pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0062219**
Facility Type	**Municipal**	APS ID	**552602**
Major / Minor	**Major**	Authorization ID	**1202550**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Frackville Area Municipal Authority Schuylkill County (FAMA)**	Facility Name	**Frackville Area Municipal Authority WWTP**
Applicant Address	PO Box 471 42 South Center Street Frackville, PA 17931-0471	Facility Address	Route 61 1199 West Oak Street Frackville, PA 17931
Applicant Contact	William Rhoades	Facility Contact	Lon Antalosky
Applicant Phone	(570) 874-4421	Facility Phone	(570) 874-4421
Client ID	78531	Site ID	239536
Ch 94 Load Status	Not Overloaded	Municipality	Butler Township
Connection Status	No Limitations	County	Schuylkill
Date Application Received	October 2, 2017	EPA Waived?	No
Date Application Accepted	October 17, 2017	If No, Reason	Major Facility, Significant CB Discharge

Purpose of Application: RENEWAL OF EXISTING NPDES PERMIT.

Summary of Review

This is a 1.4 MGD POTW discharging near the headwaters of Little Mahanoy Creek (CWF; Stream Code# 17677; aquatic life impairment, subject to Mahanoy Creek TMDL (AMD), Natural Trout Reproduction stream).

Background:

- **Annual Average Daily Flows**: 1.001 MGD (2019), 1.438 MGD (2018), 0.957 MGD (2017), 0.827 MGD (2016), 0.872 MGD (2015), and 0.997 MGD (2014). 2018 was high precipitation year. 3.7 MGD peak instantaneous flow. Highest monthly average flow of 1.522 MGD in May 2019.
- **Service Area**: Frackville Borough (52.5%), West Mahanoy Township (30.5%), Butler Township (4.5%), and SCI Frackville (12.5%). Separated Sewer system with old portions subject to I&I issues per 2018 Chapter 94 Report.
- **Permittee EIN#**: The application indicated EIN# 23-2121331 is the correct EIN Number, with incorrect EIN# in previous applications.
- **Stormwater Outfall Renaming**: Stormwater outfalls have been renamed (S001 became Outfall 002; S002 became Outfall 003, S003 became Outfall 004) per DEP naming conventions.

Part C Special Conditions: Changes bolded.

- Part C.I: **Updated** Chesapeake Bay Nutrient Requirements
- **Part C.II: New 3-year Schedule of Compliance (Ammonia-N)**
- **Part C.III: New Standard Solids Management conditions**
- **Part C.IV: New WQBELs for Toxics (Copper and Zinc) conditions**
- Part C.V: **Updated** Standard Whole Effluent Test (WET) Conditions
- **Part C.VI: New IW Stormwater Conditions**
- Part C.VI.A, B and C: Stormwater Prohibition, Necessary Property Rights, Residuals Management

Approve	Deny	Signatures	Date
X		James D. Berger (signed) James D. Berger, P.E. / Environmental Engineer	May 20, 2021
X		Amy M. Bellanca (signed) Amy M. Bellanca, P.E. / Environmental Engineer Manager	5-21-21

Summary of Review

- Part C.VI.D: **Updated** Chlorine Minimization condition
- **Part C.V.E: New SBR condition in event batch discharges impair heavily effluent-dominated stream.**
- **Part C.VI.F: New dry stream condition due to heavily effluent-dominated stream and local water reservoir fed by groundwater well sources. Per DEP Safe Drinking Water, there is potential for increased groundwater withdrawal for water supply usage.**

Sludge use and disposal description and location(s): Facility beneficially uses Class B biosolids under General Permit PAG082209 and goes to American Green Corp. a Reading Anthracite subsidiary or to Commonwealth Landfill for disposal.

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.	001 002, 003 & 004	Design Flow (MGD)	1.4 (001) 0 (002, 003, 004)
Latitude	40º 46' 47.73" (001) 40º 46' 49.06" (002) 40º 46' 47.85" (003) 40º 46' 47.77" (004)	Longitude	-76º 14' 56.98" (001) -76º 14' 52.38" (002) -76º 14' 55.37" (003) -76º 14' 56.07" (004)
Quad Name	Shenandoah	Quad Code	1236 (5-19.3)
Wastewater Description:	Sewage Effluent: 001 Stormwater Associated with Industrial Activities: 002, 003 and 004		

Receiving Waters	Little Mahanoy Creek (CWF, MF)	Stream Code	17677
NHD Com ID	54961649	RMI	-
Drainage Area	1.44 square miles	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.144	Q_{7-10} Basis	Statewide LFY default (see below).
Elevation (ft)	~1335 Feet	Slope (ft/ft)	-
Watershed No.	6-B	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; IRON; MANGANESE		
Source(s) of Impairment	SOURCE UNKNOWN, URBAN RUNOFF/STORM SEWERS		
TMDL Status	Final	Name	Mahanoy Creek (AMD)

Background/Ambient Data:		Data Source
pH (SU)	6.9 -7.5	Multiple 2010 stream sample results (April – May). Sample ID: 1506147, Sequence Number: 328. Some results to give idea of ambient range.
Temperature (°F)	-	See above.
Hardness (mg/L)	92 mg/l	Application sampling data.
Ammonia-N (mg/l)	<0.02 – 0.04	Multiple 2010 stream sample results (April – May). Sample ID: 1506147, Sequence Number: 328. Some results to give idea of range.
Total Phosphorus (mg/l)	<0.01 – 0.021	See above
Nitrate-N (mg/l)	0.99 – 1.09	See above
Nitrite-N (mg/l)	<0.01 - <0.04	See above
TSS (mg/l)	<5	See above
TDS (mg/l)	180 – 186	See above
BOD5 (mg/l)	0.80 – 1.30	See above

Nearest Downstream Public Water Supply Intake: See below for **off-stream** WFP Reservoir.

