hr). The Department could not approve of modeling due to insufficient calibration. Some conclusions were not adequately supported. Additional information will be gathered in this NPDES Permit Term. Highlights:
  - **CSO Graphical Flow Model**: The purpose of this model was to allow for prediction of CSO discharges and duration. While the permittee believes the model outputs are conservative (developed during a very wet year), there was insufficient calibration. As the permittee has proposed usage of the model to estimate non-metered CSO Flows for self-reporting (except for the flow metered CSO Outfall No. 002), the Department can allow it concurrent with required inspections (daily unless using a visual aid, mechanical device or flow meter) to catch any non-modeled flows and to gather data to support future usage of this Model. **Current (as of 2022) CSO Monitoring Reports lack basic information to verify adequacy of the CSO Model estimation method**.
  - **Sewer System Flow Model**: The purpose of this model was to help prioritize corrective actions, not for CSO discharge estimation. The sewer system flow modeling indicated CSO Outfalls Nos. 004, 005, 006 and 008 are hydraulically-related. This should be reflected in any collection system corrective actions (beside need to prioritize CSO Outfalls No. 002 and 004 due to volumes alone), such as set forth in the 2018 Chapter 94 Report (see below). Specifically, the report indicated modeling showed:
    - Reduction in outfall CSO No. 008 stormwater flows reduced CSO Outfalls No. 006 and 005. **NOTE**: Attachment D indicates CSO Outfall No. 008 often had no discharge when CSO Outfalls Nos. 004, 005 and 006 were discharging. It discharged least often of all the CSO outfalls.
    - Reduction in CSO No. 006 stormwater flows reduced CSO Outfall No. 005 discharges. **NOTE**: There were often no CSO Outfall No. 006 discharges during Outfall No. 005 discharges.
    - Increase in CSO No. 004 stormwater flows caused backup into Outfall No. 005. The Report mentions either reducing stormwater flows into the CSO No. 004 watershed or increasing a pipe diameter to eliminate a hydraulic restriction. This appears to be "P18" hydraulic bottleneck (between CSO Outfall No. 004 and 005) mentioned in Section 4 (Conclusions). **NOTE**:

Attachment D indicates there were CSO Outfall No. 005 discharges when there was no CSO No. 004 discharges.

- **CSO Flow Study Significant Rain Event**: The CSO Flow Study Report defined a "significant storm event" as events of 1 inch or greater. However, since they are discharging at <0.10 inch rain, that is the significant storm event for this facility. The sheer number of such events would have a cumulative impact on CSO discharge volumes that has to be taken into account. **For example, CSO Outfall No. 002 discharged on 203 days in 2018**.
  - The Department will be requiring reporting of any precipitation event ≥0.01-inches.
  - The Application indicated CSO discharges started at 0.18-inches rainfall, which can be used as an interim "significant precipitation" value for CSO reporting purposes. **NOTE**: The 2022 Annual CSO Status Report indicated discharges starting at 0.10-inches of precipitation.
- **The CSO Flow Study Total Wet Weather Flow Column**: They assumed the wet weather events are over when WWTP flow drops below 500,000 GPD. This was not substantiated in this report (with daily effluent flows down to 0.208 MGD).
- **The CSO Flow Study Report Invalid CSO Flow Data**: Report Table Footnote 3 indicated if data was invalid due to meter failure, CSO flows were estimated based on the average percentage for all valid data points for each individual CSO. The Attachment table did not identify/flag "invalid" CSO flow data being referenced here. This undermines the credibility of the modeling.
- **CSO Flow Study CSO Event Definition**: They incorrectly defined some CSO events, with one CSO event indicated to be 37 days in duration. The new Part C.III.A language (during and immediately after precipitation authorized CSO discharges only) would not authorize any such CSO discharge. In practical terms, such a long-duration CSO Outfall discharge event would indicate a groundwater spring discharge directly into the collection system (requiring identification and corrective action) and/or inundated manholes submerged under an overflowing stream (requiring identification and corrective action). CSO conditions cannot cover such discharges.
- **CSO Flow Study Attachment L Table**: They think that they can achieve 85% treatment based upon a "typical year" of precipitation based on their analysis that was not adequately supported (too much required data/analysis missing). However, the basic requirement is 85% elimination/treatment during the reporting year, unless the NPDES Permit defines design conditions otherwise.
- **CSO Flow Study Appendix Q (Continuous Simulation Model Maps)**: The Authority plans to do additional sewer system mapping in this permit terms. The model-used drawings/figures lacked PA PE-seal and signature and other typical engineering drawing information (north arrow, topography, street, manhole invert elevations). Color coding breakdown, scaling, and outfalls not on all provided figures. There are depicted manholes/pipes without any sewershed color-coding.
  - No information on age and condition of collection system pipes/manhole to help determine any existing hydraulic restrictions.
  - Not sure if they evaluated available collection system data to try to identify any existing hydraulic elevation problem (inadequate slope, old piping likely to have lost capacity due to scaling/sediment build-up, etc.).

