pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0020435**
Facility Type	**Non-Municipal**	APS ID	**840244**
Major / Minor	**Minor**	Authorization ID	**1083710**

Applicant and Facility Information

Applicant Name	**Aqua Pennsylvania Wastewater Inc.**	Facility Name	**White Haven WWTP**
Applicant Address	762 W Lancaster Avenue	Facility Address	One Aqua Way
	Bryn Mawr, PA 19010-3489		White Haven, PA 18661
Applicant Contact	Gordon Miller	Facility Contact	Gordon Miller
Applicant Phone	(610) 520-6384	Facility Phone	(610) 520-6384
Client ID	62614	Site ID	257459
Ch 94 Load Status	Not Overloaded	Municipality	White Haven Borough
Connection Status	No Limitations	County	Luzerne
Date Application Received	July 31, 2015	EPA Waived?	Yes
Date Application Accepted	August 5, 2015	If No, Reason	-

Purpose of Application: Renewal of NPDES Permit

Summary of Review

This is a 0.60 MGD NPDES Permit Renewal Application for a sewage discharger to Lehigh River (Stream Code# 3335, HQ-CWF). 2014 annual average flow at 0.361 MGD, with highest monthly flow of 0.473 MGD in April.

Background:

- This nonmunicipal STP receives municipality flows (subject to Chapter 94 Reporting) from the Borough of White Haven, Borough of East Side, Dennison Township, Kidder Township, and Penn Lake Borough.
- **The collection system (only partly owned by Aqua) is subject to SSO events. See Treatment Plant Section and Compliance Section for details. SSO report forms will be added to the Final NPDES Permit-required supplemental forms.**
- **Facility has a DRBC Docket (No. D-2002-042-4). The Docket Table A.1 identified an 85% minimum monthly reduction DRBC Docket requirement that was assumed to be in the previous nonmunicipal NPDES Permit.**
- **Aqua plans to use the facility as a Regional Sewage Sludge Dewatering facility for three of its local STPs after completion of permitted upgrades (new receiving point for hauled-in sewage sludge; new screw dewatering unit included). Filtrate will be directed to the treatment portion of plant for treatment.**
  - **To allow for Chapter 94 influent monitoring and DRBC 85% limit, an Internal Monitoring Point No. 101 will address the incoming regular sewage. An Internal Monitoring Point No. 102 will allow for monitoring of filtrate prior to direction into the site treatment process. The facility will have to calculate incoming CBOD5 loadings when hauled-in sewage sludge filtrate is directed into the STP.**
  - **Hauled-in Waste Forms will be included with the Final NPDES Permit.**
  - **Expansion of hauled-in waste service (other sources) would require a NPDES Permit Part A.III.C.2 (Planned Change to Waste Stream) notification.**
- **WQM Permits state an inaccurate value for organic design capacity. The 2006 WQM Permit Design Engineer Report identified the maximum monthly average design capacity as "1,301 lbs CBOD5/day" (not BOD5), with the WQM Permit-identified capacity (2,000 lbs CBOD5/day) being the daily maximum capacity. The facility**

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	June 12, 2019
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Summary of Review

would be outside its organic design range if >1,301 lbs CBOD5/day were received on a monthly average basis.

- **Facility is in the process of installing WWTP upgrades (including UV disinfection with liquid chlorine provisions being allowed).**

Special Conditions: New conditions bolded.

- Part C.I.A, B. C, and **D**: Standard conditions (Stormwater prohibition; Necessary property rights; Residuals Management; **Planning**)
- **Part C.I.E: New Chlorine Minimization (UV disinfection with back-up liquid chlorination)**
- Part C.I.F: Existing Changes in Effluent/Stream condition
- **Part C.I.G: New High Flow Management Plan condition due to near hydraulic overload conditions in 2017 and 2018.**
- **Part C.II: New Standard Solids Management Conditions**
- **Part C.III: New WQBEL for Toxics Condition (copper)**
- **Former Part C conditions have been deleted as redundant to standard Part A and B language (Chapter 94 Reporting; CBOD5 test method; permit basis flow)**.