PWS Waters	Little Mahanoy Creek watershed	Flow at Intake (cfs)	0.415 MGD per 2002 Source Water Assessment Public Summary, PWSID 3540030. See discussion below.
PWS RMI	NA	Distance from Outfall (mi)	0.6 miles (application info)

Changes Since Last Permit Issuance: **Natural Trout Reproduction Stream determination (headwaters to Gordon). Chapter 93 WQS revised in 2021 in terms of Ammonia-N, E Coli, and other pollutants.**

Other Comments:

- **Location**: Facility is located near headwaters of Little Mahanoy Creek, which appears to originate within Frackville Borough itself per E-maps. No upstream orphan AMD discharges shown on E-maps in area. Metals in WWTP influent indicated limited AMD metal loadings (either from I&I or use of AMD-impacted source water for non-potable uses).
- **Ashland Area Municipal Authority**: Reservoir and Water Filtration Plant are downstream of FAMA Outfall. E-maps shows the PWS on the Reservoir, not on Little Mahanoy Creek. Ashland Reservoir has a B1 high hazard Dam No. 54-075. See discussion below.
- **Heavily Effluent dominated stream:** 15:1 effluent-dominated stream at statewide LFY default assumption.
- **Q7-10 Low Flow**: Statewide 0.1 CFS/square mile LFY default used in water quality modeling in the absence of a scientifically-supported low flow estimate and no known WWTP-related stream impairment. In practical terms, the stream is 15:1 effluent-dominated during low flow conditions:
    - **Site-specific Considerations:**
        - The original 1987 WPC Report noted the stream is a losing stream in the WWTP outfall area due to the Ashland Municipal Reservoir (fed by springs and groundwater wells, but located within 0.6 miles downstream of the WWTP outfall). The original NPDES permitting including permit limits to address low flow scenarios (10.0 mg/l CBOD5 monthly average; 2.5 mg/l Ammonia-N monthly average (summer); 11.0 mg/l Nitrate-Nitrite as N monthly average; 1.0 mg/l Total Phosphorus monthly average; 6.0 mg/l DO minimum) and potential groundwater contribution to the water reservoir.
        - The WWTP outfall is located at the headwaters of Little Mahanoy Creek stream which originates within Frackville itself, with urban development/stormwater controls tending to increase stormwater runoff peak wet weather flows while decreasing Q7-10 low flow (by reducing infiltration).
        - Potential AMD contributions during low flows are not known. No orphan AMD discharge shown in E-maps for the Little Mahanoy Creek watershed and no available streams metals sampling data available in E-maps. WWTP influent/effluent data indicated limited AMD metals loadings, but some dilution (I&I).
        - As discussed below, the WFP reservoir withdrawal rate might increase groundwater withdrawal. This would reduce low flows from historic values.
    - **LFY Method**. USGS PA Streamstats is of limited accuracy when streams are subject to regulation (reservoir withdrawal), which also impacts the validity of the general LFY method (using a downstream point to estimate the Low Flow Yield). The Downstream point near Gordon Township (8.11 square mile, 1.28 CFS Q7-10 low flow) results in 0.22 CFS mile Q7-10 low flow and LFY of 0.1578 CFS/square mile for the watershed. This would not account for the reservoir groundwater withdrawal impacts. Previous evaluations used unrealistic assumptions:
        - **Previous Renewal IRR FS**: Previous Renewal Fact Sheet used 0.162 CFS/square mile LFY from stream gage No. 01469500 (Little Schuylkill River at Tamaqua, PA) which is not in the Mahanoy Creek/Susquehanna River watershed, and would include biasing from upstream orphan AMD discharges. It is not considered representative of Little Mahanoy Creek at the WWTP location.
        - **Original 8/31/1987 Water Pollution Control Report**: It referenced an inactive Gage No. 01555250 (Mahanoy Creek at Dornsiff) for a 22 CFS flow from 117 square mile area (0.1880 CFS/square mile LFY). Use of PA Bulletin No. 12 gage data is no longer allowed per USGS guidance. Mahanoy Creek has known Orphan AMD discharges that would bias any low flow estimate upward.
- **Potential Stream Impairment Causes**:
    - **Urban Stormwater Runoff**: The WWTP will not contribute to any urban stormwater sewer system impairment.
    - **AMD (pH and Metals)**: No facility Waste Load Allocations under the Mahanoy Creek TMDL (AMD). EDMR. Application data indicate AMD metal loadings in site influent/effluent. The application indicated: "the most likely source is Inflow and Infiltration within an AMD watershed".
        - Dissolved Iron limit recommended by Reasonable Potential Analysis.
        - Monitoring for Manganese recommended by Reasonable Potential Analysis.

