pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0063592**
Facility Type	**Municipal**	APS ID	**940958**
Major / Minor	**Minor**	Authorization ID	**1425529**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Gilberton Borough Schuylkill County**	Facility Name	**Gilberton Borough POTW**
Applicant Address	2710 Main Street	Facility Address	2710 Main Street
	Mahanoy Plane, PA 17949-8023		Mahanoy Plane, PA 17949-8023
Applicant Contact	Deborah Mallory (Borough Secretary)	Facility Contact	Sean Skeath (M&B Environmental)
Applicant Phone	(570) 874-4790	Facility Phone	(215) 256-0042
Client ID	64908	Site ID	496947
Ch 94 Load Status	Not Overloaded	Municipality	Gilberton Borough
Connection Status	-	County	Schuylkill
Date Application Received	January 31, 2023	EPA Waived?	**Yes.**
Date Application Accepted	March 23, 2023	If No, Reason	**EPA Enforcement has visited facility.**

Purpose of Application: Renewal of NPDES permit.

Summary of Review

This is a 0.100 MGD NPDES Permit Renewal for a POTW (including sewer system by Chapter 92a.2 definition), discharging to Mahanoy Creek (WWF; Impaired by pathogens and AMD).

- They discharged 0.045 MGD AADF (2022), 0.041 MGD AADF (2021), and 0.056 MGD AADF (2020), The highest monthly average flow was 0.060 MGD (December 2022).
- On-Base No. 98441 Resubmittal is the NPDES Permit Application.
- Compliance History indicates long-term O&M issues & wet weather-related issues at this ~20 year-old POTW as documented by DEP/EPA Inspections, DEP Notices of Violation (NOVs), and permit limit exceedances.

Sludge use and disposal description and location(s): 3.1 dry tons sent to Greater Hazelton Joint Sewer Authority.

Part C Special Conditions: Changes bolded

- Part C.I.A, B, C: Existing standard Stormwater prohibition, Necessary property rights, and residuals management conditions.
- **Part C.I.D: New chlorine minimization condition. Chlorine is toxic to aquatic life.**
- **Part C.I.E: New responsible operator identification requirement due to assorted effluent exceedances and Inspection-Report-cited O&M issues at the Treatment Plant and offsite Pump Stations.**
- **Part C.I.F: New O&M Plan condition due to long-term pattern of O&M issues contributing to site noncompliance. Due within ninety (90) days of PED. See Compliance Section for assorted O&M issues.**
- **Part C.I.G: New High Flow Management Plan (HFMP) condition due to wet weather operational problems contributing to permit limit exceedances. Due within 180 days of PED. See Compliance Section for details.**
- **Part C.II: New standard Solids conditions (accidentally omitted in previous NPDES Permit)**

Approve	Deny	Signatures	Date
X		James Berger (signed) James D. Berger, P.E. / Environmental Engineer	September 4, 2024
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Program Manager	9-9-24

Summary of Review
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)	0.100
Latitude	40º 47' 32.92"	Longitude	-76º 14' 50.15"
Quad Name	Shenandoah	Quad Code	1236 (5.19.3)
Wastewater Description:	Sewage Effluent		

Receiving Waters	Mahanoy Creek (WWF, MF)	Stream Code	17556
NHD Com ID	54961271	RMI	-
Drainage Area	20.6 sq. mi.	Yield (cfs/mi^2)	0.2203
Q_{7-10} Flow (cfs)	4.54	Q_{7-10} Basis	USGS PA Streamstats
Elevation (ft)	1,104 (USGS PA Streamstats)	Slope (ft/ft)	-
Watershed No.	6-B	Chapter 93 Class.	WWF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, PH; Pathogens		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE; Unknown source		
TMDL Status	Final (2007)	Name	Mahanoy Creek

Background/Ambient Data		Data Source
		Sample ID: 2556793; Sequence Number: 310; Monitoring Point ID: 179073 (0.02 miles upstream of Outfall) Date Collected: 6/21/2023
pH (SU)	6.34	At Island Street stream crossing
Temperature (°C)	17.99	See above
Hardness (mg/L)	344	See above
Copper Total (ug/L)	<4.00	See above
Lead Total (ug/l)	<1.00	See above
Zinc Total (ug/l)	38.00	See above
Aluminum T (ug/l)	<300	See above
Iron T (ug/l)	14900.0	See above. **No assimilative capacity**
Manganese (ug/l)	3940.0	See above. **No assimilative capacity**

Nearest Downstream Public Water Supply Intake	United Water Pennsylvania		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	>76 miles

Changes Since Last Permit Issuance: Pathogen impairment of stream (unknown sources)

Other Comments:

- Discharge point is downstream of Mahanoy City STP (major STP with CSOs NPDES Permit No. PA0070041) and upstream of the confluence with Shenandoah Creek and the Girardville STP. E-maps shows the area is mining-disturbed. There are three AMD discharges near the confluence with Shenandoah Creek.
- Phase 5 Chesapeake Bay facility.
- Stream Impairments:

- Pathogens: The existing NPDES Permit limits and existing/new O&M-related conditions will prevent contribution to the ongoing impairment.
- AMD metals/pH: The facility is not contributing to the existing AMD impairment per sampling data.

- Mahanoy Creek Watershed TMDL AMD (Metals and pH):
  - No WLA for facility and effectively zero assimilation capacity due to either exceedances of TMDL criteria at the Outfall or downstream (where other orphan AMD discharges would use up any available Aluminum assimilation capacity). From TMDL:

Table 3. Applicable Water Quality Criteria

Parameter	Criterion Value (mg/l)	Total Recoverable/Dissolved
Aluminum (Al)	0.75	Total Recoverable
Iron (Fe)	1.50 0.3	30-Day Average Total Recoverable Dissolved
Manganese (Mn)	1.00	Total Recoverable
pH *	6.0-9.0	N/A

*The pH values shown will be used when applicable. In the case of freestone streams with little or no buffering capacity, the TMDL endpoint for pH will be the natural background water quality. These values are typically as low as 5.4 (Pennsylvania Fish and Boat Commission).

  - Effluent data indicate some AMD contribution to mass loading, but concentrations well below WQS. There are multiple Orphan AMD discharges upstream and downstream of the WWTP.

