pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026921**
Facility Type	**Municipal**	APS ID	**737436**
Major / Minor	**Major**	Authorization ID	**941877**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Greater Hazleton Joint Sewer Authority**	Facility Name	**GHJSA WWTP**
Applicant Address	P.O. Box 651	Facility Address	500 Oscar Thomas Drive
	Hazleton, PA 18201-0651		Hazleton, PA 18201
Applicant Contact	Christopher Carsia	Facility Contact	Christopher Carsia
Applicant Phone	(570) 454-0851 ext 310	Facility Phone	(570) 454-0851 ext 310
Client ID	85678	Site ID	242069
Ch 94 Load Status	Not overloaded	Municipality	West Hazleton Borough
Connection Status	No connection prohibition	County	Luzerne
Date Application Received	August 31, 2012	EPA Waived?	No
Date Application Accepted	September 11, 2012	If No, Reason	Major Facility, Pretreatment, Significant CB Discharge

Purpose of Application: Renewal of NPDES permit to discharge treated sewage.

Summary of Review

The applicant is requesting renewal of an NPDES permit to discharge 8.9 MGD of treated sewage to Black Creek, a CWF/MF designated receiving stream in state water plan basin 05-D (Nescopeck Creek). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use.

A Total Maximum Daily Load (TMDL) for the Black Creek, Little Nescopeck Creek and an unnamed tributary to Little Nescopeck Creek watershed was finalized on May 2, 2005. The TMDL addresses the three primary metals associated with acid mine drainage (Iron, Manganese and Aluminum) and pH. Treated sewage is not considered a major contributor of the primary metals to the affected streams, however, monitoring and reporting requirements are included in this permit renewal for these pollutants of concern. They are to be sampled weekly as per Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (doc. no. 362-0400-001).

The pH and Fecal Coliform limits are technology-based limits carried over from the previous permit. A technology-based IMAX limitation (10,000 No./100 mL) is added for Fecal Coliform during this permit renewal for the winter months (October - April). A technology-based IMAX limitation (1,000 No./100 mL) is added for Fecal Coliform during this permit renewal for the summer months (May - September) to replace the current "not greater than 1,000 No./100 mL in more than 10% of the samples tested" requirement.

The previously issued permit did not contain Total Residual Chlorine (TRC) limitations since the WWTP utilizes ultraviolet light for disinfection. In the event the facility uses chlorine for cleaning purposes or as a back-up disinfection option, an IMAX water quality-based limitation is added to the permit as calculated by the attached TRC calculation spreadsheet and is to be sampled "daily when discharging" (see requirements under Part C.IX.D). The limitation will come into effect three years after the permit effective date. Monitoring/reporting requirements are included in the permit until the limit comes into effect. The permittee may conduct site-specific studies to change the limitation (See Permit Part C.VII).

Approve	Deny	Signatures	Date
X		/s/ Brian Burden, E.I.T. / Project Manager	December 4, 2017
X		/s/ Amy M. Bellanca, P.E. / Environmental Engineer Manager	December 4, 2017

Summary of Review

As per the Water Quality Assessment performed by Timothy Daley, Water Pollution Biologist II (dated July 1, 2008), the point of first aquatic use related to the Authority's outfall is considered the discharge location on Black Creek. In previous modeling, the point of first use was at the confluence of Nescopeck Creek (downstream of Black Creek) with the Susquehanna River. Previous modeling utilized stream gage results from gage 01540500 (Susquehanna River at Danville, PA) and resulted in a low flow yield (LFY) value of 0.09 cfs/mi^2 (Q_{7-10} = 1,010 cfs, D.A. = 11,220 mi^2). Since the watershed at the point of first use has changed considerably, this gage is no longer representative of the watershed at the point of discharge.

On April 27, 2009, GHJSA requested an amendment to the permit for approval to receive 35,000 gpd of oil and gas drilling wastewater (which was subsequently withdrawn in a letter, dated June 11, 2010, from GHJSA's consultant). A draft permit was prepared that utilized data from stream gage 01538000 (Wapwallopen Creek at Wapwallopen, PA) to develop a LFY for modeling purposes (Q_{7-10} = 5.76 cfs, D.A. = 43.8 mi^2 → LFY = 0.132 cfs/mi^2). Using the USGS StreamStats delineation feature, the watershed characteristics at gage 01538000 and the point of discharge were compared for this permit renewal. It was found that several key watershed characteristics were not compatible (see highlighted fields in Watershed Information attachment), therefore, data from gage 01538000 is not used to develop a LFY for this permit renewal. No other gages within the vicinity were found to have comparable watershed characteristics and/or recent data. As a result, the default LFY of 0.1 cfs/mi^2 is used to model the discharge.