        - Previous sampling (19 quarterly samples) indicate no Reasonable potential for Aluminum or Total Iron exceedances. No monitoring required (as Manganese and Dissolved Iron would act as indicators in event of spiking AMD-metal loadings).
    - **Other Metals Toxics**: See Reasonable Potential Analysis. Monitoring required for Antimony, Nickel, and Selenium.
    - **Dissolved Oxygen (DO)**: No known DO impairment. If plant upgrades, it is recommended they verify adequate post-aeration due to non-Summer Natural Trout (Salmonid) Reproduction DO WQS.
    - **Increasing Reservoir groundwater withdrawal**: See discussion below. **It is recommended the DEP Biologists evaluate the Little Mahanoy Creek during low flow conditions during the next NPDES Permit Renewal due to potential impacts on Q7-10 low flows by increased reservoir groundwater withdrawal rates (see below).** A dry stream condition has been included in Part C. NOTE: 2010 stream sampling results, available via DEP E-maps, did not indicate elevated BOD5 or Ammonia-N levels at a downstream sampling point (at Malones Road).
- **Downstream WFP Reservoir/PWS Intake**: The Ashland Area Municipal Authority water reservoir and Water Filtration Plant PWS intake is not located on the receiving stream (Little Mahanoy Creek).
    - The application indicated that closest downstream public water supply intake is the Ashland Area Municipal Authority, with a PWS intake within 0.6 miles of the POTW discharge outfall.
        - **Application states: "There is no water withdrawal from Little Mahanoy Creek by the Ashland Area Municipal Authority. The Creek has been isolated to run around this reservoir". "Also, note that a downstream PWS water supply is not affected by the FAMA discharge, as no water withdrawal occurs from the Little Mahanoy Creek".**
        - May 2002 "Source Water Assessment Public Summary, Ashland Area Water Authority PWSID 3550030, Ashland Reservoir, 001" indicates the source water is from springs and wells. The Report identified surface water drainage as potential source of contamination but did not identify any Little Mahanoy Creek source.
    - The DEP Safe Drinking Water Program indicated that a SRBC water withdrawal request was under review. They forwarded the following information:
        - Proposed Water Withdrawal Rate: 0.610 MGD water withdrawal rate (peak daily).
        - Reservoir water sources: Reservoir uses groundwater wells and stormwater drainage as sources. Point of Taking is at Reservoir dam, adjacent to Little Mahanoy Creek
        - Reservoir:
            - Surface Area: 15 acres
            - Gross Capacity: 288.58 acre-feet (94 MG)
            - Working capacity: 84.6 MG
            - Project Area Drainage Basin: 0.26 square miles
        - Point of Taking: 40.7775; -76.259201 (at ~1300 Feet elevation per E-maps)

Treatment Facility Summary

Treatment Facility Name: Frackville Area Municipal Authority WWTP

WQM Permit No.	Issuance Date	Scope
5491407	11/26/1991	1.4 MGD WWTP, pump station and ~43,000 LF collection system (with remainder old collection system). Grit system, mechanically cleaned bar screen, two SBRs, chemical feed system (Ferric Chloride), UV disinfection, 2 aerobic digesters, and Belt Filter Press. One pump station. Contingency plan for decant equalization basin and tertiary filters if SBRs failed to achieve CBOD5 and TP limits.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	UV Disinfection	1.4

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.4	2335	Not Overloaded	Aerobic digestion, Belt filter press and Lime stabilization.	Beneficial use or disposal

* 2018 Chapter 94 Report Attachment C notes the facility has a design peak daily flow of 2.8 MGD and peak wet weather flow of 3.73 MGD.

Changes Since Last Permit Issuance: SCADA system implemented at WWTP and one pump station (Pine Street & Lehigh Avenue) per 2018 Chapter 94 Report.

Other Comments:

- **4/17/1996 WQM Permit No. 5496401 (SCI Mahanoy)**: Force main and gravity sewer Part II WQM Permit to connect SCI Frackville was issued to SCI Mahanoy. IRR noted 10/3/1994 WQM Permit No. 5494403 (issued to SCI Frackville) authorized construction and operation of SCI Frackville Pump Station and force main located on SCI property. Design Engineer Report noted FAMA agreed to accept 175,000 GPD average monthly flow from SCI Frackville. Discharge was not to exceed 350,000 GPD peak instantaneous flow.
- **WWTP Description**:
  - Noncontinuous SBR batch discharges (12 cycles per day, 40 minutes each, at 3000 GPM with continuous inflow of sewage to process 1.44 MGD). Facility switches to SBR "storm cycle" that decreases cycle time to handle peak wet weather flows as its HFMP. UV disinfection.
  - Facility uses Ferric Chloride for phosphorus control up to 2.5 gallons per hour.
- **Sewage Sludge**: 94.1 dry tons generated in 2019. Facility beneficially uses Class B biosolids under General Permit PAG082209 and goes to American Green Corp. a Reading Anthracite subsidiary or to Commonwealth Landfill for disposal. The sludge analytical data did not address aluminum, iron, and manganese concentrations which would be expected to be present due to application Raw Sewage Influent & effluent data.
- **Collection System: Separated Sewer System**: Indication of I&I issues:
  - Older part of sewer system (~45%) consists mainly of Vitrified Clay Pipe and concrete pipes, installed in the early 1900s per Chapter 94 Report. **The Application and EDMR data indicated relatively weak BOD5 (141 mg/l LTA from 105 samples compared to 422 mg/l max) and TSS concentrations (124 mg/l LTA from 105 samples compared to 450 mg/l max) in the Raw Sewage Influent, evidence of I&I dilution.**
  - Two pumping stations in collection area:
    - Intersection of Pine Street and Lehigh Ave
    - Fireman's Road

BOD5 and TSS Reduction: Application data indicates compliance with minimum monthly average reduction requirements.