- Point of First Use: 2015 DEP Biologist Report indicated Point of First Use remains downstream of discharge (>1.5 miles downstream of the downstream Girardville STP discharge point). Chapter 95.5 (Treatment requirements for discharges to waters affected by abandoned mine drainage) states greater degree of treatment (than secondary treatment) will be required to the waters where water quality of the receiving water has or is expected to improve significantly. **All AMD-impaired PA streams are assumed to be improving in quality, so all treatment requirements apply.**
  - The 9/4/2015 DEP Biologist (Sherril Leap) Aquatic Life Protection Memo has confirmed that no macroinvertebrate community at discharge location or at station point 1.5 miles downstream. The point of first use by aquatic life is downstream of the discharge point (location of stream recovery undetermined) except for fish noted as present by USGS Report. The USGS Report Scientific Investigations Report 2004-5291 “Effects of Abandoned Coal-Mine Drainage on Streamflow and Water Quality in the Mahanoy Creek Basin, Schuylkill, Columbia, and Northumberland Counties, Pennsylvania, 2001” (Charles A. Cravotta III) noted the presence of fish upstream at Girardville (downstream of confluence with Shenandoah Creek), i.e. fish are present in Mahanoy Creek.
  - June 30, 2022 DEP Biologist (Timothy Daley) “Point of First Use/Cause Effect Survey Memo” for Shenandoah Creek found aquatic life in Shenandoah Creek at the confluence with Mahanoy Creek (downstream of the facility). There was no data for Mahanoy Creek at that location, but potential for aquatic life must be assumed.

Treatment Facility Summary

Treatment Facility Name: Gilberton Borough POTW

WQM Permit No.	Issuance Date	Scope
5498404	3/26/1999	0.100 MGD STP and collection system, permitting based upon the Design Engineer's professional certification (without detailed Department review per the IRR): TP: Comminutor and bar screen; aerated equalization tank (with its own dedicated blower); aeration tank with two blowers; clarifier; sludge holding tank; chlorine contact tank; and de-chlorination tank. Alarm system and emergency generator to be provided. Control building for hold blowers, lab, etc. (Single TP treatment units lacking redundancy). Collection System: 20,800 LF gravity sewer pipe and 2,350 LF force main. Manholes within 100-year floodplain areas to be water-tight. PS1 (Gilberton Area, near intersection with Main St.; 223 homes): 0.0892 MGD (61.9 GPM) @ 49.42 Feet TDH design capacity (0.223 MGD peak claimed; 235 GPM pump size proposed); trash basket; two (2) submersible pumps (capable of passing 3-inch solids); ventilator, alarm light and horn plus autodialer; backup power by generator. PS2 (Maizeville Area, Main Street, 97 homes): 0.128 MGD (88.8 GPM) @ 52.11 Feet TDH (0.32 MGD peak claimed; 340 GPM pump size proposed); trash basket; two (2) submersible pumps (capable of passing 3-inch solids); ventilator, alarm light and horn plus autodialer; backup power by generator. PS3 (Mahanoy Plane Area, intersection of Water Street and unnamed alley, 206 homes, pumping entire collection system flow to STP): 0.2104 MGD (146.1 GPM) @ 27.58 Feet TDH (peak 0.526 MGD flow claimed; 555 GPM pump sized claimed); two (2) submersible pumps (capable of passing 3-inch solids); trash basket; ventilator, alarm light and horn plus autodialer; backup power by generator.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Extended Aeration	Calcium Hypochlorite tablets	0.100

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.100*	200	Not Overloaded	None	Disposal

*Maximum 3-month monthly average flow. Facility also designed to handle 0.250 MGD peak instantaneous/hourly design flows.

Changes Since Last Permit Issuance:

- WQM Permitted Comminutor is reportedly no longer present. See Compliance Section for details.
- The EPA Compliance Inspection Report included a third-party engineer Process Flow Schematic (Figure 2-1) appear to indicate that the WQM-permitted de-chlorination tank is being used as a (non-WQM permitted) aerated post-aeration tank, but neither is identified in the NPDES Permit Renewal Application Treatment Plant Process Information Section (which also does not indicate any usage of de-chlorination chemicals). The Castle Valley Report Section 2.3.6 indicates post-aeration tank shares use of the sludge holding tank blowers.

Other Comments:

NPDES Permit Application STP Description: Wastewater is treated via the extended aeration process. Influent discharges into the pre-equalization basin and is pumped into a splitter box which feeds the extended aeration tank. Wastewater then flows into the final clarifier for settling before being discharged into the chlorine contact tank and then onto the stream. Solids are either recycled from the clarifier back into the aeration tank or wasted into the digester. Digested sludge is hauled away periodically as liquid to another treatment facility for further treatment and disposal. 3-inch calcium hypochlorite tabs are used in the disinfection system. No POTW upgrades planned in 5-year NPDES Permit term.

Influent Loadings & 85% Minimum Monthly Average Reduction: EDMR data showed concentrations down to 77 mg/l BOD5 and 69 mg/l TSS, indicating significant I&I issues (i.e. dilution). It is unclear if the existing Part A.I Additional Requirements Item 2 (85% minimum monthly average reduction for BOD5 and TSS) have been met. Reporting is being required in this permit term. Application data:

BOD5: 164 mg/l and 48 lbs/day BOD5 average (47 samples) and 438 mg/l (149 lb/day) max. Assuming an 85% reduction, effluent BOD5 would be in the range of 24.6 mg/l. Application indicated 7.26 mg/l CBOD5 effluent, which would equate to 8.7 mg/l BOD5 effluent at the 1 BOD5:1.2 CBOD5 ratio (assumed in the absence of better data).

TSS: 169 mg/l and 49 lbs/day BOD5 average (47 samples) and 460 mg/l (150 lb/day) max. Assuming an 85% reduction, effluent TSS would be in the range of 25 mg/l. Application indicated 22.07 mg/l effluent TSS LTA.