- **Actions relevant to CSO Discharges in last NPDES Permit Term:**
  - 2017 WWTP upgrades including Influent Flow Meter installed at WWTP, headworks with 1.8 MGD design capacity, disconnection of stormwater pipes from CSO Outfall No. 002 discharge, etc.
  - CSO Outfall No. 002 flow meter installed.
  - CSO rubber flap tide gates (to prevent stream backflow) repaired.
  - CSO Outfall No. 008 bar screen installed
  - Since 2016, the Authority rehabilitated five (5) manholes located on Second Street.
  - Build-up of solids at CSO Outfall No. 002 discharge addressed as a compliance action.
- **Authority-proposed 5 Phase LTCP Implementation/Separated Sewer System CAP**: The basic plan is to televise the collection system in phases, then design any needed corrective construction, and then implement any needed corrective work with ultimate compliance in 2036. They have purchased a camera for televising the sewer system, but were not clear on which CSO Sewer Shed and/or Separated Sewer System Areas are in each phase. See NPDES Permit Part C.III.D for the milestones incorporated into the LTCP Implementation Schedule.

- **Unapproved Former CSO Sluice Gate/new control throttling valve for CSO Outfall No. 002:** The usage of any control valve to throttle WWTP Influent flows (causing back-up and discharge to CSO Outfall No. 002) was explicitly **not** authorized in the 2017 Approved with Conditions LTCP. The Department required a Part II WQM Permit Application to demonstrate any such proposed usage was consistent with the CSO permit conditions.

- The 2/17/2017 LTCP Approval with Conditions Letter is part of the NPDES Permit-incorporated by reference LTCP.
- PA statutes (including Clean Streams Law), regulations, and the NPDES Permit conditions (Part A.I.B/Part C.II limitations on authorized CSO discharges to hydraulic overloading situations; Part A.I Additional Requirements Item 4, Part A.II Bypass definition, and Part B.I.G bypass conditions; Part C.II incorporating the 2017-approved with conditions LTCP) supersede any previous Department approvals (if ever granted) or SCSA-submittals.
- The LTCP Attachment 4 (1995 SCSA Final Plan of Action) Section 3, page 7 mentioned that SCSA planned to install a "sluice gate at the influent to the headworks" to prevent flooding of headworks with 0.75 MGD setting.
- No WQM permit authorizing its installation was located. It was not addressed in the subsequent LTCP (unless they assumed it was incorporated by reference).
- They did not report CSO Outfall No. 002 flows using the 1995 hydraulic correlations (inches of flow in pipes) in DMR supplemental forms/Annual CSO reports to allow Department to see if there was a bypass problem. (SCSA said later weir changes rendered 1995 curves obsolete but that would not have impacted the surcharge-type CSO Outfall No. 002).
- The 2017-approved LTCP submittal noted they had set the sluice gate to 0.8 – 1.1 MGD flow, sending all higher flow to CSO Outfall No. 002 i.e. without measurement or addressing CSO/WWTP bypassing requirements.