Constituent	Influent (mg/l)	Effluent (mg/l)	Reduction
BOD5	141 (LTA)	CBOD5: <2.1 (LTA) which equates to 2.52 mg/l BOD5 at 1.2:1 ratio.	>85% reduction
TSS	124.0 (LTA)	<1.4	>85% reduction

Compliance History

DMR Data for Outfall 001 (from April 1, 2020 to March 31, 2021)

Parameter	MAR-21	FEB-21	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20
Flow (MGD) Average Monthly	**1.592**	**0.903**	**1.089**	**1.244**	**0.631**	**0.516**	**0.507**	**0.659**	**0.639**	**1.166**	**1.072**	**1.18**
Flow (MGD) Daily Maximum	2.571	2.333	1.547	6.364	1.346	1.699	0.642	1.372	1.034	3.053	2.837	3.712
pH (S.U.) Minimum	6.3	6.4	6.3	6.3	6.3	6.2	6.2	6.3	6.3	6.2	6.2	6.2
pH (S.U.) Maximum	**6.8**	**6.7**	**6.7**	**6.5**	**6.6**	**6.7**	**6.7**	**6.6**	**6.6**	**6.6**	**6.6**	**6.4**
DO (mg/L) Minimum	**8.3**	**8.6**	**8.6**	**8.1**	**8.1**	**8.0**	8.1	7.5	7.4	6.9	**7.1**	**7.3**
CBOD5 (lbs/day) Average Monthly	< 31	< 15	< 17	< 15	< 10	< 10	< 10	< 12	< 10	< 23	< 15	< 25
CBOD5 (lbs/day) Weekly Average	< 35	< 17	< 21	< 28	< 10	< 18	15	17	< 12	< 40	< 20	< 39
CBOD5 (mg/L) Average Monthly	< 2.1	< 2.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.3	< 2.1	< 2.0	< 2.0	< 2.0	2.1
CBOD5 (mg/L) Weekly Average	2.3	< 2.2	< 2.0	< 2.2	< 2.0	< 2.0	3.3	< 2.4	< 2.0	< 2.0	< 2.0	< 2.3
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	981	936	1078	1081	719	1001	770	933	698	1005	963	1681
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1403	1171	1245	1460	815	1482	1006	1391	781	1351	1059	2811
BOD5 (mg/L) Raw Sewage Influent Average Monthly	**68.6**	**130.9**	**128.3**	**162.8**	**149.2**	**219**	**179**	**152**	**140**	**94**	**136.2**	**140.1**
BOD5 (mg/L) Raw Sewage Influent Weekly Average	**87.3**	**163**	**136**	**198.5**	**178.5**	**310**	**243**	**169**	**155**	**117.5**	**161**	**233.5**
TSS (lbs/day) Average Monthly	< 50	< 22	< 33	< 19	< 17	< 7	< 10	13	< 13	< 14	< 12	< 14

TSS (lbs/day) Raw Sewage Influent Average Monthly	836	708	786	728	533	967	848	1023	795	1229	746	1186
TSS (lbs/day) Raw Sewage Influent Weekly Average	1214	959	900	1224	626	1467	1069	1331	1037	1881	889	1702
TSS (lbs/day) Weekly Average	< 60	< 26	< 50	< 27	< 27	< 18	25	20	< 23	< 29	17	< 19
TSS (mg/L) Average Monthly	< 3.6	< 3.0	< 3.9	< 2.9	< 3.5	< 1.3	< 2.3	2.1	< 2.5	< 1.1	< 1.8	1.2
TSS (mg/L) Raw Sewage Influent Average Monthly	**59**	**98**	**94**	**122**	**110**	**204**	**195**	**172**	**160**	**113**	**106**	**99**
TSS (mg/L) Raw Sewage Influent Weekly Average	**95**	**111**	**105**	**220**	**138**	**308**	**259**	**207**	**217**	**138**	**135**	**115**
TSS (mg/L) Weekly Average	< 5.0	< 3.0	< 6.0	< 3.5	< 5.5	< 2.0	5.5	2.5	< 4.5	< 1.5	2.5	1.5
Fecal Coliform (CFU/100 ml) Geometric Mean	11	< 10	< 13	1	1	19	30	34	6	3	1	5
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	20	< 10	100	10	10	520	**1350**	**4000**	60	10	10	2200
Nitrate-Nitrite (lbs/day) Average Monthly	28	22	29	22	15	12	16	30	14	19	8	18
Nitrate-Nitrite (mg/L) Average Monthly	1.96	3.13	3.45	3.19	3.1	2.45	3.57	5.03	2.86	1.58	1.13	1.49
Nitrate-Nitrite (lbs) Total Monthly	880	623	901	680	443	371	477	920	441	573	256	553
Total Nitrogen (mg/L) Average Monthly	< 3.02	< 4.19	< 4.45	< 4.16	< 4.01	< 3.35	< 4.5	< 5.89	< 3.55	< 2.19	< 2.12	2.45
Total Nitrogen (lbs) Effluent Net Total Monthly	< 1349	< 837	< 1164	< 892	< 578	< 512	< 602	< 1079	< 550	< 778	< 473	912
Total Nitrogen (lbs) Total Monthly	< 1349	< 837	< 1164	< 892	< 578	< 512	< 602	< 1079	< 550	< 778	< 473	912
Total Nitrogen (lbs) Effluent Net Total Annual							< 2216					