2023 Chapter 94 Report: Prepared by ARRO Consulting, Inc.

- Form Items 1, 2, 3, and 9: No identified or projected hydraulic (0.100 MGD) or organic (200 lb BOD5/day) overloading. The 3-month max average flow was 0.055583 MGD (0.100 MGD hydraulic design capacity) and 96 lb BOD5/day (200 lb BOD5/day organic design capacity) in 2023. Organic overloading in February 2021 (blamed on bad sampling per 2021 Chapter 94 Report). Chapter 94 Spreadsheet did not include total monthly precipitation information.
  - Persons/EDU: 2.4
  - Existing EDUs: 225
  - Flow/EDU: 198.1 GPD/EDU
  - Flow/Capita: 82.6 GPD/capita (DWFM default is 100 GPCD)
  - Load/EDU: 0.248 lb BOD5/day
  - Load/Capita: 0.103 lb BOD5/day (DWFM default is 0.17 lb BOD5/day)
  - Renewal Application Information: This is a 100% separate sewer system servicing a population of 583, without industrial contributions. Using DWFM defaults, the dry weather flows/loadings would be expected at:
    - Flow: 0.0583 MGD
    - Loading: 99 lbs BOD5/day
- Form Item 4: No sanitary sewer connections added or proposed.
- Form Item 5: Only routine maintenance reported on WWTP, except for repaired blower. Narrative Section 6.0 indicated sewer system O&M conducted by the contracted treatment plant operators (M&B Environmental), with major repairs conducted by contract. Nothing specific listed. Borough does not own any sewer maintenance equipment. In 2023, no cleaning or inspections were performed. **NOTE**: Multiple DEP NOVs and a 4/3/2023 EPA Inspection indicate major O&M issues at the Treatment Plant and Pump stations. 2024 NOV asked for an I&I Plan.
- Form Item 6: System did not experience capacity-related bypassing, SSOs or surcharging per Report. Section 7.0 states that the Gilberton Borough System was constructed in 2003.
- Form Item 7: No information on pump sizing or flows. The Report stated that there are three (3) pump stations in the collection system that are routinely inspected by treatment plant personnel and are in good working order. However, this is contradicted by the 4/3/2023 EPA Compliance Inspection Report statements of assorted PS issues. Chapter 94 Report statements:
  - PS#1: General preventive maintenance, wet well is checked and cleaned as necessary to control grease. One pump was replaced.
  - PS#2: General preventive maintenance, wet well is checked and cleaned as necessary to control grease.
  - PS#3: General preventive maintenance, wet well is checked and cleaned as necessary to control grease.

  NOTE: The 4/3/2023 EPA Inspection Report indicated: Wastewater is collected and pumped to the Plant through three pump stations located in the collection system, one in Gilberton, one in Maizesville, and one across from the park near the main gate of the WWTP. The park pump station functions as an influent pump station for the WWTP. Pump Station #1, which is located in Gilberton, feeds into Pump Station #2, which is

located in Maizeville. Wastewater from Pump Stations #1 and #2 feed into Pump Station #3, which is located near the WWTP. The EPA Inspection Report noted that the Plant supervisor stated that the offsite pump stations (PS#1 in Gilberton; PS#2 in Maizeville; and PS#3 near WWTP) “routinely experience issues and failures”. PS#3 collection basket was routinely full of sanitary debris, allowing rags and other debris to flow into the WWTP.

- Form Item 8: IW section left blank on form. Narrative Section 4.0 indicated copy of existing sewer use ordinance in unidentified earlier Chapter 94 Report. No current industrial connections to system per Report, but NPDES Permit Renewal Application identified a coal mine and two auto repair businesses in the service area.
- Form Item 10: 39,875 gallons of wastes sludge (1% average solids; 1.5 dry tons) Liquid sludge hauled offsite to disposal at Greater Hazelton JSA.

Compliance History

DMR Data for Outfall 001 (from July 1, 2023 to June 30, 2024) – some values bolded to identify atypical values or noted exceedances.

Parameter	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23
Flow (MGD) Average Monthly	0.0346	0.0527	**0.0995**	0.0712	0.0552	**0.1033**	0.0791	0.0400	0.0475	0.0445	0.0331	0.0340
Flow (MGD) Daily Maximum	0.0466	0.0696	**0.3768**	0.149	0.1177	**0.5773**	**0.2969**	0.0988	0.104	0.0736	0.0504	0.0587
pH (S.U.) Instantaneous Minimum	6.6	6.3	6.3	6.1	6.1	6.2	6.1	6.0	6.1	6.2	6.5	6.1
pH (S.U.) Instantaneous Maximum	6.9	7.1	7.1	6.8	7.0	6.9	6.9	7.2	7.0	6.9	7.0	6.8
DO (mg/L) Daily Minimum	5.3	5.4	**3.3**	5.9	5.9	**4.1**	5.2	5.1	5.3	5.2	**4.2**	4.5
TRC (mg/L) Average Monthly	0.3	0.4	0.3	0.3	0.2	0.4	< 0.3	0.3	0.3	0.3	0.3	0.3
TRC (mg/L) Instantaneous Maximum	0.6	0.7	0.5	0.5	0.4	0.8	0.6	0.8	0.5	0.8	0.7	0.9
CBOD5 (lbs/day) Average Monthly	< 0.7	< 1.0	**35.1**	< 2.0	2.9	**78.3**	< 8.5	1.1	< 0.8	< 0.9	< 0.8	< 0.7
CBOD5 (lbs/day) Weekly Average	< 0.7	< 1.1	**68.5**	2.7	4.8	**307.2**	16.2	1.6	1.0	1.0	1.7	1.2
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	12.3	< 3.5	6.9	24.9	< 11.5	4.3	< 2.5	< 2.7	< 3.1	< 2.9
CBOD5 (mg/L) Weekly Average	< 2.0	< 2.0	21.8	5.0	12.3	89.2	20.9	6.5	2.9	3.0	6.4	4.7
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	50	58	117	63	78	105	45	45	37	51	56	34
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	50	58	117	63	78	105	45	45	37	51	56	34
BOD5 (mg/L) Raw Sewage Influent Average Monthly	162	126	**77**	105	190	**77**	130	156	117	195	211	134

BOD5 (mg/L) Raw Sewage Influent Weekly Average	162	126	**77**	105	190	**77**	130	156	117	195	211	134
TSS (lbs/day) Average Monthly	2.3	3.6	19.4	3.0	13.6	**130.6**	8.1	3.1	13.7	16.4	1.7	< 3.9
TSS (lbs/day) Raw Sewage Influent Average Monthly	58	87	115	70	75	166	53	50	48	62	62	44
TSS (lbs/day) Raw Sewage Influent Weekly Average	58	87	115	70	75	166	53	50	48	62	62	44
TSS (lbs/day) Weekly Average	4.1	4.4	24.8	4.0	27.7	**298.0**	13.8	4.8	20.0	21.6	3.4	12.3
TSS (mg/L) Raw Sewage Influent Average Monthly	184	185	**69**	116	182	113	153	164	152	232	225	172
TSS (mg/L) Average Monthly	6.5	7.5	14.0	5.3	**30.3**	**43.6**	12.8	10.0	27.0	**37.3**	6.3	< 15.0
TSS (mg/L) Raw Sewage Influent Weekly Average	184	185	69	116	182	113	153	164	152	232	225	172
TSS (mg/L) Weekly Average	11.0	8.0	15.0	7.0	**59.0**	**92.3**	18.0	14.0	38.5	**51.0**	13.0	**48.0**
Fecal Coliform (No./100 ml) Geometric Mean	< 2	< 2	949	15	78	106	20	244	15	19	7	< 4
Fecal Coliform (No./100 ml) Instantaneous Maximum	3	3	**20000**	45	340	**> 20000**	26	**5400**	43	25	28	8.0
Nitrate-Nitrite (lbs/year) Annual Average							< 3					
Nitrate-Nitrite (mg/L) Annual Average							< 4.56					
Total Nitrogen (lbs/year) Annual Average							< 4					
Total Nitrogen (mg/L) Annual Average							< 5.86					
Ammonia (lbs/day) Average Monthly	0.05	0.1	7.3	0.05	0.05	7.8	0.3	0.4	0.03	0.06	0.4	0.09