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	Design Flow (MGD)	0.60
Latitude	41º 3' 34.04"	Longitude	-75º 46' 16.11"
Quad Name	White Haven	Quad Code	1039 (2.23.3)
Wastewater Description:	Sewage Effluent		

Receiving Waters	Lehigh River (HQ-CWF)	Stream Code	3335
NHD Com ID	26281411	RMI	71.9 per DRBC Docket
Drainage Area	311 square miles	Yield (cfs/mi^2)	0.1613
Q_{7-10} Flow (cfs)	50.16	Q_{7-10} Basis	See below
Elevation (ft)	1082	Slope (ft/ft)	See below
Watershed No.	2-A	Chapter 93 Class.	HQ-CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	Final	Name	Lehigh River TMDL

Background/Ambient Data		Data Source
pH (SU)	6.49	2/25/2008 Sample 1300256 per E-maps.
Temperature (°F)	36.1	See above
Hardness (mg/L)	18	NPDES Permit Renewal Application
Other:	-	-

Nearest Downstream Public Water Supply Intake		Hazleton City Water Authority ID# 101801-001	
PWS Waters	Lehigh River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	~9.4

Changes Since Last Permit Issuance: None known.

Other Comments:

Slope and Q7-10 Flow: The facility is located between two USGS stream gage locations. Their known data was used to calculate average slope to obtain Outfall #001 elevation (~25.46 foot/mile). USGS PAStreamstats estimated the Outfall drainage area. Differences between gage was used to calculate the Outfall #001 elevation and LFY was based on more conservative upstream gage location.

Location	Elevation	Drainage Area	Distance from Outfall	Q7-10 flow from USGS Report
Gage# 01447800 (Lehigh River at Francis Slocum near White Haven)	1212.95 Feet	290 square miles	~5.22 miles upstream	46.8 CFS (0.1613 CFS/square mile)
Outfall 001	~1080 Feet	311 square miles	-	-

Gage# 01448000 (Lehigh River at Tannery, PA)	1042.06 Feet	322 square miles	~1.49 miles downstream	66.7 CFS (0.2071 CFS/square miles)

TMDL: No waste load allocations for this facility (AMD, pH), which is not expected to be a significant source of AMD metals. Application data can be found in Effluent Limits Section.

TMDL WQS: For High Quality and EV waters, applicable water-quality criteria are determined using the unimpaired segment of the TMDL water or the 95th percentile of a reference WQN stream. For the Lehigh River, WQN125 the Lehigh River is used as the reference water (Table 3 of the TMDL). The following table shows the criteria used in the Lehigh River TMDL development. Since the critical use for manganese is public water supply, the criteria for manganese of 1.0 mg/l was used.

TMDL WQS for HQ segments of Lehigh River:

Parameter	Criterion Value (mg/l)	Nature
Aluminum (Al)	0.228	Total Recoverable
Iron (Fe)	0.247	Total Recoverable
Manganese (Mn)	1.000	Total Recoverable