- **2018 CSO Flow Study CSO Outfall No. 002 discharges (adjacent to WWTP)**: See above. The frequency, duration, and magnitude of CSO Outfall No. 002 discharges has serious implications in terms of meeting Water Quality Standards in the UNT and Mill Creek.
- **Claimed WWTP Hydraulic Capacity Limitation**: The permittee stated that the 1.8 MGD WQM-permitted peak hourly/instantaneous design flows were only for 1 hour with consequent throttling far below the WQM Permit Module 1-identified design flows. The treatment basins were said to be limited to 1 MGD flows only. This information was not found in previous approved WQM permit applications:
  - Pre-upgrade: 1.1 MGD peak instantaneous/hourly flow and 1.0 MGD max daily flow (WQM Module 1)
  - Post-upgrade: 1.8 MGD peak instantaneous/hourly flow and 1.0 MGD max daily flow (WQM Module 1)
- **2019 CSO Flow Data**: They indicated 70 CSO events (counting each day of discharge) based upon CSO Graphical Model predictions for rainfall. They assumed a wet weather event is when they receive 0.550 MGD per day, given "typical dry weather flow is approximately 400,000 gallons per day". Measured WWTP flow was identified as also "Volume Treated During Wet Weather Events" (not identified as either influent or effluent flow). Plant upgrades were completed in 2018, therefore all 2019 CSO data reflects STP upgrading (to claimed 1.0 MGD max daily flow and claimed 1.8 MGD peak hourly flow). Based on reported information:
  - Jan (5.4 inches precipitation):
    - 6 CSO events. All CSOs discharged during each event.
    - 1 CSO event with <0.75 MGD WWTP flow.
    - 2 CSO events with <1.0 MGD WWTP flows.
    - 2 events below 1.8 MGD WWTP flows.
    - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 12
  - Feb (2.05 inches precipitation):
    - 3 CSO events. All CSOs discharged during each event.
    - No CSO event with <0.75 MGD WWTP flow.
    - 1 event with <1.0 MGD WWTP flow.
    - All events below 1.8 MGD WWTP flow.
    - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 6
  - March (3.65 inches precipitation):
    - 4 CSO events. All CSOs discharged during each event.
    - 2 CSO event with <0.75 MGD WWTP flow.
    - 3 events with <1.0 MGD WWTP flow.
    - All events below 1.8 MGD WWTP flows.
    - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 9
  - April (6.42 inches precipitation):
    - 3 CSO events (one two day event). All CSOs discharged during each event.
    - 1 CSO event with <0.75 MGD WWTP flow.
    - 2 CSO event with <1.0 MGD WWTP flow.
    - All events below 1.8 MGD WWTP flow.
    - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 12

- May (9.9 inches precipitation):
  - 4 CSO events (Three two/three day event). All CSOs discharged during each event.
  - 1 CSO event with <0.75 MGD WWTP flow.
  - 5 events below 1.0 MGD WWTP flow.
  - All events below 1.8 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 19
- June (4.7 inches precipitation):
  - 6 CSO events. All CSOs discharged during each event.
  - 1 CSO event with <0.75 MGD WWTP flow.
  - 1 CSO event with <1.00 MGD WWTP flow.
  - All events below 1.8 MGD WWTP flow.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 8
- July (4.4 inches precipitation):
  - 5 CSO events (3 two-day events). All CSOs discharged during each event.
  - 4 CSO event with <0.75 MGD WWTP flow.
  - All events below 1.00 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 6
- August (1.45 inches precipitation):
  - 3 CSO events (one two day event). All CSOs discharged during each event.
  - 2 CSO event with <0.75 MGD WWTP flow.
  - All events below 1.00 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 2
- September (1.5 inches precipitation):
  - 4 CSO events. All CSOs discharged during each event.
  - 4 CSO event with <0.75 MGD WWTP flow.
  - All events below 0.75 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): Zero
- October (9.5 inches precipitation):
  - 7 CSO events (one two day event).
  - All CSOs discharged during each event.
  - 4 CSO event with <0.75 MGD WWTP flow.
  - 6 CSO events below 1.0 MGD WWTP flows.
  - All below 1.8 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 1
- November (1.6 inches precipitation):
  - 3 CSO events. All CSOs discharged during each event.
  - 1 CSO event with <0.75 MGD WWTP flow.
  - All events below 1.0 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 3 (no CSOs for two dates)
- December (3.7 inches of precipitation):
  - 6 CSO events (3 two day events). All CSOs discharged during each event.
  - 4 CSO event with <0.75 MGD WWTP flow.
  - All CSO events below 1.0 MGD WWTP flows.
  - Days of >1 MGD Total Wet Weather Flow (WWTP and estimated CSOs): 6

Communications Log (NPDES Permit Renewal and CSO-related Issues since previous permitting for informational purposes):