Ammonia (lbs/day) Weekly Average	0.07	0.1	14.0	0.05	0.07	15.5	0.4	0.7	0.04	0.08	0.7	0.1
Ammonia (mg/L) Average Monthly	0.1	0.2	2.6	0.1	0.1	2.4	0.8	1.5	0.1	0.2	1.1	0.3
Ammonia (mg/L) Weekly Average	0.2	0.4	4.4	0.1	0.2	4.5	1.1	2.8	0.1	0.2	2.0	0.5
TKN (lbs/year) Annual Average							0.9					
TKN (mg/L) Annual Average							1.3					
Total Phosphorus (lbs/year) Annual Average							1					
Total Phosphorus (mg/L) Annual Average							1.46					

DMR Data for Outfall 001 (from January 1, 2022 to December 31, 2022) – some values bolded to identify atypical values or noted exceedances.

Parameter	DEC-22	NOV-22	OCT-22	SEP-22	AUG-22	JUL-22	JUN-22	MAY-22	APR-22	MAR-22	FEB-22	JAN-22
Flow (MGD) Average Monthly	0.0603	0.0480	0.0547	0.0389	0.0324	0.0276	0.0328	0.0502	0.0553	0.04497	0.05864	0.0376
Flow (MGD) Daily Maximum	0.2065	0.0726	**0.2408**	0.0979	0.1012	**0.335**	0.0522	0.1475	0.1465	0.0618	0.1692	0.0485
pH (S.U.) Instantaneous Minimum	6.2	6.1	6.1	6.27	6.5	6.38	6.23	**5.8**	6.48	6.34	6.06	6.44
pH (S.U.) Instantaneous Maximum	7.0	6.8	7.2	7.22	7.01	7.11	7.22	7.56	7.11	7.49	7.02	7.07
DO (mg/L) Daily Minimum	5.9	5.2	5.1	5.24	5.36	5.56	**4.23**	5.33	5.04	**2.82**	**3.89**	5.47
TRC (mg/L) Average Monthly	0.3	0.3	0.2	0.2	0.2	< 0.1	0.2	0.2	0.2	0.3	0.2	0.2
TRC (mg/L) Instantaneous Maximum	1.46	0.6	0.7	0.52	0.51	0.41	0.4	0.46	0.39	0.66	0.39	0.57
CBOD5 (lbs/day) Average Monthly	< 2.9	< 1.6	6.2	2.6	4.2	< 0.4	1.3	< 1.0	< 1.3	3.2	1.8	< 2.3
CBOD5 (lbs/day) Weekly Average	6.7	2.0	19.3	5.8	5.9	0.4	1.8	1.3	2.0	4.4	2.8	< 2.5
CBOD5 (mg/L) Average Monthly	< 5.7	< 3.7	8.7	6.7	12.4	< 2.0	5.0	< 3.1	< 3.6	7.5	4.7	< 0.7
CBOD5 (mg/L) Weekly Average	11.7	4.5	22.2	12.6	17.3	2.0	6.8	4.1	5.1	10.3	7.0	< 0.7
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	97	117	108	49	44	39	52	48	51	54	61	50
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	97	117	108	49	44	39	52	48	51	54	61	50
BOD5 (mg/L) Raw Sewage Influent Average Monthly	297	338	174	175	195	183	174	143	143	113	164	165

BOD5 (mg/L) Raw Sewage Influent Weekly Average	297	338	174	175	195	183	174	143	143	113	164	165
TSS (lbs/day) Average Monthly	7.0	1.0	< 40.9	< 4.2	19.6	16.0	< 4.1	1.9	3.4	2.8	4.4	1.0
TSS (lbs/day) Raw Sewage Influent Average Monthly	150	89	77	49	35	37	48	47	52	53	54	50
TSS (lbs/day) Raw Sewage Influent Weekly Average	150	89	77	49	35	37	48	47	52	53	54	50
TSS (lbs/day) Weekly Average	10.3	1.2	158.6	11.9	29.1	25.0	6.8	2.4	5.2	3.9	6.4	1.3
TSS (mg/L) Raw Sewage Influent Average Monthly	460	256	128	175	155	175	165	139	143	109	143	168
TSS (mg/L) Average Monthly	14.0	2.3	**< 48.8**	9.7	**55.7**	**78.0**	< 16.3	5.5	9.0	< 6.3	9.3	3.5
TSS (mg/L) Raw Sewage Influent Weekly Average	460	256	128	175	155	175	165	139	143	109	143	168
TSS (mg/L) Weekly Average	18.0	2.5	**182**	26.0	**82.5**	**124.0**	27.5	7.0	13.0	9.0	13.5	5.0
Fecal Coliform (No./100 ml) Geometric Mean	247	69	168	29	10	29	< 4	3	28	< 6	5.0	< 2
Fecal Coliform (No./100 ml) Instantaneous Maximum	290	370	360	42	11	36	7	3	48	21	7.0	3
Ammonia (lbs/day) Average Monthly	0.09	0.6	2.2	0.04	0.02	0.06	0.4	5.7	2.0	4.7	0.4	0.5
Ammonia (lbs/day) Weekly Average	0.1	1.2	2.7	0.05	0.03	0.06	0.8	5.9	2.7	7.5	0.7	0.9
Ammonia (mg/L) Average Monthly	0.2	1.8	3.7	0.2	0.1	0.3	1.4	**17.1**	5.5	10.5	1.1	1.4
Ammonia (mg/L) Weekly Average	0.32	3.5	4.2	0.2	0.01	0.3	2.6	**17.1**	6.6	17.2	1.9	2.6