Total Nitrogen (lbs) Total Annual							< 2216					
Ammonia (lbs/day) Average Monthly	4.0	< 0.8	< 1.0	< 0.9	< 0.7	< 0.6	< 0.5	< 0.6	< 0.5	< 2.0	< 0.8	< 2.0
Ammonia (mg/L) Average Monthly	**0.25**	**< 0.11**	**< 0.13**	**< 0.12**	**< 0.14**	**< 0.12**	**< 0.11**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.1**	**< 0.17**
Ammonia (lbs) Total Monthly	112	< 21	< 36	< 28	< 21	< 20	< 14	< 19	< 16	< 55	< 23	< 70
Ammonia (lbs) Total Annual							< 123					
TKN (mg/L) Average Monthly	< 1.06	< 1.06	< 1.0	< 0.97	< 0.94	< 0.9	< 0.93	< 0.87	< 0.69	< 0.61	< 0.99	0.96
TKN (lbs) Total Monthly	< 469	< 214	< 263	< 213	< 135	< 141	< 125	< 159	< 109	< 205	< 217	360
Total Phosphorus (lbs/day) Average Monthly	6.0	2.0	2.0	< 4.0	3.0	3.0	4.0	5.0	5.0	7.0	4.0	11.0
Total Phosphorus (mg/L) Average Monthly	0.43	0.33	0.27	< 0.64	0.58	0.72	0.94	0.85	0.92	0.7	0.65	0.91
Total Phosphorus (lbs) Effluent Net Total Monthly	193	66	69	< 117	84	99	125	151	142	225	136	344
Total Phosphorus (lbs) Total Monthly	193	66	69	< 117	84	99	125	151	142	225	136	344
Total Phosphorus (lbs) Effluent Net Total Annual							529					
Total Phosphorus (lbs) Total Annual							529					
Total Aluminum (lbs/day) Average Quarterly	< 0.7			< 0.5			< 0.1			< 0.2		
Total Aluminum (mg/L) Average Quarterly	**< 0.1**			**< 0.1**			**< 0.02**			**< 0.02**		
Total Iron (lbs/day) Average Quarterly	0.6			0.3			0.5			0.6		
Total Iron (mg/L) Average Quarterly	**0.09**			**0.06**			**0.08**			**0.07**		
Total Manganese (lbs/day) Average Quarterly	0.5			0.2			0.05			0.3		

Total Manganese (mg/L) Average Quarterly	**0.08**			**0.04**			**0.009**			**0.028**		
UV Dosage (mjoules/cm²) Minimum	41.05	30.14	41.14	38.36	21.6	18.4	21.6	24.6	29.6	48.3	44.8	21.3
UV Dosage (mjoules/cm²) Average Monthly	41.16	35.76	41.16	43.45	26.92	19.4	30.9	25.9	32.8	52.5	47.2	39.4

DMR Data for Outfall 001 (from February 1, 2019 to January 31, 2020)

Parameter	JAN-20	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19
Flow (MGD) Average Monthly	**0.893**	**0.912**	**0.884**	**0.633**	**0.424**	**0.576**	**0.951**	**0.987**	**1.522**	**1.412**	**1.306**	**1.119**
Flow (MGD) Daily Maximum	1.699	1.319	2.778	3.036	0.593	0.959	2.351	1.443	3.701	3.188	3.191	1.455
pH (S.U.) Minimum	6.3	6.2	6.3	6.3	6.3	6.3	6.2	6.3	6.3	6.3	6.3	6.3
pH (S.U.) Maximum	**6.6**	**6.6**	**6.6**	**6.6**	**6.6**	**6.5**	**6.6**	**6.6**	**6.6**	**6.6**	**6.8**	**6.8**
DO (mg/L) Minimum	**7.9**	**7.9**	**8.1**	**8.0**	7.6	7.3	7.0	7.0	**7.0**	**7.3**	**7.1**	**7.8**
CBOD5 (lbs/day) Average Monthly	< 16	< 15	< 13	< 15	< 7	< 11	< 17	< 17	< 21	< 20	< 24	< 20
CBOD5 (lbs/day) Weekly Average	< 27	< 18	< 16	< 38	< 8	< 17	< 22	< 20	< 28	< 30	< 35	< 26
CBOD5 (mg/L) Average Monthly	< 2.3	< 2.0	< 2.0	< 2.0	< 2.0	< 2.5	< 2.0	< 2.0	< 2.0	< 2.0	< 2.1	< 2.1
CBOD5 (mg/L) Weekly Average	< 3.7	< 2.2	< 2.0	< 2.2	< 2.0	< 3.9	< 2.0	< 2.0	< 2.0	< 2.0	< 2.5	< 2.5
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	1014	1050	811	1182	615	619	1248	1026	672	1046	1233	998
BOD5 (lbs/day) Raw Sewage Influent Weekly Average	1308	1209	1073	2808	692	720	1998	1238	915	1481	1891	1309
BOD5 (mg/L) Raw Sewage Influent Average Monthly	**146**	**141**	**128.8**	**174**	**173**	**135.7**	**153.7**	**123.2**	**66**	**121**	**112**	**107**