The discharge-to-streamflow ratio at the point of first use is approximately 8.9 MGD : 2.13 cfs (1.37 MGD) or approximately 6.5 parts discharge to 1 part streamflow using the default LFY of 0.1 cfs/mi^2. Since Black Creek is also listed as impaired for suspended solids as per the 2014 PA Integrated Water Quality Monitoring and Assessment Report, the standards in the Department's *Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers* (doc. no. 391-2000-014) for $CBOD_5$ and TSS is incorporated in this permit renewal. $CBOD_5$ and TSS monthly average limitations are reduced to 10 mg/L for both parameters. The weekly average and IMAX limitations are calculated as per guidelines in document 362-0400-001 (1.5x average weekly multiplier and 2.0x IMAX multiplier). Over the past 2 years, the highest reported average monthly concentrations for both $CBOD_5$ and TSS was 4 mg/L. Monthly and weekly mass loading limitations are included in the permit for $CBOD_5$ and TSS.

The limits for Total Nitrogen and Total Phosphorus found in 391-2000-014 were not applied during this permit renewal since cap loads were already established for those pollutants in the Chesapeake Bay TMDL (see below). The D.O. minimum of 6.0 mg/L found in 362-0400-001 was not applied since WQM 7.0 modeling suggested that a 5.0 mg/L minimum was sufficient (see below).

WQM modeling recommended a 2.3 mg/L summertime average monthly limitation for Ammonia-Nitrogen (see WQM Modeling attachment). The standard 3x multiplier is used to develop the wintertime average monthly limitation of 6.9 mg/L. These limits will take effect three years from the permit effective date. Monitoring and reporting requirements for Ammonia-Nitrogen are carried over from the previous permit until the limits take effect. The monitoring frequency is updated to daily to remain consistent with guidance document 362-0400-001. A Dissolved Oxygen minimum of 5.0 mg/L was recommended and incorporated in the permit, to be measured daily. For modeling inputs, RMI values were obtained using the "PA Historic Streams" feature of eMapPA as well as the "measure" tool. Elevations were obtained using the spot elevation feature of USGS's National Map Viewer (see Watershed Information attachment). Drainage areas were delineated using USGS's StreamStats Interactive Map.

PENTOX modeling (attached) recommended effluent limitations or monitoring requirements for several pollutants. Limitations will come into effect three years after the permit effective date.

- **Total Dissolved Solids, Chloride, Bromide,** and **Sulfate** – Monitoring was recommended due to the discharge flow value. Weekly monitoring/reporting is added to the permit for these parameters.

- **Total Cobalt** – The highest value reported in the pollutant group sampling submitted with the application was 20 µg/L. Since the most stringent WQBEL (based on CFC) is 21.9 µg/L, limits are established during this renewal.

- **Free Available Cyanide** – The highest value reported in the pollutant group sampling submitted with the application was 6 µg/L. Since the most stringent WQBEL (based on CFC) is 6.0 µg/L, limits are established during this renewal.

- **Hexachlorobutadiene –** The pollutant tested as non-detect in all analyses. The detection limit used for the analyses was 1 µg/L and the Department's target QL is 0.5 µg/L. The most stringent WQBEL (based on CRL) is 0.9

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µg/L, and limits were recommended. GHJSA was given the opportunity to reanalyze non-detect pollutants that were originally analyzed with detection limits above the Department's target QLs and Hexachlorobutadiene is the only pollutant that may have been overlooked in the reanalysis opportunity. However, best professional judgment suggests there is no industry discharging the pollutant to GHJSA's WWTP. It is formed as a by-product during the processing (chlorinolysis) of other chemicals such as tetrachloroethylene, trichloroethylene, and carbon tetrachloride and is an intermediate in the manufacture of rubber compounds and lubricants as per the CDC's website. Although it can form when hydrocarbons are exposed to chlorine gas under certain conditions, GHJSA utilizes ultraviolet light for disinfection thus eliminating the chance Hexachlorobutadiene can be formed as a disinfection by-product. Limits or monitoring requirements are not included in the permit for this pollutant.

The Part C.V condition regarding Toxics Reduction Evaluations (TREs) is added to the permit and applies to each of the toxic pollutants above where limitations are to be established. The permittee will have the option to accept the implementation of the limitations or to perform site-specific studies to verify or refine the WQBELs.

Weekly influent monitoring for BOD_5 and TSS are added to the permit to determine if the removal percentages meet secondary treatment standards. The standard ratio of 6 BOD_5 : 5 $CBOD_5$ will be used to make that determination.