Compliance History

Effluent Violations for Outfall 001, from: August 1, 2023 To: June 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
DO	04/30/24	Daily Min	3.3	mg/L	5.0	mg/L
DO	01/31/24	Daily Min	4.1	mg/L	5.0	mg/L
DO	08/31/23	Daily Min	4.2	mg/L	5.0	mg/L
CBOD5	04/30/24	Avg Mo	35.1	lbs/day	20.8	lbs/day
CBOD5	01/31/24	Avg Mo	78.3	lbs/day	20.8	lbs/day
CBOD5	04/30/24	Wkly Avg	68.5	lbs/day	33.4	lbs/day
CBOD5	01/31/24	Wkly Avg	307.2	lbs/day	33.4	lbs/day
CBOD5	01/31/24	Wkly Avg	89.2	mg/L	40.0	mg/L
TSS	01/31/24	Avg Mo	130.6	lbs/day	25.0	lbs/day
TSS	01/31/24	Wkly Avg	298.0	lbs/day	37.5	lbs/day
TSS	01/31/24	Avg Mo	43.6	mg/L	30.0	mg/L
TSS	09/30/23	Avg Mo	37.3	mg/L	30.0	mg/L
TSS	02/29/24	Avg Mo	30.3	mg/L	30.0	mg/L
TSS	01/31/24	Wkly Avg	92.3	mg/L	45.0	mg/L
TSS	09/30/23	Wkly Avg	51.0	mg/L	45.0	mg/L
TSS	02/29/24	Wkly Avg	59.0	mg/L	45.0	mg/L
Fecal Coliform	04/30/24	IMAX	20000	No./100 ml	10000	No./100 ml
Fecal Coliform	01/31/24	IMAX	> 20000	No./100 ml	10000	No./100 ml

Effluent Violations for Outfall 001, from: February 1, 2022 To: February 28, 2023

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
pH	05/31/22	Inst Min	5.8	S.U.	6.0	S.U.
DO	03/31/22	Daily Min	2.82	mg/L	5.0	mg/L
DO	02/28/22	Daily Min	3.89	mg/L	5.0	mg/L
DO	06/30/22	Daily Min	4.23	mg/L	5.0	mg/L
TSS	10/31/22	Avg Mo	< 40.9	lbs/day	25.0	lbs/day
TSS	10/31/22	Wkly Avg	158.6	lbs/day	37.5	lbs/day
TSS	07/31/22	Avg Mo	78.0	mg/L	30.0	mg/L
TSS	08/31/22	Avg Mo	55.7	mg/L	30.0	mg/L
TSS	10/31/22	Avg Mo	< 48.8	mg/L	30.0	mg/L
TSS	10/31/22	Wkly Avg	182	mg/L	45.0	mg/L
TSS	08/31/22	Wkly Avg	82.5	mg/L	45.0	mg/L
TSS	07/31/22	Wkly Avg	124.0	mg/L	45.0	mg/L
Fecal Coliform	01/31/23	IMAX	< 20000	No./100 ml	10000	No./100 ml

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	# OF VIOLATIONS
GILBERTON BORO - STP	WPCNP	3766152	04/25/2024	Compliance Evaluation	Violation(s) Noted	1
GILBERTON BORO - STP	WPCNP	3361249	08/04/2022	Routine/Partial Inspection	Violation(s) Noted	1
GILBERTON BORO - STP	WPCNP	3132155	05/09/2022	Administrative/File Review	No Violations Noted	0
GILBERTON BORO - STP	WPCNP	3126920	04/07/2022	Administrative/File Review	No Violations Noted	0

GILBERTON BORO - STP	WPCNP	3401949	10/27/2021	Administrative/File Review	Violation(s) Noted	2
GILBERTON BORO - STP	WPCNP	3068929	01/12/2021	Follow-up Inspection	Violation(s) Noted	6
GILBERTON BORO - STP	WPCNP	3025978	12/29/2020	Administrative/File Review	No Violations Noted	0
GILBERTON BORO - STP	WPCNP	3045606	08/18/2020	Routine/Partial Inspection	No Violations Noted	0
GILBERTON BORO - STP	WPCNP	3343799	06/17/2020	Administrative/File Review	Violation(s) Noted	2
GILBERTON BORO - STP	WPCNP	3273219	04/29/2020	Routine/Partial Inspection	Violation(s) Noted	7

- DEP Inspection Reports repeatedly cited POTW (Treatment Plant and Pump Station) O&M issues, and failure to comply with the Part II WQM Permit requirements (missing comminutor, O&M issues, etc.). An I&I Abatement program/Corrective Action plan was repeatedly requested, but not found in the 2023 Chapter 94 Annual Report.

Other Comments:

- **6/12/2023 EPA Compliance Inspection Report for a 4/3/2023 Site Inspection**: The highlights included:
  - The Plant Supervisor stated that the Plant has routinely experienced flows exceeding the design capacity in the past, with wet weather peaks over 100,000 GPD due to inflow and infiltration. **NOTE**: The WQM Permit Module 1 identified the design average flow at 0.10 MGD and the peak instantaneous flow capacity at 0.25 MGD.
  - The Plant supervisor stated that the offsite pump stations (PS#1 in Gilberton; PS#2 in Maizeville; and PS#3 near WWTP) “routinely experience issues and failures”. PS#3 collection basket was routinely full of sanitary debris, allowing rags and other debris to flow into the WWTP.
  - Foam was observed at the headworks.
  - Solids and floating debris were seen in the EQ tank, with old equipment, electrical cords, and tubing laying on the ground around it. The Plant operator said the “new pumps” experienced issues with over-heating and shutting down due to rag debris.
  - Excessive solids build-up was observed in the influent channel which formed a solid mat of debris, prohibiting wastewater from evenly flowing through the length of the channel into the clarifier. The blockage had created short circuiting of the clarifier’s design (refer to Appendix A, Photograph 10). The solids build-up formed a thick mat with vegetative growth on top. Additionally, bulk, floating solids were observed in the main chamber of the clarifier (refer to Appendix A, Photograph 11). Floating solids observed near the skimmer appeared to be hard with vegetative growth on top, indicating solids in the unit were older in age (refer to Appendix A, Photograph 15).
  - The southern RAS line can be re-routed for waste activated sludge (WAS). However, at the time of the inspection, the Plant Operator stated the southern RAS/WAS line was not operational due to the airlift pump failure. The Plant Operator stated that he was able to waste sludge sometimes, but it did not always work.
  - The Inspectors observed cloudy water with high concentrations of pin floc in both the clarifier weir trough and CCC (refer to Appendix A, Photographs 12 and 13), as well as excessive algal growth.