- **12/9/2015**: NPDES Permit No. PA0025224 issued with CSO conditions:
  - **NPDES Permit Part C.II.G excerpt with information notes bolded**:

Scheduled Interim Milestones	-	Compliance Due Date
Submit WQM permit application for CSO Outfall #008 bar screen	-	March 31, 2016
Install CSO Outfall #008 bar screen	-	Thirty days after Department Approval unless the Department approves an alternate date in writing.
Revised LTCP Update Submittal for approval with 12-month CSO Flow Monitoring Study Plan and stream Water Quality Monitoring Plan	-	March 31, 2016
LTCP Update implementation	-	Upon Department Approval or Approval with Conditions **– Approved 2/17/2017**
CSO Flow Monitoring Study Plan Start	-	Sixty days after Department Approval or Approval with Conditions **– Approved 2/17/2017 (extension granted until WWTP substantial completion – with partial cert received 11/6/2017). Consultant indicated flow metering began in December 2017.**
Stream Water Quality Monitoring Plan Start	-	Sixty days after Department Approval or Approval with Conditions **Approved 2/17/2017 (extension granted until WWTP substantial completion – with cert received 11/6/2017)**
CSO Flow Monitoring Study Report Submittal to Department	-	Within thirty days of CSO Flow Monitoring Study completion**: Flow Study completed 12/31/2018**. **Report due 1/31/2019. Partial report received 11/13/2019 (referenced unsubmitted LTCP for required information and analysis).**
Second LTCP Update incorporating flow monitoring data, stream water quality data, and any required Corrective Action Alternative (if needed)	-	Within sixty days of CSO Flow Monitoring Study completion unless the Department modifies this schedule in writing. **Flow Study completed 12/31/2018**. **Report due ~3/3/2019. Received 9/15/2019. Deficient Revised LTCP received with NPDES Permit Renewal Application on 9/15/2020. Awaiting revised LTCP per 3/10/2021 DEP Technical Deficiency Letter to see if any corrective action alternative is proposed.**
Implement Second LTCP Update	-	Upon Department Approval or Approval with Conditions.

- **5/26/2016**: Meeting between Department and SCSA regarding the WQM Permit Amendment Application ID# 5406402-A2 (WWTP Upgrade changes) and CSO Long Term Control Plan (LTCP) including the related CSO Flow Monitoring Study and Stream Water Quality Monitoring Plan required by the 12/9/2015 SCSA NPDES Permit ID# PA0025224 Part C.II.G (CSO Schedule of Compliance)
- **6/1/2016**: DEP (Berger) E-mail summarizing the 5/26/2016 Meeting