Treatment Facility Summary

Treatment Facility Name: White Haven WWTP

WQM Permit No.	Issuance Date	Scope
4017404	**November 21, 2017**	**New fine screen, modification of grit system piping, conversion to UV disinfection, and modification of sludge dewatering equipment (including new screw press dewatering system with dewatered sludge landfilled; the converted sludge holding tank will be aerated). Back-up liquid chlorine disinfection/filamentous remediation added after permit action.**
4017403	**October 4, 2017**	**Sewer extension to reduce SSOs by pipe replacement**
4006405-T1 4009409-T1	May 1, 2014	WQM Permittee name change
4009409	October 8, 2009	Modifications to Powerhouse Rd. Pump Station & construction of 1,380 feet of associated 8-inch force main (design modification to WQM ID# 4006405. (Part of Foster Township Wastewater System Upgrade)
4006405	April 23, 2007	WWTP expansion to 0.60 MGD (from 0.45 MGD), Powerhouse Rd. Pump Station upgrade & Upgrade of the gravity sewer conveyance system within the Borough of White Haven, including construction of a 10-inch PVC sewer along S.R. 0940 and replacement of existing 8-inch sewer sections with 10-inch PVC.
4002402	March 17, 2003	Re-rate of the wastewater treatment plant from 0.34 MGD to 0.45 MGD. That permit was superseded by WQM Permit 4006405 per 2014 WQM IRR.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Activated Sludge	Conversion to UV from Chlorine Gas permitted. Liquid chlorine will be back-up.	0.60

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.60**	**1,301 lbs CBOD5/day (monthly average)** **2,000 lbs CBOD5/day (daily max)***	Not Overloaded	Aerated sludge holding tanks plus plate & frame press with screw pump dewatering permitted	Disposal

*** Per 2006 WQM Permit Application Design Engineer Report:**

- **2000 lbs CBOD5/day Daily Max capacity. No design capacities given in terms of BOD5. The Module 1 value assumed 2,000 lbs BOD5/day but this conflicts with Design Engineer Report.**
- **1,301 lbs CBOD5/day maximum monthly average flow capacity**
- **1,101 lbs CBOD5/day annual average flow.**

**Per 2006 WQM Permit Application Design Engineer Report Module 1, the facility was designed to handle a 2.34 MGD peak instantaneous flow, 2.10 MGD peak hourly flow, 1.50 MGD max daily flow, and 0.78 MGD maximum monthly average flow.

Changes Since Last Permit Issuance:

WWTP upgrades (projected to be installed by July 2019) permitted including provisions for acceptance of local sister STP sewage sludge for dewatering via new screw press (prior to landfilling).

- **Specifically, the WQM Permit Application sources included Kidder (NPDES Permit No. PA0061204 @ 467,000 gallons), Thornhurst (NPDES Permit No. PA0060411 @ 123,000 gallons), and Pine Crest (NPDES Permit No. PA0061719 @ 159,000 gallons) which lack industrial/commercial customers.**
- **The facility would process up to 1.6 million gallons of sewage sludge (at average 1.5% solids), during 200 operating days (6 hours per day) per year (with combined filtrate and normal loadings estimated at 577 lbs BOD5/day). A new 4-inch cam lock unloading hydrant will be installed adjacent to the existing aerobic digester (ET-1) and will drain into the existing (idle) clarifier (ET-3). The clarifier will be retrofitted with a new blower and coarse bubble diffusors, and converted into a liquid sludge mixing/holding tank (aerated at all times per WQM permit application). A new sludge transfer pump will be pump to converted sludge mixing/holding tank contents to the existing aerobic digester. New transfer pumps will pump liquid sludge to the new screw pump (with polymer addition and press wash water pump (utility water)). Filtrate will go to MH- 9 and WWTP drain. Dewatered sludge will be landfilled. They estimate the average daily filtrate at 9,800 GPD. The WWTP Influent Sampler will be relocated to the Influent Pump Station PS-1, but drawings do not show where filtrate flows are directed to (in the overall treatment process).**

Other Comments:

The 2018 Chapter 94 Report Information: Existing NPDES Part C.I.F Condition: "The permittee shall comply with the requirements of Chapter 94, Municipal Wasteload Management. The permittee shall submit a complete and accurate Wasteload Management Annual Report to the Department, in duplicate, by March 31st of each year. The Report shall contain the information under Section 94.12 of the Department's wasteload management regulations, Title 25, Chapter 94".