BOD5 (mg/L) Raw Sewage Influent Weekly Average	**189**	**157**	**153.5**	**207**	**217**	**176.7**	**323.5**	**144**	**103**	**161**	**121**	**128**
TSS (lbs/day) Average Monthly	7	< 7	< 6	< 17	< 5	< 7	< 11	< 18	< 26	< 11	< 12	< 13
TSS (lbs/day) Raw Sewage Influent Average Monthly	765	734	616	1199	587	665	1040	1028	725	1061	1026	813
TSS (lbs/day) Raw Sewage Influent Weekly Average	912	887	713	2718	615	782	1856	1139	915	1763	1511	1131
TSS (lbs/day) Weekly Average	< 8	< 9	8	< 54	10	< 12	< 18	33	< 72	< 15	22	20
TSS (mg/L) Average Monthly	< 1.0	< 1.0	< 1.0	< 1.0	< 1.5	< 1.6	< 1.3	< 1.9	< 2.3	< 1.1	< 1.1	< 1.4
TSS (mg/L) Raw Sewage Influent Average Monthly	**110**	**100**	**101**	**186**	**164**	**145**	**136**	**124**	**71**	**118**	**93**	**87**
TSS (mg/L) Raw Sewage Influent Weekly Average	**132**	**123**	**133**	**199**	**179**	**192**	**300**	**147**	**96**	**181**	**99**	**110**
TSS (mg/L) Weekly Average	< 1.0	< 1.0	1.0	3.0	2.5	< 3.0	< 2.0	4.0	< 6.0	< 1.5	1.5	2.0
Fecal Coliform (CFU/100 ml) Geometric Mean	33	7	1	68	98	89	46	17	1	8	2	22
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	1900	110	10	900	310	290	380	260	1	200	20	720
Nitrate-Nitrite (lbs/day) Average Monthly	10	12	12	14	7	13	13	17	25	19	17	19
Nitrate-Nitrite (mg/L) Average Monthly	1.37	1.63	1.98	1.72	2.05	2.81	1.52	2.0	2.42	1.97	1.61	2.1
Nitrate-Nitrite (lbs) Total Monthly	298	376	366	426	224	401	405	510	773	569	524	546
Total Nitrogen (mg/L) Average Monthly	2.09	2.4	< 2.63	< 2.74	< 2.82	< 3.41	2.41	2.97	3.72	3.29	2.86	3.38
Total Nitrogen (lbs) Effluent Net Total Monthly	457	551	< 494	< 673	< 306	< 485	638	759	1229	947	949	878

Total Nitrogen (lbs) Total Monthly	457	551	< 494	< 673	< 306	< 485	638	759	1229	947	949	878
Total Nitrogen (lbs) Effluent Net Total Annual					< 10848							
Total Nitrogen (lbs) Total Annual					< 10848							
Ammonia (lbs/day) Average Monthly	< 0.7	< 0.9	< 0.7	< 3.0	< 0.4	< 0.5	< 1.0	< 1.0	< 2.0	< 3.0	< 2.0	< 3.0
Ammonia (mg/L) Average Monthly	**< 0.1**	**< 0.12**	**< 0.11**	**< 0.34**	**< 0.1**	**< 0.1**	**< 0.14**	**< 0.14**	**< 0.14**	**< 0.27**	**< 0.21**	**< 0.27**
Ammonia (lbs) Total Monthly	< 22	< 27	< 21	< 98	< 11	< 14	< 35	< 37	< 48	< 84	< 67	< 71
Ammonia (lbs) Total Annual					< 885							
TKN (mg/L) Average Monthly	0.72	0.76	< 0.65	< 1.02	< 0.76	< 0.6	0.89	0.97	1.3	1.32	1.26	1.27
TKN (lbs) Total Monthly	159	175	< 129	< 246	< 82	< 85	233	248	456	377	424	333
Total Phosphorus (lbs/day) Average Monthly	4.0	3.0	2.0	3.0	3.0	4.0	6.0	7.0	4.0	< 4.0	6.0	5.0
Total Phosphorus (mg/L) Average Monthly	0.58	0.44	0.37	0.45	0.91	0.77	0.66	0.83	0.42	< 0.45	0.5	0.59
Total Phosphorus (lbs) Effluent Net Total Monthly	123	100	64	81	99	110	172	208	129	< 110	177	152
Total Phosphorus (lbs) Total Monthly	123	100	64	81	99	110	172	208	129	< 110	177	152
Total Phosphorus (lbs) Effluent Net Total Annual					< 1758							
Total Phosphorus (lbs) Total Annual					< 1758							
Total Aluminum (lbs/day) Average Quarterly		< 0.2			< 0.08			0.3			0.3	
Total Aluminum (mg/L) Average Quarterly		**< 0.02**			**< 0.02**			**0.03**			**0.03**	
Total Iron (lbs/day) Average Quarterly		0.4			0.1			2.0			1.0	
Total Iron (mg/L) Average Quarterly		**0.05**			**0.04**			**0.16**			**0.12**	