- **7/14/2016**: WQM Permit No. 5406402-A2 issued for modifications for previously approved WWTP upgrades including headworks upgrade and removal of stormwater pipe directing stormwater flow to CSO Outfall No. 002, but NOT including CSO bypass valve at headworks backing up flow to CSO Outfall No. 002). See IRR for history of LTCP issues up to WQM permit action.
    - **WQM Permit Cover letter noted that this permit was released in anticipation that NPDES permit requirements would be met, including**:
        - Bypass provisions, "especially when throttling the headwork's throttling valve". NOTE: Any headworks includes provisions to shut off influent flow and/or redirect flow to bypass channel for normal inspection/maintenance, but not as CSO control.
        - CSO conditions including Part A.I.B and Part C.II
        - Part A.III.C.1 (Planned Changes to Physical Facilities) for any changes from approved design
        - Part B.I.C.3-4 (including additional CSO reporting requirements)
        - Need for updated PPC Plan to address high flow conditions, etc.
        - Need to keep onsite an SOP for operation of WWTP at >0.75 MGD influent flow and >1.8 MGD influent flow
    - Standard Condition 11: Cross-references all NPDES Permit requirements.
    - Standard Conditions for Construction: No. 13 requires construction per approved plans (which did not include a new CSO Sluice Gate on the approved Drawing C-5 (Proposed Site Plan). No. 14 required a description of all deviations be submitted to the Department within 30 days of certification.
    - **Special Condition D (CSO-related requirements) including**:
        - Documentation of elimination of stormwater pipe discharging via CSO Outfall No. 002.
        - **CSO LTCP information pertaining to the headwork's "influent flow control valve" and its usage.**
        - **The CSO Flow Study Report was to include an updated engineering determination of the WWTP's peak instantaneous, peak hourly, and maximum daily flow both as received and as predicted in the absence of any throttling of WWTP influent by existing sluice gate or throttling valve based on all available flow data (including flow modeling, engineering analysis.**
        - **Stated nothing in this permit supersedes the NPDES Permit CSO-related requirements.**
    - **Special Condition E (HFMP) requirements including**: HFMP identifying the peak instantaneous flow that can be handled by the limiting plant component and how long that flow can be maintained without a bypass. Up-to-date HFMP to be onsite at all times.
    - IRR: IRR included background history on LTCP issues due to ongoing CSO issues including meeting summaries for the public record. **The IRR also noted the Authority had chosen to incur potential engineering/operational risks due to issues including peak flow/CSO issues**.
- **7/15/2016**: DEP (Berger) E-mail forwarding the signed WQM Permit Amendment No. 5406402-A2 to SCSA engineer (Alfred Benesch)
- **7/26/2016**: Alfred Benesh (David Cook) E-mail asking for guidance on Stream Water Quality Monitoring Plan requirements and potential I&I corrective actions.
- **8/2/2016**: DEP (Berger) E-mail providing some guidance regarding 7/26/2016 E-mail questions.
- **8/9/2016**: Meeting between the Department and the St. Clair Sewer Authority (represented by their Engineer, Alfred Benesch & Co.) regarding Combined Sewer Overflow (CSO) Long Term Control Plan (LTCP) requirements, (including the CSO Flow Monitoring Plan and Stream Water Quality Monitoring Plan) due by August 29, 2016 (per DEP-granted extension to NPDES Permit ID# PA0025224 Part C.II.G (Schedule of Compliance)).
- **8/10/2016**: DEP (Berger E-mail) regarding highlights of 8/9/2016 Meeting with SCSA regarding CSO LTCP requirements. **Item 4.a.iii mentioned need for WQM permit for any new CSO control structure upstream of the WWTP headworks.**
- **8/11/2016:** DEP (Berger) E-mail with sample DMR Supplemental Reporting form for Stream monitoring for SCSA usage.
- **8/11/2016 WQM Permit No. 5416401 (CSO Outfall No. 008 bar screen**): IRR background section noted Department gave an extension to 8/28/2016 for LTCP update and CSO Flow Monitoring Study Plan. IRR noted previous Chapter 94 report concurrent submittals' did not address all Annual CSO Status Report requirements. Bar screen subsequently installed.
- **8/29/2016 (revised 11/7/2016):**
    - LTCP Update received
    - CSO Flow Study Plan received
    - Instream Water Quality Monitoring Plan received
- **10/14/2016**: DEP Site Visit and Meeting at SCSA.