- WWTP Description:
  - NPDES Application indicates existing WWTP includes sewage grinders/comminutors, grit removal, three (3) activated sludge reactors, three (3) clarifiers, three (3) post-aeration tanks, three (3) chlorine contact tanks, two (2) sludge holding tanks, and plate & frame press for sludge dewatering. Facility uses lime for pH control and Sodium Thiosulfate for dechlorination.
  - Chapter 94 Report indicated: Sewage grinding/comminution, grit removal, activated sludge reactors, clarification, post-aeration, disinfection, and aerobic sludge holding tanks, plus alternate arrangements for liquid sludge removal.
  - The Report estimated July 2019 for completion of 2017 WQM Permit No. 4017404 upgrades (New fine screen, modification of grit system piping, conversion to UV disinfection, and modification of sludge dewatering equipment (including new screw press dewatering system with dewatered sludge landfilled; the converted sludge holding tank (former clarifier) will be aerated). They also rehabilitated a lime silo in 2018.
- **Hydraulic Overloading in Collection System (SSOs)** and near WWTP hydraulic overloading in 2018:
  - **STP Near Overload Conditions**:
    - Report uses inaccurate 0.6 MGD hydraulic capacity, whereas it is 0.60 MGD per last WQM Permit.
    - There were 4 months of >0.60 MGD flows in 2018 (escaping Chapter 94 definition for WWTP hydraulic overloading by being nonconsecutive). Maximum 3-month Monthly Average was 0.6057 (above 0.60 Hydraulic Design Capacity) in 2018. Other years:
      - There were two consecutive months of >0.60 MGD flows in 2017.
      - No >0.60 MGD flows in 2014-2016.
      - 2018 ADF was 0.5208 MGD.
    - The Chapter 94 Spreadsheet did not include monthly precipitation data for part of 2016, 2017 or 2018.
    - They are relying on EDU projections to indicate no projected hydraulic overloading, but Chapter 94 definition is broader, with I&I contributing to overloading. **NOTE**: The 2017 WQM Permit for WWTP upgrades includes provisions for acceptance of liquid sludges from local sister facilities for dewatering, with filtrate including new proposed loadings on this facility.
  - **SSOs Overloading In Collection System:**

- **Hickory Hills Pump Station: SSOs on 2/25, 3/2, 5/19, 5/23, 7/24, and 11/24. Pump Station could not keep up with rain events per Report.**
- **SR 940 Mt. Laurel Pump Station: 3/5/2018 overflow blamed on pump problems.**
- **8-inch Sewer Main MH SSO (Erie Street MH #2 White Haven): 3/26/2018 overflow on blamed on plug.**
- **4-inch Sewer Main MH SSO (154 Hilary Drive White Haven Estates): 4/13/2018 overflow blamed on plug.**
- **Sewer Main (Corner of Towanda St and Berwick St.; Chemung St. & Berwick St. White Haven): 7/25/2018 overflow (Two manholes) blamed on heavy rains.**
- **Not sure if they are or are not reporting SSOs on non-Aqua-owned collection system areas (not all tributary municipalities provided information). Foster Township indicated their collection system (including Hickory Hills) was in fair to poor condition, but that there were "no known areas of the collection system that are exceeding hydraulic capacity".**

o **I&I-related work in 2018 included:**
- **No mention of 2017 WQM Permit No. 4017403 (sewer extension from proposed MH 96A to existing MH 48, with 135 LF of ductile pipe to reduce SSOs project).** NOTE: No work was done in 2017 per Chapter 94 Report.
- **1000 LF of CIPP lining and replacement of 300 LF of sewer. NOTE: The 1/24/2019 Aqua PA Letter indicated 600 LF of 8-inch sewer line was replaced and that the White Have gravity collection system had been televised.**
- **Contracted "Mr. Rehab" to clean and televise portions of the collection system owned by Aqua. They propose to repair/replace additional sections of sewer main based on Mr. Rehab data.**
- **Attachment D: "The policy is to respond to complaints of line blockages and to work with the Borough to replace sewer lines during the Borough's road reconstruction projects. Wastewater is adequately conveyed to the WWTP with no hydraulic or operational problems".**

o **July 2018 Fecal Coliform exceedance was blamed on extreme flows due to heavy rains in the Report.**