Total Manganese (lbs/day) Average Quarterly		0.1			0.06			0.3			1.0	
Total Manganese (mg/L) Average Quarterly		**0.018**			**0.014**			**0.028**			**0.137**	
UV Dosage (mjoules/cm²) Minimum	27.4	37.5	43.6	30.9	42.5	49.3	52.5	52.9	49.3	36.1	38.6	49.6
UV Dosage (mjoules/cm²) Average Monthly	29.3	42.6	48.1	44.4	45.9	52	57.7	54.3	53.7	37.9	42.8	54.9

Compliance History

Effluent Violations for Outfall 001, from: May 1, 2020 To: March 31, 2021

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	08/31/20	IMAX	4000	CFU/100 ml	1000	CFU/100 ml
Fecal Coliform	09/30/20	IMAX	1350	CFU/100 ml	1000	CFU/100 ml

NOTE: UV disinfection system (damaged by past flooding events) was replaced-in-kind per 2020 Chapter 94 Report.

Inspection History:

CLIENT	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	# OF VIOLATIONS
FRACKVILLE AREA MUN AUTH	WPCNP	3092885	10/14/2020	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUN AUTH	WPCNP	3026648	04/30/2020	Administrative/File Review	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2861476	03/12/2019	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2624904	06/29/2017	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2565361	02/27/2017	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2539923	09/19/2016	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2453025	02/25/2016	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2476971	08/24/2015	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2491809	05/19/2015	Routine/Partial Inspection	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2374354	02/13/2015	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2368833	01/28/2015	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2373503	05/28/2014	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2267313	05/01/2014	Administrative/File Review	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2341624	04/28/2014	Compliance Evaluation	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2174324	03/27/2013	Compliance Evaluation	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2223392	03/26/2013	Administrative/File Review	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2141454	02/21/2013	Administrative/File Review	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2146332	12/17/2012	Follow-up Inspection	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2145406	09/25/2012	Administrative/File Review	Violation(s) Noted	1

FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2105310	08/23/2012	Compliance Sampling	No Violations Noted	0
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2145384	08/01/2012	Administrative/File Review	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2078663	06/14/2012	Administrative/File Review	Violation(s) Noted	1
FRACKVILLE AREA MUNI AUTH SCHUYLKILL CNTY	WPCNP	2062308	01/24/2012	Compliance Evaluation	No Violations Noted	0

Compliance History:

2020 Chapter 94 Report Information: Some issues noted.

- Form Items 1, 2, 3, and 9: 2018 overloading. No current or projected hydraulic or organic overloading.
  - **Permitted capacities:**
    - **Hydraulic Design Capacity:** 1.4 MGD
    - **Organic Design Capacity:** 2,335 lbs BOD5/day
  - **2018: 2018 hydraulic overloading and exceedances blamed on flooding and extreme precipitation year events. 2018 Chapter 94 Report indicated July – September overloading. CAP proposed only continuance of I&I through unidentified rehabilitation projects. 2,636 EDUs at 3.5 persons/EDU and 0.091 lbs/capita was estimated. The DWFM design factor is 0.17 lbs/capita indicating some level of dilution or inaccurate EDU/capita assumption.**
  - 2019: Two months above hydraulic capacity.
  - 2020: No months over hydraulic capacity.
  - Hydraulic Load Graph: **Did not match spreadsheet tables.** They apparently used max daily values in the graph, not monthly average flows.
  - Organic Loadings: Application did not estimate population. The 2020 Chapter 94 Report indicated 2,649 Existing EDUs (at 3.5 persons/EDU) with 3 EDUs/year projected growth after 31 EDUs in 2021. 0.371 lbs/EDU and 0.106 lbs per capita assumed.
- **Form Item 4 (Sewer Extensions Constructed or Proposed; Chapter 94.12(a)(4))**: **Incorrectly marked "N/A" and no sewer system map provided.** This item is applicable. If none, then the response should have been "none". Otherwise, all information is required. For example, 31 EDUs were noted expected in 2021, which would indicate a newly connected area.
- **Form Item 5 (Sewer System Monitoring, Maintenance, Repair and Rehabilitation; Chapter 94.12(a)(5)):** No O&M program description. They noted conducted sewer maintenance work in Attachment D. As noted above, sewer system description and EDMR/application raw sewage influent concentration data indicated apparent I&I influent dilution at present, and as a contributing factor in the 2018 hydraulic overloading. An I&I program is recommended.
- **Form Item 6 (Condition of Sewer System; Chapter 92a.12(a)(6))**: No capacity issues in 2020, but no discussion of overall sewer system condition (identifying areas where rehab or cleaning is needed or underway) other than Attachment D mention of 1000 feet of sewer main cleaned and televised, replacement of damaged cleanouts, pump station cleanings etc. They did some WWTP replacement-in-kind (grit removal system in 2019; UV disinfection system in 2020).
- **Form Item 7 (Pump Stations; Chapter 92a.12(a)(7))**: No comparison of maximum pumping rates with present max flows and projected 2-year flows for each station. No discussion of tributary Frackville SCI Pump Station condition or flows. Two FAMA Pump stations identified:
  - Pine Street and Lehigh Avenue: Duplex pump station with two 700 GPM at 127 Feet TDH pumps. No estimates of current or projected flows. No mention of any flow meter or measurement method.
  - Fireman's Road: Two 55 GPM pumps (no TDH information). No estimates of current or projected flows. No mention of any flow meter or measurement method.
- **Form Item 8 (IW Flows; Chapter 94.12(a)(8):** Left blank. NPDES Permit Renewal application indicated no IW dischargers (only domestic wastewater being discharged from Industrial Park), but industrial categories now include dental offices, hospitals, etc. They should check their customer base against the 40 CFR 400 – 500 industrial categories and SIC codes to verify absence of industrial dischargers.