To quantify nutrient reduction needs, maximum nutrient loads (cap loads) for each major watershed tributary to the Chesapeake Bay were established. This included allocation of cap loads for Total Nitrogen (TN) and Total Phosphorus (TP) in Pennsylvania for the Potomac and Susquehanna watersheds. Pennsylvania's overall cap loads for TN and TP were further divided into cap loads for point and non-point sources. The method used to allocate the point source portion of the load was developed after DEP conducted an extensive stakeholder process with sewage treatment plants in 2006. The workgroup recommendation made the allocations based on the design annual average daily flow, and concentrations of 6 mg/L TN and 0.8 mg/L TP. Based on this methodology, the allocations for TN and TP for this facility are 216,739 lbs/yr and 27,092 lbs/yr, respectively (effective August 1, 2011). The GHJSA WWTP is considered a Phase 1 facility in the Department's *Phase 2 Watershed Implementation Plan Wastewater Supplement (revised 9/6/2017)*.

In a letter from the Department, dated September 10, 2013, a TN offset of 29,200 lbs/yr and a TP offset of 408 lbs/yr were granted. Twice per week monitoring requirements for Total Kjeldahl Nitrogen, Nitrate+Nitrite-Nitrogen, and Total Phosphorus are applied in this renewal as per EPA requirements. The previously issued permit required 1/week monitoring for each of those parameters. Total Nitrogen, Net Total Nitrogen, Total Phosphorus, and Net Total Phosphorus must be reported on a monthly and annual basis.

GHJSA was not required to conduct Whole Effluent Toxicity (WET) testing in the previously issued permit. The standard Part C condition, Whole Effluent Toxicity – No Permit Limits, has been added to the permit. WET testing shall be conducted annually during the upcoming permit cycle, at a minimum. The WET Analysis Spreadsheet (see attached) was used to determine that the permittee must generate chronic survival and reproduction data for *Ceriodaphnia dubia*, and chronic survival and growth data for *Pimephales promelas*. The permittee shall perform testing using the following dilution series: 22%, 44%, 87%, 94%, and 100% effluent, with a control, where 87% effluent is the facility-specific Target In-Stream Waste Concentration (TIWC). PENTOX modeling determined that the acute and chronic partial mix factors (PMFs) are both equal to 1.0.

The GHJSA continues operation of the EPA-approved Municipal Industrial Pretreatment Program (MIPP). Six significant users (SIUs) are currently permitted under the MIPP, of which three are considered Categorical Industrial Users (CIUs) by definition. All six MIPP permits expire on December 31, 2018. The CIUs are:

1. Troy Manufacturing, 130 Lions Drive, Valmont Industrial Park, Hazle Township, PA 18202. Subject to 40 CFR Part 439 (Pharmaceutical Manufacturing Point Source Category – Subpart D – Mixing, Compounding and Formulation Subcategory). The facility blends and packages topical, non-prescription analgesic products used for muscle strains and soreness. The facility batch discharges approximately 1,500 gallons of process wash water into the sanitary sewer a few times per month.

2. Henkel Consumer Goods, Inc., 125 Jaycee Drive, West Hazleton, PA 18202. Subject to 40 CFR Part 417 (Soap and Detergent Manufacturing Point Source Category – Subpart P – Liquid Detergents Subcategory). The facility blends and packages liquid detergent and liquid soap household and personal care products. The facility adjusts pH and adds anti-foam to the process water prior to discharge to the sanitary sewer.

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3. Environmental Recovery Corporation, 1076 Old Manheim Pike, Lancaster, PA 17601. Subject to 40 CFR Part 437 (Centralized Waste Treatment Point Source Category – Subpart B – Oils Treatment and Recovery Subcategory). The facility pre-treats natural gas compressor station condensate and hauls it for discharge at the WWTP.

Each facility is inspected and sampled at least once per year by the Control Authority. All facilities are required to perform a minimum of one sampling event every six months and submit a sampling results reporting form. Each facility is also required to submit a routine compliance report twice per year. Wastewater discharge limits violations result in additional monitoring/reporting requirements. In 2016, local limit parameters were analyzed once every calendar quarter on raw influent, final effluent, and dewatered sludge cake, as required by the previous NPDES permit. Local limit parameters were also analyzed quarterly on domestic wastewater samples from two locations in the collection system, based on an agreement with the EPA. Priority pollutants were analyzed on raw influent, final effluent, and dewatered sludge cake in August 2016. Review of the pollutant sampling data and GHJSA's general administration of the MIPP results in no need for additional monitoring requirements in this permit.