- No organic overloading at present:
  - **Caution: The Chapter 94 Report-assumed 2000 lbs BOD5/day organic design capacity is inaccurate. First, BOD5 (Biochemical Oxygen Demand, 5-day test) include nitrogenous component not in Carbonaceous Biochemical Oxygen Demand (CBOD); the Design Engineer Report also indicated facility monthly average design capacity is lower (1,301 lbs CBOD5/day) than the daily max (2,000 lbs CBOD5/day); and previous facility rerating means there is some potential for as-built/as-operated restrictions below the Design Engineer figures.**
  - Future hauled-in sewage sludges (for dewatering) will be adding to historic loadings and will constitute indirect industrial dischargers in future (no industrial user identified in 2018 Report).
    - Given 292 lbs BOD5/day annual average loadings in 2018, they have organic capacity for the hauled-in sewage sludge.
    - They will have to differentiate organic loadings and monitor filtrate loadings to allow for future determinations of whether the facility treatment units are being organically overloaded.

- Pump Stations:
  - Dennison Township has one pump station (no capacity information)
  - Foster Township has two pump stations (360 GPM and 300 GPM)
  - East Side Borough (Pump Station No. 3) had no capacity information
  - Aqua-owned Pump Stations:
    - Blue Ridge (200 GPM), aka Pump Station No. 1 (northside of SR 940) which directs flow to Pump Station No. 2.
    - Mount Laurel (215 GPM) aka Pump Station No. 2
    - Power House Road (400 GPM)

- Sludge Disposal:
  - 464,442 gallons of liquid sludge hauled to Greater Hazleton. No mention of plan for facility to accept and process local sister STP biosolids.
  - No information pertaining to hauled-in wastes found in Report.

The 2015 Chapter 94 Report indicated the WWTP expanded to 0.60 MGD capacity in October 2009. The (dual submersible type) pump stations' capacities were also identified (based on 250 GPD/EDU and peaking factor of 4, assuming one pump out-of-service):

- Blue Ridge Pump Station: 200 GPM (0.288 MGD) Design Flow estimated
- Mount Laurel Pump Station: 215 GPM (0.309 MGD) Design Flow estimated
- Power House Road Pump Station:
    - 400 GPM (0.576 MGD) Design Flow estimated.
    - WQM ID# 4006405 T-1 Pump Stations indicated:
        - Design Capacity: 0.543 MGD
        - Influent: Design Capacity: 2.34 MGD

Minimum Removal Efficiencies:

Constituent	**Influent (average)**	**Effluent (average)**	**Removal %**
BOD5	210.9 mg/l	2.58 mg/l CBOD5 with 120% ratio is equivalent to 3.096 mg/l	~98% removal
TSS	199.2 mg/l	3.29	~98% removal

Compliance History

DMR Data for Outfall 001 (from May 1, 2018 to April 30, 2019)