- Wasted sludge is collected in an uncovered digester located between the EQ basin and the aeration basin. The Inspectors observed floating debris and solids in the digester. Additionally, some make-shift rigging and submerged electrical cords were observed in the digester (refer to Appendix A, Photograph 4).
- The Plant did not have a backup generator at the time of the inspection. The Plant Supervisor stated that there are back-up generators present at each pump station in the collection system.
  NOTE: The 2023 Chapter 94 Report indicated blower repair was the only nonroutine maintenance performed in 2023.
- EPA Report Attachment (4/14/2023 Castle Valley Consultants 3rd Party Evaluation Report a.k.a. Gilberton Borough WWTP Investigation Report (prepared for M&B Environmental)): Applicable comments from a preliminary glance-over:
  - EPA Compliance Inspection Report Comments: Following the onsite inspection, on April 14, 2023, the Permittee submitted an evaluation to PADEP from Castle Valley Consultants (refer to Appendix B, Exhibit 4). The Inspectors did not perform an in-depth technical review of the document; however, the submitted evaluation does not reference engineered specifications of the WWTP or collection system assets in its recommendations and does not indicate the work was completed by a Pennsylvania licensed professional engineer. The consultant evaluation report does state at least one additional phase of the project will be completed for upgrade planning and installation evaluation; however, no timeline or schedule is provided.
  - Section 1.1:
    - Section indicated facility has comminutor and plant emergency back-up power contrary to EPA Compliance Report site description.
    - Section indicated none of the pump stations had back-up power (contrary to WQM permitting).
    - Section and Figure 2-1 (Process Flow Schematic) indicates a permitted de-chlorination tank was converted into an unpermitted post-aeration tank. Given the treatment process is extended aeration, the need for additional aeration indicates the process tank may not be operating as designed. The facility also does not have any extra blower that could be used post-aeration, so overall plant aeration capacity may not be adequate.
  - Section 1.1.1: Assorted noncompliance was blamed on mechanical equipment failure. Adequate POTW O&M generally prevents mechanical equipment failures prior to noncompliance. See existing NPDES and WQM O&M permit conditions. See EPA comments about assorted solids/rags impact on the WWTP units in the absence of the permitted comminutor.
  - Section 2.2: The original plant design had a comminutor as its screen device with a bar screen backup. DEP Inspection Reports indicated no comminutor was present.
  - Section 2.2.2: The Flow Equalization Tank description did not mention the permitted aeration system using a dedicated blower. The single 60 CFM EQ Tank blower may have been repurposed to the unpermitted post-aeration tank.
  - Section 2.2.4:
    - The report noted infringements on process tank freeboard.
    - The report noted: “An air lift skimmer, operated on the same principle, is usually installed in the settling tank so that floating solids can be removed and discharged back into the aeration tank”. It is unclear if this was a recommendation to install such a skimmer.
  - Section 3 (WWTP Recommendations):
    - Report-Identified problems:
      - In our inspection of the facility, it appears that the plant is maintained and operated according the manufacturer’s recommendations. However, the collection system appears to have a I&I problem, which is leading to the Fecal and DO violations.
      - When reviewing the issues with the fecal coliform with operations, it appears the violations occur with high flows to the plant which causes the tablet chlorinator to be ineffective. This concurs with the SSO’s that the plant has been experiencing.

- When reviewing the problem with the effluent DO with operations, along with reviewing the PADEP reports, it appears the primary problem is equipment failure. Even during our site visit, one of the blowers that supply the post aeration basin was out of for repair. PADEP noted in their inspections that the aeration system had either electrical problems or the blowers were out of service.
- When reviewing the problem with biochemical oxygen demand and total suspend solids (TSS) with operations, the violations occur when the plant experienced high flows. This can cause the biomass to carry over and cause the violations. If should be noted that even some of the flow events had the treatment plant site flooded. Reducing I&I will help eliminate this problem, but reduction in I&I will not help if the plant site experiences flooding. **NOTE**: Per the WQM Permit Module 2, the "plant will be above the flood elevation and the pump stations will also be above the flood elevation. Any manholes in the floodplain will be made water-tight".
- "It should be noted that even some of the flow events had the treatment plant site flooded". The facility was designed for a 100-year flood event per WQM permit application.

- **Report Recommendations**:
  - Due to the high flow, it is recommended to perform a I&I study and correct inflow or infiltration to the plant. Part of this study would determine what rehabilitation of the wastewater collection infrastructure is needed, including replacement of faulty manhole covers, and cracked or deteriorating sanitary sewer pipes that would need to be replaced. This would reduce the potential violations due to excess flow to the plant.
  - Replace the existing tablet disinfection system with a liquid feed system. It is recommended that this system be flow paced to keep up with the swing in flow. Since the plant's discharge has a high limit on chlorine, it is also recommended to install a de-chlorination system to assure the high limit is not exceeded.
  - Install a dedicated blower for the post aeration tank. This should be tied into the header for the sludge tank to use the sludge tank "spare blower" as a backup.
  - Repair and reinstall the comminutor at the head of plant.
  - Operations indicated that the airlift pump at the clarifier was problematic and difficult to adjust. While this is a common problem with airlift pumps, once set, they seem not to have a problem. If this continues to be a problem, operations might look into supplying a submersible pump on a VFD for fine control.

- **4/25/2024 DEP Inspection Report**:
  - Indicated facility comminutor no longer exist and inoperable EQ Tank pumps. The DEP Inspection report noted the need for a WQM Permit amendment if the comminutors have been removed. **NOTE**: See Treatment Plant Section above for what was previously permitted. No WQM Permit Amendment Application has been received to date.
  - The DEP Inspection Report indicated the facility might pursue an alternate pump technology for the EQ Tanks. **NOTE**: See NPDES Permit Part A.III.C.2 (Planned changes to physical facilities) notification requirements.
  - The DEP Inspection Report noted a new influent sampler had been installed in Spring of 2023.
- **Notices of Violations**:
  - 8/4/2022 NOV: Third Notice of Violation regarding effluent violations (CBOD5, TSS, DO, pH), missed monitoring violations for influent BOD5 & TSS, Sanitary Sewer Overflows (SSOs), and inspection violations noted in 10/27/2021 DEP Inspection Report.
  - 4/7/2021 NOV: Second Notice of Violation regarding effluent violations, missed monitoring violations for influent BOD5 & TSS, Sanitary Sewer Overflows (SSOs), and inspection violations noted in 10/27/2021 DEP Inspection Report.
  - 12/7/2021 NOV: Notice of violation for effluent violations (CBOD5, TSS, DO, pH), missing monitoring violations for influent BOD5 and TSS, 2020 SSO event, and O&M issues plus reference to 11/12/2020 NOV:
    - Two (2) equalization pumps out-of-service
    - One (1) aeration blower out-of-service

  - The Return Activated Sludge (RAS)/Waste Activated Sludge (WAS) was out-of-service
  - The comminutor was out-of-service
  - The auto-dialer alarm service on Pump Station #2 was out-of-service
- 11/12/2020 NOV: Notice of Violation for effluent exceedances (Fecal Coliform, CBOD5, TSS, DO), failure to monitor CBOD5 & BOD5 per permit, offline units per 6/20/2019 Compliance Evaluation Inspection (EQ tank pumps and blower; influent pump station had only one working pump) with same problems noted in August 18, 2020 DEP Inspection. SSO.