There are 15 permitted combined sewer overflow (CSO) regulators and outfalls in the WWTP collection system. The previously issued permit amendment only included 14 permitted CSO outfalls. Outfall 007 (Diversion Chamber No. 11 on Roosevelt Street, City of Hazleton) is added to the CSO list as per GHJSA's 2016 CSO Status Report. The coordinates for several of the CSO outfalls were updated to be in accordance with the 2016 CSO Status Report. As per the report, approximately 486 million gallons of combined wastewater was discharged from the CSOs during wet weather events in 2016. There were a total of 901 CSO discharge events averaging 60 events per CSO outfall. The WWTP processed approximately 2,588 million gallons of wastewater in 2016, therefore, approximately 16% of the total combined wastewater was discharged through the CSOs and 84% was processed through the WWTP. Flows are metered at the WWTP and CSO 003 while flows are estimated for the remaining CSOs using a Microsoft Excel spreadsheet that was developed in 2000. The report also indicates that comparison of the spreadsheet flow estimates with actual flow metering data collected as part of Gannett Fleming's October 2008 CSO Characterization Report show the need for an updated flow estimate model.

Two of the CSOs provide treatment to the combined sewage:

- CSO 002 (at the WWTP) includes a vortex separator designed to provide primary treatment, solids and floatable disposal and disinfection. The vortex separator was installed in 2012.

- CSO 003 also includes a vortex separator, which was installed in 2009. The flow meter monitors/records discharge volume, duration and frequency.

The receiving streams for the CSOs are Black Creek, Cranberry Creek and Hazle Creek and several tributaries to those streams. As per the Department's 2014 Integrated Water Quality Report, stream categories and impairments are as follows:

Category 5 streams requiring TMDL
- Black Creek – CSOs and suspended solids
- Unnamed Tributary to Black Creek – CSOs and suspended solids

Category 4c streams not requiring TMDL
- Cranberry Creek – AMD and flow alterations
- Unnamed Tributary to Cranberry Creek – AMD and flow alterations
- Unnamed Tributary to Black Creek – AMD and flow alterations

Category 4a streams with approved TMDL
- Black Creek and 4 unnamed tributaries to Black Creek – AMD
- Hazle Creek and 4 unnamed tributaries to Hazle Creek – AMD
- 2 unnamed tributaries to Cranberry Creek - AMD

The previously issued permit contained milestones and due dates for several CSO projects:

1. **Hydraulic Characterization of the CSO's** *(due 180 days of August 1, 2011).* As per the 2016 CSO Status Report, this was completed in 2008. The Authority continues to utilize the monthly CSO flow estimating spreadsheets, as developed in 2000, and there have been no changes to the flow estimating procedures in these spreadsheets. Initial

Summary of Review

comparison of these spreadsheet flow estimates with actual flow metering data collected as part of Gannett Fleming's October 2008 CSO Characterization Report indicated that further investigation into the flow estimating procedures may be warranted. The permittee's consultant stated that these flows represent an approximation of CSO discharges and the accuracy of these estimated flows is unknown. The consultant suggests that these flow estimates should not be used for regulatory monitoring or enforcement, planning, or design purposes. As per an email from the applicant's consultant, dated September 10, 2017: "the monthly CSO flow estimating spreadsheets were developed back in the 1990's as part of the Nine Minimum Controls and as an NPDES permit requirement. The Authority has continued to compile these monthly spreadsheets over the years, but they are not used for any specific purpose. Initial comparison of these spreadsheet flow estimates with actual flow metering data collected as part of Gannett Fleming's October 2008 CSO Characterization Report indicated that further investigation into the flow estimating procedures may be warranted. Because of the uncertainty in the spreadsheet results, they are simply maintained as directed by DEP."

Efforts to develop a more accurate model should be outlined in the updated LTCP.

2. **Determine how to handle and treat wet weather flow at the wastewater treatment plant** *(due 180 days of August 1, 2011).* As per an email from the applicant's consultant, dated September 10, 2017: "The Authority does have wet weather standard operating procedures developed for handling wet weather events at the WWTP. Although the procedures are not written down, they are followed by the certified operators when flows increase. These procedures include:

    a. An actuated valve located along the main interceptor to the head of the plant is controlled through the Authority's SCADA system to activate and open based on the influent metered flow at the WWTP.
        i. If the WWTP influent flow reaches or exceeds a set flow rate (currently set to 16.5 MGD), the actuated valve will begin to open to partially divert flow through CSO No. 002's Storm King grit removal system and disinfection system prior to discharge out Outfall No. 002. Once the actuated valve is opened, sodium hypochlorite disinfection of the CSO No. 002 outfall begins. Dosage is proportional to the Outfall No. 002 flow to ensure adequate disinfection of the discharged effluent.
        ii. The actuated valve continues to open and close to maintain a maximum flow rate of 16.5 MGD through the WWTP.