- **10/7/2016**: Berger E-mail summarizing 10/4/2016 Site Visit/Meeting to facilitate the development of HFMP and see ongoing construction.
    - They planned to relocate the new sluice gate/control (controlling discharges to CSO Outfall No. 002) out of new headworks to avoid definitional bypass requirements. **They were to send in draft figure to see what permitting requirements pertain.** McCoach indicated that he did not know if there would be any CSO Outfall No. 002 discharges after WWTP upgrades.
    - There was a discussion of internal WWTP bypassing provisions option to allow for minimum CSS treatment (primary treatment and disinfection)
    - There was a discussion of existing NPDES/LTCP requirements (including facility not meeting LTCP Goal requirements now in effect).
- **10/11/2016**: WQM Permit No. 5416401 (CSO Outfall bar screen) Construction Certification received.
- **11/17/2016**:
    - Revised LTCP Update Received
    - Revised CSO Flow Study Plan Received
    - Revised Instream WQ Monitoring Plan received.
- **2/2/2017**: McCoach E-mail included SCSA letter and hard copy of DCED grant application for WWTP internal bypassing (to allow maximization of treatment within treatment plant).
- **2/17/2017**:
    - DEP LTCP Approval with Conditions Letter (letter explicitly stated no CSO bypassing was authorized, indicating a Part II WQM permit with regulatory justification needed.
    - CSO Flow Study Plan Approval with Conditions Letter
    - In-stream WQM Monitoring Plan Approval with Conditions Letter
- **10/13/2017**: McCoach E-mail indicating start-up of new headworks. **E-mail referenced installation of "requested additional gate valve near CSO #002 is installed and operable to control flow". NOTE: Any WWTP has to be able to control influent flow for maintenance. We did not request any such gate valve.**
- **11/2/2017**: McCoach E-mail indicating headworks operating. **Also stated: "Flow to the WWTP is being regulated by the upstream CSO valve to maximize flow to the WWTP without causing an upset." NOTE: No upstream CSO valve was part of WQM WWTP permit approved site changes.**
- **11/6/2017**: WQM Permit Amendment No. 5406402-A2 (WWTP Upgrade changes) **"Post construction certification No. 1" received:**
    - Work not completed on headworks building including remote control and the influent flow meter.
    - Removal of stormwater pipe connection to CSO Outfall NO. 002 discharge noted. Modifications and deviations from the design plans, if any, will be noted on the Record drawings.
    - Attached Proposed Site Plan Drawing C-5 figure: Hand-drawn CSO Control Valve flagged and highlighted to mark as "complete". This control valve was not identified on WQM-permit approved drawings. WQM Permit Application did not address CSO Outfall No. 002. **NOTE:** A "CSO control valve" is not a WWTP Influent valve to allow for normal headworks O&M. Use of a WWTP influent valve to intentionally divert flows to a CSO Outfall is a WWTP Bypass. Moving a WWTP influent valve to an upstream manhole merely makes that manhole an integral part of the WWTP.
- **11/14/2017**: DEP (Berger) E-mail requiring the complete Construction Certification and noting additional requirements:
    - Reminder of instream WQ sampling program implementation need and need for LTCP within 60 days after completion of the 1-Year CSO Flow Monitoring Study.
    - Need for a description of all deviations from the approved application and design plan per WQM permit conditions plus need for as-built drawings.
    - Annual CSO report need to document all LTCP/CSO work including any changes to new CSO-related valves and valve settings.
    - Reminder of WQM permit conditions including certification requirements, annual sewage sludge inventory, engineering determination of WWTP design flows.
- **11/6/2017**: WWTP Upgrade Construction Certification received.
    - Incomplete, required more information that was received 5/1/2019.
    - The CSO Flow Study Report also stated that the upgrades were basically completed in 2017, which was in accordance with Department understanding.
- **3/2018**: 2017 Chapter 94 Report and Annual CSO Report
- **6/20/2018**: DEP (Berger) E-mail inquiry
- **6/21/2018**: McCoach response E-mail indicated flow meters started recording on 12/19/2017 and were still in-place.
- **1/10/2019**: DEP (Berger) E-mail regarding missing construction certification information (referencing WQM Special Condition F and standard conditions 13, 14, and 17) plus:

  - Asked for status of project (referencing Special Condition)
  - Reminder of Annual CSO Status Report requirements
  - Asked for anticipated submittal dates for LTCP Update, CSO Flow Study Report, Stream WQ Report
- **1/11/2019**: McCoach E-mail response that the final construction certification would be submitted in 30-60 days, that the Authority would be purchasing a permanent flow meter for CSO Outfall No. 002 that would be tied into the WWTP SCADA. Once they remove the temporary CSO flow meters, the CSL Flow Study and LTCP would be submitted. Samples still be taken for the Stream WQ Study (previous trouble getting dry weather sampling). Will get two more quarters of Water Quality monitoring in and then submit the report to the Department.
- **3/2019**: 2018 Chapter 94 Report and Annual CSO Status Report received
- **4/4/2019**: DEP (Berger) E-mail to McCoach noting that no construction certification or CSO LTCP flow monitoring report or stream monitoring report had been received from SCSA. Asked if they were included with 2018 Chapter 94 Report.
- **5/1/2019**: Supplemental Certification documentation including drawings:
  - Cover letter for certification stated: "Any modifications or deviations from the design plans are noted on the As-built Drawings and satisfy our original design intent for the project". No description given in cover letter.
  - **No flagging of changes on submitted drawings to identify significant deviations. For example, Drawing C-5 was modified with a new note 34 for the unauthorized CSO Control Valve, but it was not flagged.**
  - No identification of where WQM Permit Special Condition requirements were addressed in the certification submittals. For example, where is the aerated blower certification/information?
  - No mention of whether they will include the WQM Special Condition-required additional sludge inventory information in the 2019 Chapter 94 Report.
  - WQM Special Condition No. F required the drawings within 30 days of construction completion. If the facility was substantially installed by start of 2018, what additional construction happened when in 2018 and 2019? This appears to be another noncompliance issue and part of a pattern of delay in submitting required information per permit deadlines.
- **5/2/2019**: SCSA consultant (McCoach) E-mail:
  - **CSO flow metering completed**
  - **Request for extension of CSO Flow Study Report and LTCP Update to 6/30/2019**
  - **Request for extension of Stream WQ Monitoring Report to 8/30/2019 (three quarters of data already collected) – no extension in writing given to my knowledge**
- **11/13/2019:** CSO Flow Study Report received: Much information and analysis required by Approval with Conditions Letter conditions not found. They cross-referenced the future LTCP Update for information.
- **12/26/2019**: DEP (Berger E-mail asking for status of LTCP Update and Stream WQ Report (asking for one original and one copy minimum) meeting all Letter Approval requirements. Also asked for second copy of CSO Flow Study Report.
- **1/8/2020**: McCoach E-mail indicating LTCP and Stream WQ Reports are on his desk for review, and that he would get them into the mail the following week.
- **3/2020**: 2019 Chapter 94 Report and Annual CSO Status Report
- **7/4/2020**: Due date for NPDES Permit Renewal Application.
- **7/9/2020**: NPDES Permit Renewal Application received. Renewal application was date stamped 7/9/2020 and entered into E-facts as received on this date.
- **7/22/2020**: NPDES Permit Renewal Incompleteness Letter (including request for copy of LTCP as essential part of renewal application. Reminder e-mails sent later for complete response. Letter was e-mailed to SCSA and its consultant and required a response within 30 days.
- **8/24/2020**: SCSA (McCoach) response request for an extension for submittal of a complete response to the NPDES Permit Renewal Application Incompleteness Letter to 9/4/2020.
- **8/25/2020**: DEP (Berger) E-mail granting requested extension to 9/4/2020.
- **9/15/2020**: LTCP Update received (but not rest of response to NPDES permit incompleteness letter).
- **10/20/2020**: DEP (Berger) E-mail noting receipt of LTCP Update but not response to other NPDES Permit Renewal Incompleteness Letter items.
- **11/5/2020**: DEP (Berger) reminder e-mail about incomplete NPDES Permit renewal application. Complete submittal was due 11/12.
- **11/5/2020**: David Horst (Alfred Benesch) E-mail indicating SCSA was awaiting lab results.
- **11/12/2020**: David Horst (Alfred Benesch) E-mail indicating SCSA was awaiting lab results.
- **12/18/2020**: David Horst (Alfred Benesch) E-mail with pdf copy of Renewal Update cover letter and link to other documents (that DEP Work Computer would not open).

- **12/22/2020**: Hard copy Response to NPDES incompleteness letter received at Office.
- **3/10/2021**: Technical Deficiency Letter issued (e-mailed) for deficient NPDES Permit Renewal Application (including deficient LTCP Update) with response due on 5/10/2021 (60 days).
- **3/29/2021**: DEP NOV addressing noncompliance (late renewal application; CSO-related requirements; and fecal coliform exceedances).
- **4/1/2021**: DEP (Berger) E-mail asking for confirmation of receipt of Technical Deficiency Letter
- **4/1/2021**: SCSA (McCoach) E-mail confirming receipt of Technical Deficiency Letter
- **4/29/2021**: SCSA response letter to 3/29/2021 DEP NOV
- **5/10/2021**: SCSA (McCoach) E-mail asking for 60-day extension for response to Tech Def Letter.
- **5/10/2021**: DEP (Bellanca) E-mail granting 60-day extension. (Response due ~7/10/2021 as extension from original due date).
- **7/26/2021**: DEP (Berger) E-mail asking for status of overdue response.
- **7/26/2021**: SCSA (McCoach) E-mail indicating response would be submitted in the next week.
- **11/23/2021:** SCSA on-base response to 3/10/2021 DEP Technical Deficiency Letter received via On-Base. (Date of notification e-mail with no other date evident on communication).
- **11/29/2021**: Hard copy of Authority response to 3/10/2021 Technical Deficiency Letter received. (Referencing promised analytical information, etc.). Attachment 7 was the revised Long Term Control Plan.