Parameter	APR-19	MAR-19	FEB-19	JAN-19	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18	MAY-18
Flow (MGD) Average Monthly	0.5329	0.457	0.437	0.4955	0.5221	**0.6576**	**0.6035**	0.5561	0.5466	0.3941	0.277	**0.6279**
Flow (MGD) Daily Maximum	1.1317	1.1991	0.7141	1.3306	1.3216	1.0935	1.828	1.1546	1.3038	**1.4886**	0.4492	1.2914
pH (S.U.) Minimum	6.64	6.97	7.04	6.42	6.63	6.89	6.86	7.02	6.92	6.79	6.01	6.73
pH (S.U.) Instantaneous Maximum	7.56	7.70	7.69	7.54	8.12	7.79	7.85	8.89	7.72	7.91	8.22	7.51
DO (mg/L) Instantaneous Minimum	8.95	7.68	9.88	8.39	7.54	8.05	7.60	7.01	6.57	6.87	6.98	8.52
TRC (mg/L) Average Monthly	0.19	0.22	0.17	0.26	0.18	0.22	0.13	0.18	0.26	0.18	0.17	0.16
TRC (mg/L) Instantaneous Maximum	0.48	0.49	0.39	0.47	0.46	0.46	0.45	0.49	0.5	0.50	0.47	0.49
CBOD5 (lbs/day) Average Monthly	14.36	< 9.89	14.29	< 9.44	< 8.06	< 10.24	< 8.59	< 9.48	< 8.40	< 9.44	< 3.87	< 9.36
CBOD5 (mg/L) Average Monthly	3.4	< 3.5	4.25	< 2.8	< 2	< 2	< 2.0	< 2	< 2	< 2.40	< 2	< 2
TSS (lbs/day) Average Monthly	< 12.35	< 8.91	< 10.92	< 10.57	< 12.09	< 15.36	< 12.89	< 14.23	< 12.61	< 14.60	5.8	< 14.04
TSS (mg/L) Average Monthly	< 3	< 3.0	< 3.25	< 3	< 3	< 3	< 3.0	< 3	< 3	< 3.8	3	< 3
Fecal Coliform (CFU/100 ml) Geometric Mean	< 7.81	< 6.45	< 4.84	48.3	< 1.57	< 1.43	< 7.26	< 3.66	< 1.19	< 4.68	< 1.86	< 1.15
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2420	1733	548	2420	< 3	3	32	12	2	1120	4	2
Ammonia (lbs/day) Average Monthly	< 5.06	3.23	3.95	< 0.46	< 0.51	0.66	< 0.43	< 0.51	0.57	0.84	0.30	< 0.54
Ammonia (mg/L) Average Monthly	< 1.09	1.1	1.17	< 0.13	< 0.13	0.13	< 0.1	< 0.11	0.13	0.21	0.16	< 0.12

Compliance History

Effluent Violations for Outfall 001, from: June 1, 2018 To: April 30, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform*	07/31/18	IMAX	1120	CFU/100 ml	1000	CFU/100 ml

*3/2017 Fecal Coliform exceedance also blamed on high flows.

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSP CATEGORY	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR
WHITE HAVEN WWTP	WPCNP	2705366	PF	03/14/2018	Administrative/File Review	Violation(s) Noted	OPILA, TAMI
WHITE HAVEN WWTP	WPCNP	2476606	PF	04/20/2016	Compliance Evaluation	No Violations Noted	HARTMAN, JEFFREY

Other Comments:

Permit administratively extended due to timely renewal application.

3/14/2018: NOV issued for failure to pay annual fees
4/5/2018: Administrative Order (annual fees) issued.

SSO Events: The NPDES Permit Renewal Application indicated there were no SSO events or bypasses, but that is contradicted by the DEP Files containing numerous SSO report forms. There is an apparent pattern of SSO events in the sewerage system going back for years per SSO reports found in the DEP files, indicating some form of problem (whether need for a more proactive maintenance plan or corrective action is presently unclear). Both the 2014 Chapter 94 & 2015 Chapter 94 Annual Wasteload Management Report left the DEP Form Item 6 SSO item blank. Available Chapter 94 reports indicate the following:

- **10 SSO Reports in 2018: See Treatment Section for additional information.**
- **1 SSO Reports for 2017: 10/6/2017 SSO**
- **5 SSO Reports for 2016: 2/9/2016 (Daily Max flow of 0.9480 MGD); 2/16/2016; 2/18/2016; 5/5/2016 (Daily Max flow of 0.7116 MGD); 6/4/2016**
- **4 SSO reports for 2015: 5/22/2015 (Daily Max flow of 0.5689 MGD); 6/14/2015 (Daily Max flow of 0.8720 MGD); 6/22/2015; 6/28/2015**

Open Violations by Client Number: The 6/12/2019 WMS Query (open violations by client number) indicated no open violations.