    b. The WWTP's screening and grit systems are controlled through the Authority's SCADA system to activate and increase their run-time frequency based on the influent metered flow at the WWTP.
        i. If the WWTP influent flow reaches or exceeds a set flow rate (currently set to 11.0 MGD), the screens begin to operate at a higher speed.
        ii. If the WWTP influent flow reaches or exceeds a set flow rate (currently set to 11.0 MGD), the grit system begins to operate continuously. It is normally operated on a timer that runs 1 hour every 4 hours.

    c. An actuated valve located after the trickling filter biotowers is controlled through the Authority's SCADA system to activate and open based on the aeration tank metered flow at the WWTP.
        i. If the aeration tank flow reaches or exceeds a set flow rate (currently set to 8.9 MGD), the actuated valve will begin to open to partially divert flow around the aeration tanks to control washout of the biomass. The diverted flow is reintroduced near the end of the aeration tanks.
        ii. The actuated valve continues to open and close to maintain a maximum flow rate of 8.9 MGD through the aeration tanks.
    d. All SCADA flow set-points are inputted by certified operators and the system can also be run on manual if desired. While unique situations may require operators to adjust set-points and process operations on a case-by-case basis to best operate the facilities, these wet weather procedures are typically followed."

Part C Special Condition IX.F is added to the permit requiring the permittee to develop a written High Flow Management Plan within one year of the effective date of the permit.

3. **Diversion Chamber No. 7 Construction – separator with disinfection and meter** *(due January 31, 2008).* This was completed in 2009.

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4. **Treatment Plant Diversion Chamber Characterization** *(due 180 days of August 1, 2011).* Vortex separator installed in 2011.

5. **Diversion Chamber No. 12 separation design to be completed by Hazle Township** *(GHJSA expected that Hazle Township would have completed this milestone by February 28, 2013).* Hazle Township performed limited separation but was unable to separate the diversion chamber. A study is proposed by GHJSA to identify cross connections from Hazleton City and eliminate them if needed. A LSA Grant application was submitted through Hazle Township on behalf of GHJSA to fund the project. A copy of the application was provided to DEP.

A timeline for this project shall be included in the permittee's revised Long Term Control Plan (LTCP), which is due 180 days after the permit effective date.

6. **Study of 6-block area tributary to Diversion Chamber No. 6 to be completed by the Borough of West Hazleton** *(GHJSA expected that the Borough of West Hazleton would have completed this milestone by February 28, 2013).* The task was not performed. GHJSA acquired the borough's collection system in 2013 and currently has a LSA Grant application submitted for a study and construction to separate the sewers in this area. A copy of the application was provided to DEP.

A timeline for this project shall be included in the permittee's revised Long Term Control Plan (LTCP), which is due 180 days after the permit effective date.

7. **Diversion Chamber No. 4 elimination study to be completed by the City of Hazleton** *(GHJSA expected that the City of Hazleton would have completed this milestone by February 28, 2013).* GHJSA does not believe that the City of Hazleton completed the elimination study prior to the Authority resuming ownership and responsibility of the system. The Authority completed the following projects upon taking control of the system, without the elimination study:

    a. Sewer separation construction projects were completed in 2016 in the Bunton Bock area within the drainage area of CSO No. 016, located at Mill Street in the City of Hazleton. New separate sanitary sewer mains were constructed on Mill Street, Hazle Street, Chestnut Street, Cranberry Avenue, and Walnut Street. Sanitary service laterals to these new mains were also connected. Approximately 4,000 linear feet of new pipe and 26 new manholes were installed. Completion of this project was expected reduce or eliminate the overall CSO discharges from Outfall No. 016.

    b. Removal of rain leaders and prohibited storm sewer connections to the sanitary sewer system upstream of the newly separated area is on-going and expected to be completed in 2017. As of June 21, 2017, 548 of the 870 rain leaders have been inspected and 380 of the 870 rain leaders have been disconnected from the sanitary system.

    c. Post-construction flow monitoring will follow in 2017/2018 and elimination of the diversion chamber is anticipated in 2018/2019.

A timeline for this project shall be included in the permittee's revised Long Term Control Plan (LTCP), which is due 180 days after the permit effective date.