- **EDMR Data**: The above reported information appears to indicate inflow issues given spiking daily max flows flow data and low monthly average raw sewage concentrations (BOD5 and TSS) for a ~20-year-old sewer system which was designed for water-tight manholes in the floodplain. Some of the atypical values may be due to biasing by 8-hour composite sampling and previous non-standard minimum monitoring frequencies. The WQM permit also included de-chlorination, so failure to properly chlorinate (killing fecal coliforms) and then de-chlorinate is a result of improper plant operation.

Compliance History: 21 open violations per 8/28/2024 WMS Query (Open Violations by Client Number):

FACILITY	INSP PROGRAM	INSP ID	VIOLATION ID	VIOLATION DATE	VIOLATION CODE	VIOLATION
GILBERTON BORO - STP	WPC NPDES	2912273	857226	04/25/2024	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
GILBERTON BORO - STP	WPC NPDES	2912273	857227	08/04/2022	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
GILBERTON BORO - STP	WPC NPDES	3068929	891610	08/04/2022	CSL611	CSL - Failure to comply with terms and conditions of a WQM permit
GILBERTON BORO - STP	WPC NPDES	3068929	910571	05/09/2022	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit
GILBERTON BORO - STP	WPC NPDES	3068929	910572	04/07/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit
GILBERTON BORO - STP	WPC NPDES	3068929	910573	04/07/2022	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth
GILBERTON BORO - STP	WPC NPDES	3068929	910574	10/27/2021	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth

GILBERTON BORO - STP	WPC NPDES	3068929	910575	10/27/2021	CSL201	CSL - Unauthorized, unpermitted discharge of sewage to waters of the Commonwealth
GILBERTON BORO - STP	WPC NPDES	3273219	934640	10/27/2021	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
GILBERTON BORO - STP	WPC NPDES	3273219	934641	10/27/2021	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
GILBERTON BORO - STP	WPC NPDES	3273219	934642	10/27/2021	CSL611	CSL - Failure to comply with terms and conditions of a WQM permit
GILBERTON BORO - STP	WPC NPDES	3273219	934643	10/27/2021	92A.47(C)	NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO)
GILBERTON BORO - STP	WPC NPDES	3273219	934644	10/27/2021	CSL611	CSL - Failure to comply with terms and conditions of a WQM permit
GILBERTON BORO - STP	WPC NPDES	3273219	938395	08/18/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit
GILBERTON BORO - STP	WPC NPDES	3273219	938396	08/18/2020	92A.47(C)	NPDES - Illegal discharge to waters of the Commonwealth from a sanitary sewer overflow (SSO)
GILBERTON BORO - STP	WPC NPDES	3343799	950477	08/18/2020	92A.41(A)8	NPDES - Failure to provide information or records required by the permit or otherwise needed to determine compliance
GILBERTON BORO - STP	WPC NPDES	3343799	950479	04/30/2020	92A.44	NPDES - Violation of effluent limits in Part A of permit
GILBERTON BORO - STP	WPC NPDES	3361249	955089	06/20/2019	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance
GILBERTON BORO - STP	WPC NPDES	3401949	963771	06/20/2019	92A.44	NPDES - Violation of effluent limits in Part A of permit

GILBERTON BORO - STP	WPC NPDES	3401949	963772	08/13/2018	92A.41(A)8	NPDES - Failure to provide information or records required by the permit or otherwise needed to determine compliance
GILBERTON BORO - STP	WPC NPDES	3766152	8188097	12/19/2016	92A.41(A)5	NPDES - Failure to properly operate and maintain all facilities which are installed or used by the permittee to achieve compliance

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .100
Latitude 40º 47' 34.00" **Longitude** -76º 14' 51.00"
Wastewater Description: Sewage Effluent

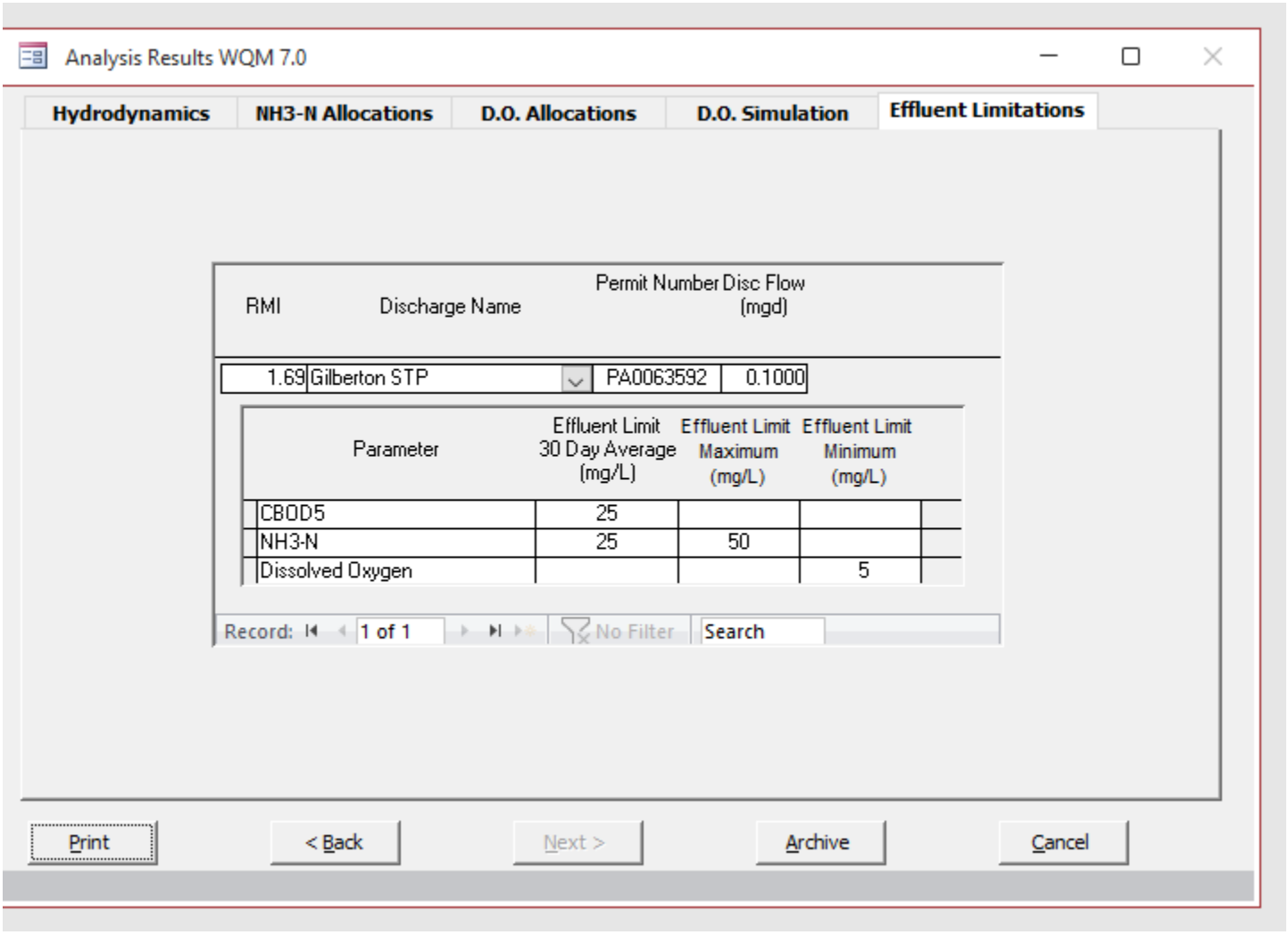
Permit Limits & Monitoring: **Changes bolded**