Permit: PA0020435
Client ID: 62614
Client: All

Open Violations: 0

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

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.60
Latitude 41º 3' 34.03" **Longitude** -75º 46' 17.16"
Wastewater Description: Sewage Effluent

Permit limits and/or monitoring: Changes are bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5 (May 1 – Oct 31)	85 Lbs/d 17.0 **Report** 34.0	Monthly Average Monthly Average **Daily Max** IMAX	Existing WQBELs supported by water quality modeling.
CBOD5 (Nov 1 – April 30)	100 Lbs/d 20.0 **Report** 40.0	Monthly Average Monthly Average **Daily Max** IMAX	See above
CBOD5 removal	**85%**	**Minimum Monthly Average**	**DRBC Docket requirement incorporated per Chapter 92a.12.**
TSS	105 Lbs/d 21.0 **Report** 42.0	Monthly Average Monthly Average **Daily Max** IMAX	Existing WQBEL retained.
pH	6.0 – 9.0 SU	**Inst. Min** - IMAX	Existing Technology limit (Chapter 92a.47)
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47).
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47).
Total Residual Chlorine (TRC)	0.5**0** 1.0**0**	Average Monthly IMAX	Existing limits supported by water quality modeling (TRC Spreadsheet). The facility has dechlorination facilities. **Retained due to plan for back-up chlorination, antibacksliding, and new Chlorine Minimization Condition.**
Ammonia-Nitrogen (May 1 - Oct 31)	15 (lbs/d) 3.0 **Report** 6.0	Monthly Average Monthly Average **Daily Max** IMAX	Existing WQBEL supported by water quality modeling
Ammonia-Nitrogen (Nov 1 - Apr 30)	45 (lbs/d) 9.0 **Report** 18.0	Monthly Average Monthly Average **Daily Max** IMAX	See above. Winter multiplier used.
Dissolved Oxygen (DO)	5.0	Minimum	Existing WQBEL supported by water quality modeling.
Total Dissolved Solids	**Report (lbs/d)** **1000.0** **2000.0** **2500.0**	**Monthly Average** **Monthly Average** **Daily Max** **IMAX**	**DRBC permit limit in DRBC Docket No. D-2002-042-4 incorporated per Chapter 92a.12.**
Total Phosphorus	**Report (lbs/day)** **Report** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**DRBC monitoring requirement in DRBC Docket No. D-2002-042-4 incorporated per Chapter 92a.12.**
Nitrate-N	**Report (lbs/day)** **Report** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**See above**

Total Nitrogen (TKN + Nitrate-N + Nitrite-N measured in same sample)	**Report (lbs) Report (lbs) Report (lbs/day) Report Report**	**Total Annual (Net) Total Annual Monthly Average Monthly Average Daily Max**	**See above**
Chlorides, Sulfates, and Bromide	Not needed	-	Not required by Reasonable Potential analysis.
Copper	**Report (lbs/d) 0.035 0.054 0.087**	**Monthly Average Monthly Average Daily Max IMAX**	**New limits effective in 3 years with interim monitoring per Reasonable Potential Analysis. Application data was 0.035 mg/l copper (1 sample) with 0.0359 mg/l WQBEL. Antidegradation considerations also apply.**
Lead	Not needed	-	Not needed per Reasonable Potential Analysis. Application data was 0.0004 mg/l.
Zinc	**Report (lbs/d) Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring only per Reasonable Potential Analysis. Application data was 0.060 mg/l.**
AMD metals (Aluminum, Manganese, Iron)	**Report Report Report**	**Annual Average Annual Average Daily Max**	**Annual monitoring to gather information for updating TMDL. Application data was 0.057 mg/l Aluminum, 0.057 mg/l Manganese, and 0.101 mg/l Total Iron (single samples).**
UV Intensity (mW/cm²)	**Report**	**Instantaneous Minimum**	**Due to fecal coliform violation and near hydraulic overload conditions in last two years, daily monitoring required in this permit cycle, effective upon completion WWTP upgrade in progress.**