In a letter to the Department, dated September 29, 2017, GHJSA provided a summary of work completed to date and an updated timeline for remaining tasks with regards to the CSO treatment facility located at Autumn Street and Ridge Avenue in Hazle Township. Preliminary study has shown that no stormwater flow from Hazle Township enters the CSO, and work will be concentrated within the combined collection system located in West Hazleton Borough. The updated status of the task schedule is as follows:

- Flush & clean combined mains and manholes — Completed
- CCTV inspection of combined mains — Completed
- Mapping of storm inlets connected to combined mains — Completed
- Flow monitoring (pre-construction) — In progress – complete December 2017
- Dye testing to identify roof drains, leaks, etc. — In progress – complete December 2017

Summary of Review

- Flow reduction project engineering & design — December 2017 to April 2018
- Flow reduction project construction — June 2018 to October 2018
- Combined system repairs (as needed) — June 2018 to October 2018
- Flow monitoring (post-construction) — October 2018 to March 2019
- Final report — March 2019

The submittal of the final report has been included as a Scheduled Interim Milestone in Part C.II.G of the permit.

GHJSA's LTCP was last revised in June 2001. The following list summarizes the Nine Minimum Controls and describes how the permittee's LTCP and latest CSO Status Report address the controls:

1. *Proper operation and regular maintenance programs for the sewer system and the CSOs.*

As per the LTCP, "The Superintendent of the treatment facilities submits a report of CSO overflows occurring during the reporting period. The reports include dates, duration, causes, estimated flows, any maintenance activities associated with the combined collection/conveyance system, and remediation of visually observed downstream effects. These reports are appended to the minutes of the Authority meetings and are available for public review at the Authority office."

2. *Maximum use of the collection system for storage.*

As per the LTCP, "Diversion chamber inventory and inspection activities are utilized as a means of maximizing storage of wet weather flows in the sewer system to the extent practical, which maximizes flows that are treated at the POTW."

While inventory and inspection activities are essential in enabling the identification of serious deficiencies that restrict the use of the system's available storage capacity, there are other aspects of this control measure that should be addressed, such as: tide gate maintenance and repair, adjustment of regulator settings, restrict inflows, localized upstream detention, upgrade/adjustment of pump operations at interceptor lift stations, and removal of other obstructions to flow.

The LTCP mentions technologies that can be used to maximize storage in the collection system, but the LTCP does not include plans to implement those technologies.

3. *Review and modification of pretreatment requirements to assure CSO impacts are minimized.*

The LTCP mentions this control measure, but other aspects need to be addressed, such as: assessing the impact of nondomestic discharges on CSOs (especially for Outfall 002, which is downstream of most of the industrial discharges in the collection system), evaluation of feasible modifications (e.g. prohibition of batch discharges or some sort of detention to prevent discharges during wet weather events), and documentation of actions taken.

4. *Maximization of flow to the WWTP for treatment.*

The LTCP does not address most of the control measures recommended in EPA's Guidance for Nine Minimum Controls (EPA doc. no. 832-B-95-003).

5. *Prohibition of CSOs during dry weather.*

As per the LTCP, the permittee utilizes the block testing technique to check for dry weather CSO discharges. The 2016 CSO Status Report indicated that one dry weather overflow occurred in 2016 as part of the Gashouse pump station force main rehabilitation and replacement project via controlled bypass. The updated LTCP shall include specific control measures and a plan for complete elimination of all dry weather overflows.

6. *Control of solid and floatable materials in CSOs.*

As per the LTCP, "The City, Borough and Township tributary to the Authority's system have active street cleaning, solid waste collection and disposal, and recycling programs to control the amount of solid and floatable materials in the overflows. The Authority has also instituted a program of inspecting various storm sewer inlets throughout the collection systems and recording conditions on a standardized Storm Sewer Inlet Inspection form."

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As per the 2016 CSO Status Report, "Visual inspection of the receiving streams at the Outfalls is performed weekly to detect the presence of floatable solids that would warrant installation of capture devices. At this time, no visible impact on the receiving streams has been noted."

CSO outfalls 002 and 003 include vortex separators to reduce solids and floatables in the discharged wastewater.

As part of the LTCP, the Authority shall keep records of the weekly visual inspections and be sure to have them available for public and DEP review. GHJSA should include steps to be taken in the event the discharge of solids/floatables becomes an issue at any of their CSO outfalls.

7. Pollution prevention.

As per the LTCP, "The City, Borough and Township tributary to the Authority's system have active street cleaning, solid waste collection and disposal, and recycling programs to control the amount of solid and floatable materials in the overflows. The Authority has also instituted a program of inspecting various storm sewer inlets throughout the collection systems and recording conditions on a standardized Storm Sewer Inlet Inspection form. In addition to the aforementioned pollution prevention measures, the Authority has initiated an advertisement campaign in the local newspaper (Hazleton *Standard-Speaker*). The first advertisement provides public education on the subject of proper recycling of used motor vehicle fluids and counseling against the use of storm sewer inlets as points of disposal. Future topics planned to be published on a quarterly basis include:

- General explanation of the CSO control program,
- Overview of issues pertaining to prohibiting roof drain and sump pump connections to the combined sewer system,
- Description of the ecology of wastewater treatment, and
- Explanation of citizen responsibility for the environment."