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	20.8 Lbs/d 33.4 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. Application data: 7.26 mg/l average (65 samples, with max of 31.2 mg/l. 7/23 – 6/24 EDMR Data: 89.2 mg/l weekly average (Jan 2024)
TSS	25.0 Lbs/d 37.5 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: 22.07 mg/l average (68 samples), with **190 mg/l max**.
pH	6.0 – 9.0 SU	Inst. Min - IMAX	Existing Technology limit (Chapter 92a.47). Application data: **5.32** to 7.65 SU (626 samples).
Dissolved Oxygen (DO)	5.0	**Inst.** Minimum	Existing WQBEL limits supported by updated water quality modeling. Previous permit required daily minimum reporting. Application data: 8.74 average (626 samples) with **2.82 mg/l** minimum
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47). Application data: **11,800/100 ml max**, 21.2/100 ml average.
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above.
Total Residual Chlorine	0.5**0** 1.6**3**	Monthly Average IMAX	Existing TBEL. **Significant digit added.** Application data: 0.21 mg/l average (631 samples) and 1.46 mg/l max
Ammonia-Nitrogen	20.8 Lbs/d 33.4 Lbs/d 25.0 40.0 50.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing WQBEL limits supported by updated water quality modeling. Application data: 26.3 mg/l max and 7.18 mg/l average (65 samples).
Total Nitrogen (TN = TKN + Nitrate-Nitrite-N measured in same sample)	Report Lbs/day **Report Lbs/day** Report **Report**	Annual Average **Daily Max** Annual Average **Daily Max**	Existing monitoring requirement (Chapter 92a.61). Application data: TN: 22.51 mg/l max and 9.95 mg/l average (3 samples) TKN: 22.2 mg/l max and 9.01 mg/l average (3 samples) Nitrate-Nitrite-N: 2.31 mg/l max and 0.94 mg/l average (3 samples)
Total Phosphorus	Report Lbs/day **Report Lbs/day** Report	Annual Average **Daily Max** Annual Average	Existing monitoring requirement (Chapter 92a.61).

	Report	**Daily Max**	Application data: 2.54 mg/l max and 1.93 mg/l average (3 samples)
E Coli	**Report #/100 ml**	**IMAX**	**New Monitoring requirement due to new Chapter 93 WQS. (Chapter 92a.61)**
Influent BOD5	Report Lb/d Report Lb/d Report Report	Monthly Average **Daily Max** Monthly Average **Daily Max**	Existing requirement. **Sampling paired with effluent sampling to allow for direct comparison.** Application data: 438 mg/l max and 164 mg/l average (47 samples)
Influent TSS	Report Lb/d Report Lb/d Report Report	Monthly Average **Daily Max** Monthly Average **Daily Max**	Existing requirement. **Sampling paired with effluent sampling to allow for direct comparison.** Application data: 460 mg/l max and 169 mg/l average (47 samples)
BOD5 minimum monthly average reduction	**85%**	**Minimum Monthly Average**	Existing NPDES Permit Part A.I Additional Requirements Item 2 requirement. **Reporting now required.**
TSS minimum monthly average reduction	**85%**	**Minimum Monthly Average**	Existing NPDES Permit Part A.I Additional Requirements Item 2 requirement. **Reporting now required.**

Comments: In addition to the above:

- Standard monitoring frequency in this permit term:
  - Daily monitoring for pH, TRC, and DO. Previous 5/week sampling drops out this term.
  - Weekly monitoring for CBOD5, TSS, Ammonia-N, Fecal Coliform.
  - Quarterly monitoring for E Coli
  - Annual CB parameter monitoring for TN (TKN + Nitrate-Nitrite-N measured in same sample) and TP.
  - 2/month for raw sewage influent sampling retained (BOD5 and TSS) but paired with effluent sampling to allow for direct comparison.
  - Converted weekly average to daily max reporting for BOD5/TSS Influent monitoring
- Going to 24-hour composite sampling to eliminate biasing, especially given pattern of permit limit exceedances due to O&M issues that can recur during off-hours.
- PFAS: This is a minor POTW without any industrial users triggering PFAS monitoring requirements at present.
- CBOD5, Ammonia-N, DO limits: Existing limits are protective per updated water quality modeling (WQM Model 7.1):



GilbertonWQModel.pdf

- Reasonable Potential Analysis: No toxic pollutants limits/monitoring are required by the updated Reasonable Potential Analysis (see output below). There are no industrial users to cause spiking potential. Any AMD-impacted stormwater I&I might lead to spiking via pass-through, but the I&I stormwater would otherwise reach the stream without any benefit of treatment at the POTW.

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

No. Samples/Month: 4

Pollutants	*Mass Limits* AML (lbs/day)	*Mass Limits* MDL (lbs/day)	*Concentration Limits* AML	*Concentration Limits* MDL	*Concentration Limits* IMAX	*Concentration Limits* Units	Governing WQBEL	WQBEL Basis	Comments

GilbertonTMSPDF.pdf

TRC Limits:

TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9		Gilberton POTW	
4.54	= Q stream (cfs)	0.5	= CV Daily
0.1	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= 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 = 9.381	1.3.2.iii	WLA cfc = 9.138
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 3.495	5.1d	LTA_cfc = 5.312

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

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**

Communications Log:

- **1/31/2023**: On-Base Submittal No. 86250.
- **2/6/2023**: DEP Incompleteness Letter.
- **2/6/2033**: Gilberton (Kopp) request for 15 day extension for AMD metal sampling and several clarification question.
- **2/7/2023**: DEP (Berger) E-mail granting 15-day extension to March 23, 2023 and responses to the two questions.
- **2/23/2023**: Revised application pages received by e-mail (plus On-Base No. **98441** per E-mail).
- **4/3/2023**: EPA Compliance Inspection of facility.