Comments:

Comments:

- **EDMR changes (instantaneous minimum, significant digits, fecal coliform units).**
- **Additional Daily Max report (no additional sampling).**
- **Due to DRBC-related requirements (influent monitoring; 85% minimum monthly average reduction), facility operations near 0.60 MGD hydraulic design load capacity (apparent I&I), and new variable sewage sludge hauled-in loads, monitoring has been changed to 24-hour composite sampling.**

Reasonable Potential Analysis: See attached Toxic Screening Spreadsheet and PENTOXSD output. Copper was determined to require permit limits. Zinc was determined to only require monitoring.

Antidegradation: No additional degradation is expected on the stream because there is no new, additional or increased loading proposed. The copper WQBEL was calculated by PENTOXSD incorporating the highest (single) copper effluent concentration (taking antidegradation considerations into account) and is nearly identical to the monthly average WQBEL.

Development of Effluent Limitations

Outfall No. 101 (Influent sampling location at headworks) **Design Flow (MGD)** NA – IMP for influent to STP
Latitude 41º 3' 34.03" **Longitude** -75º 46' 17.16"
Wastewater Description: Raw Sewage Influent

Permit Limits and Monitoring:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	Report Lb/d Report Report	Monthly Average Monthly Average Daily Max	Chapter 94 Monitoring requirement also required to address DRBC docket requirement.
TSS	Report Lb/d Report Report	Monthly Average Monthly Average Daily Max	See above.

Comments: New internal monitoring point for raw sewage influent monitoring.

Development of Effluent Limitations

Outfall No. 102 (Filtrate sampling location from screw dewatering) **Design Flow (MGD)** NA – IMP for influent to STP
Latitude 41º 3' 34.03" **Longitude** -75º 46' 17.16"
Wastewater Description: Raw Sewage Influent (filtrate)

Permit Limits and Monitoring:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	Report Lb/d Report Report	Monthly Average Monthly Average Daily Max	Chapter 94 Monitoring requirement
TSS	Report Lb/d Report Report	Monthly Average Monthly Average Daily Max	See above.

Comments: New internal monitoring point for Hauled-in liquid Sewage Sludge dewatering filtrate.

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.6

Facility: Aqua PA White Haven WWTP
Analysis Hardness (mg/L): 23.159
Stream Flow, Q_{7-10} (cfs): 50.16

NPDES Permit No.: PA0020435
Discharge Flow (MGD): 0.6

Outfall: 001
Analysis pH (SU): 7

Parameter		Maximum Concentration in Application or DMRs (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Total Dissolved Solids		494000	500000	No		
Chloride		105000	250000	No		
Bromide		200	N/A	No		
Sulfate		16800	250000	No		
1,4-Dioxane			N/A			
Total Copper		35	2.67	Yes	35.939	Establish Limits
Total Lead		0.4	0.49	No		
Total Zinc		60	34.7	Yes	353.4	Monitor
Total Aluminum		57	750	No		
Total Manganese		57	1000	No		
Total Iron		101	1500	No		

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3335	LEHIGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
71.900	White Haven TP	PA0020435	0.600	CBOD5	25		
				NH3-N	3	6	
				Dissolved Oxygen			5

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
02C	3335	LEHIGH RIVER

RMI	Name	Permit Number	Disc Flow (mgd)
71.90	White Haven TP	PA0020435	0.6000

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
COPPER	35	INPUT	54.606	35.939	AFC
ZINC	60	INPUT	93.61	353.4	AFC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — **Aqua White Haven STP**

50.16	= Q stream (cfs)	0.5	= CV Daily
0.6	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.275	= 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 = 4.760	1.3.2.iii	WLA cfc = 16.817
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 1.774	5.1d	LTA_cfc = 9.777

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	