The updated LTCP shall include updates on the measures described above as well as plans for future pollution prevention measures. Aspects of the pollution prevention program described in GHJSA's 2016 CSO Status Report should be included in the LTCP.

8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.

As per the LTCP, "At the regulary scheduled Authority meetings, monthly public meetings subject to the Commonwealth of Pennsylvania's open meeting "sunshine" law, the Superintendent of the treatment facilities submits a report of CSO overflows occurring during the reporting period. The reports include dates, duration, causes, estimated flows, any maintenance activities associated with the combined collection/conveyance system, and remediation of visually observed downstream effects. These reports are appended to the minutes of the Authority meetings and are available for public review at the Authority office."

Posting at CSO outfalls is advisable where outfalls are visible and the affected shoreline areas are accessible to the public. Although public notification actions have no direct effect on reducing overflows and pollutant loads from CSO systems, or on minimizing water quality impacts, notifications will diminish the potential risk of adverse public health effects and will also increase public awareness and might increase public support for CSO control programs.

9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

As described above, a comprehensive inspection or monitoring program helps meet the objectives of this control measure. The Authority shall include an assessment of the effectiveness of any CSO control measures already implemented in the updated LTCP.
The following list summarizes the nine elements of a LTCP (see EPA doc. EPA 832-B-95-002) and describes how the permittee's LTCP and latest CSO Status Report address the controls:

1. Continued implementation of the nine minimum controls

See comments above.

2. Protection of sensitive areas (recreation areas, public water supply, unique ecological habitat, etc.)

Summary of Review

As per the LTCP: "Due to the mining activities in the study area over the years and other factors, there is no knowledge of any sensitive areas in the Authority's drainage basins."

A brief eMapPA search found no environmental points of interest with regards to sensitive areas, however, several public water supply features were found in the collection system drainage area. Those areas should be addressed in the LTCP update.

3. *Characterization, monitoring and modeling of overflows and assessment of water quality impacts*

See response above regarding the LTCP milestone for *Hydraulic Characterization of the CSO's* as well as the response above for NMC #9.

4. *Evaluation and selection of control alternative - presumptive or demonstrative approach*

The control approach has not been clearly identified in the LTCP.

5. *Public participation in LTCP plan development and implementation*

The LTCP suggests several public participation ideas. Going forward, any public participation efforts/results should be documented in the CSO Status Reports.

6. *Implementation schedule and financing plan for selected control options*

Future milestones should include this information.

7. *Maximizing treatment at the existing POTW treatment plant*

See response above for NMC #4.

8. *The selected CSO controls should include a post-construction monitoring program plan adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls. This water quality compliance monitoring program should include a plan to be approved by the Department that details the monitoring protocols to be followed*

See response above for NMC #9.

9. *CSO System Operational Plan*

See response above for NMC #1.

Several other parts of the LTCP need to be revised/updated, including: the number and location of CSOs in the system, the CSO control approach chosen (demonstration vs. presumption) and a plan to reach the goals of the chosen approach, the specific and up-to-date impairments of each receiving water and how GHJSA plans to address the impairments, and an updated implementation schedule. As stated above, the revised LTCP is due within 180 days of the permit effective date.

There are no current or projected overloads at the treatment plant as per the most recently submitted Chapter 94 report (received March 29, 2017). No antidegradation analysis is required since the watershed is not high quality or exceptional value. None of the existing effluent limitations have been made less stringent, therefore, the antibacksliding requirement has been met.

Monitoring frequencies for nutrients (TP, TN, TKN, Nitrate+Nitrite-N) is updated to 2/week as per recommendation from the EPA for other major Chesapeake dischargers. The monitoring frequencies for all other parameters have been updated to conform with the monitoring frequencies recommended in the Department's Technical Guidance for the Development and Specification of Effluent Limitations (doc. no. 362-0400-001).

Monitoring and reporting requirements are continued in this renewal for stormwater outfalls 101, 102, and 103. Semiannual monitoring and reporting is required for TSS, pH, TKN, Total Iron, and Oil & Grease. Additional stormwater requirements are

Summary of Review
included in Part C.VIII. The previously issued permit expired on February 28, 2013 and the application for permit renewal was submitted on time. There are no open violations for this client that would warrant withholding the issuance of this permit.    WQM Modeling.pdf  PENTOX.pdf  Watershed Information.pdf  TRC Calculation.pdf  WET Analysis Spreadsheet.pdf

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	8.9
Latitude	40º 58' 14"	Longitude	-76º 1' 28"
Quad Name	Conyngham	Quad Code	1137
Wastewater Description:	Sewage Effluent		

Receiving Waters	Black Creek	Stream Code	28109
NHD Com ID	65639959	RMI	14.65
Drainage Area	21.3 mi^2	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	2.13	Q_{7-10} Basis	Default LFY
Elevation (ft)	1422	Slope (ft/ft)	0.019
Watershed No.	5-D	Chapter 93 Class.	CWF/MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Metals, pH, Flow Alterations, Suspended Solids		
Source(s) of Impairment	Abandoned Mine Drainage, Combined Sewer Overflow		
TMDL Status	Final	Name	Black Creek, Little Nescopeck Creek, and UNT Little Nescopeck Creek Watershed TMDL

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Danville Municipal Water Authority		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	1123
PWS RMI	122.5	Distance from Outfall (mi)	~46

Changes Since Last Permit Issuance: Point of first use is now at Outfall 001.

Treatment Facility Summary

Treatment Facility Name: Greater Hazleton Joint Sewer Authority WWTP

WQM Permit No.	Issuance Date
4087404	4/22/1987

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Ultraviolet Light	8.9

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
13.35	18,743	Not Overloaded	Thickening, Dewatering	Landfill

Other Comments: WQM permit 4017402 was issued on 10/23/2017 for the installation of a biosolids incinerator and the installation of a centrifuge to replace one of the three rotary presses at the WWTP.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 8.9
Latitude 40º 58' 14" **Longitude** -76º 1' 26"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

A “Reasonable Potential Analysis” (See PENTOX attachment) determined the following parameters were candidates for limitations: Total Cobalt, Free Available Cyanide.

The following limitations were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model/Basis
Dissolved Oxygen	5.0	Minimum	2017 WQM 7.0
Total Residual Chlorine	0.1	IMAX	2017 TRC Spreadsheet
$CBOD_5$	10.0	Average Monthly	Guidance document 391-2000-014
	15.0	Average Weekly	
	20.0	IMAX	
	740 (lbs/day)	Average Monthly	
	1,110 (lbs/day)	Average Weekly	
Total Suspended Solids	10.0	Average Monthly	Guidance document 391-2000-014
	15.0	Average Weekly	
	20.0	IMAX	
	740 (lbs/day)	Average Monthly	
	1,110 (lbs/day)	Average Weekly	
Ammonia-Nitrogen (5/1 – 10/31)	2.3	Average Monthly	2017 WQM 7.0
	4.6	IMAX	
	170 (lbs/day)	Average Monthly	
Ammonia-Nitrogen (11/1 – 4/30)	6.9	Average Monthly	2017 WQM 7.0
	13.8	IMAX	
	510 (lbs/day)	Average Monthly	
	2.00	IMAX	
	70 (lbs/day)	Average Monthly	
Total Cobalt (µg/L)	21.9	Average Monthly	2017 PENTOX
	43.8	IMAX	
	1.62 (lbs/day)	Average Monthly	
Free Available Cyanide	6.0	Average Monthly	2017 PENTOX

(µg/L)	12.0	IMAX	
	0.44 (lbs/day)	Average Monthly	
Net Total Nitrogen (lbs)	216,739	Total Annual	Chesapeake Bay TMDL
Net Total Phosphorus (lbs)	27,092	Total Annual	Chesapeake Bay TMDL

Comments: Limits for Ammonia-N, Total Cobalt, and Free Available Cyanide come into effect three years after the permit effective date.

Whole Effluent Toxicity (WET)

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

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

1. Determine IWC – Acute (IWCa):

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

[(8.9 MGD x 1.547) / ((2.13 cfs x 1.0) + (8.9 MGD x 1.547))] x 100 = **87%**

Is IWCa < 1%? ☐ **YES** ☒ **NO** → **Chronic tests required**

If the discharge is to the tidal portion of the Delaware River, indicate how the type of test was determined:

N/A

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

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = IWCa / 0.3 = **% ← N/A**

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

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

[(8.9 MGD x 1.547) / ((2.13 cfs x 1.0) + (8.9 MGD x 1.547))] x 100 = **87%**

3. Determine Dilution Series

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

Dilution Series = 100%, 94%, 87%, 44%, and 22%.

WET Limits

Has reasonable potential been determined? ☐ YES ☒ NO

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

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

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A