- **Form Item 10 (Sewage Sludge Management Inventory):** Left blank. Existing NPDES Permit Part B.I.C.4.c required a Solids Management Inventory including at minimum: average effluent CBOD5, average solids concentration of return or waste sludge flow (mg/l):
  - Use of permit limits for CBOD5 effluents estimates is not adequate to meet reporting requirements.
  - The Attachment C WWTP description gives some design loadings but not actual data to meet reporting requirements for return/waste sludge concentrations.
  - Attachment D estimated 98.51 dry tons sludge and 9.93 tons grit generated in 2020.
  - Draft NPDES Permit Renewal will have updated Part C.III Solids Management conditions that will be applicable upon PED.
- **Form Item 12 (Flow Meter Calibration; Chapter 94.12(b)):** Some odd language needs clarification.
  - Attachment F indicates that flow meters are installed at various locations within the system. The attached (difficult to read) JS instrumentation & Calibration LLC sheet mentions WWTP meter calibration but is unclear on location of all calibrated units/equipment. More explanation is needed in the narrative and a more readable contractor sheet.
  - Attachment F did not contain a flow report calibration form (unlike previous years), but a consultant work sheet with handwritten notes that appears to indicate the WWTP Parshall flume was checked at 519 GPM (0.747 MGD).

Compliance Check: No open violations per 5/17/2021 WMS Query (Open Violations per Client Number):

Permit: pa0062219
Client ID: 78531
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)** 1.4
Latitude 40º 46' 48.00" **Longitude** -76º 14' 57.00"
Wastewater Description: Sewage Effluent

Permit Limits and Monitoring: Changes bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	11**6.7** Lbs/d 175**.1** Lb/d 10.0 15.0 20.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing WQBEL. **Significant digit added and mass loading recalculated.** Application data (BOD5): 4.0 mg/l max and 2.7 mg/l average (3 samples) EDMR: <2.5 mg/l CBOD5 monthly average (12 months)
TSS	350**.2** Lbs/d 525**.4** Lb/d 30.0 45.0 60.0	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) **Significant digit added and mass loading recalculated.** Application data: 2.0 mg/l max and 1.7 mg/l average (3 samples)
pH	6.0 – 9.0 SU	**IMIN** - IMAX	Existing Technology limit (Chapter 92a.47a and Chapter 95.5). Application data: 6.6 – 6.8 SU (730 samples).
Dissolved Oxygen (DO)	6.0	**IMIN**	Existing WQBEL. See below. Application data: 6.6 mg/l DO minimum
Fecal Coliform (5/1 – 9/30)	200/100 ml 1,000/100 ml	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47). **Units updated from CFU/100 ml**. Application data: 260/100 ml max and **106.7/100 ml LTA (201 sampes).**
Fecal Coliform (10/1 – 4/30)	2,000/100 ml 10,000 ml/100 ml	Geo Mean IMAX	See above
Total Residual Chlorine (TRC)	**0.02** **0.06**	**Average Monthly** **IMAX**	**UV is approved disinfection method. Updated Part C.VII.D (Chlorine Minimization) Condition in event of use for emergency disinfection or other chlorine usage. Monitoring only when chlorine is used in manner to end up in effluent.** **Application data: 0.02 mg/l max and <0.02 mg/l average (3 samples, 1 ND). No EDMR data available.**
Ammonia-Nitrogen (May 1 – Oct 31) **(Interim – First 3 Years)**	Report Lbs Report Lbs 29.2 Lb/d **Report** 2.5 **5.0** 5.0	Total Annual Total Monthly Monthly Average **Daily Max** Monthly Average **Daily Max** IMAX	Existing WQBEL and Chesapeake Bay parameter. **The Daily Max limit has been added for EDMR reporting purposes (as any Daily Max above IMAX limit is violation).** Application data: 0.5 mg/l max and 0.4 mg/l average (3 samples).
Ammonia-Nitrogen (Nov 1 – April 30) **(Interim – First 3 Years)**	Report Lbs Report Lbs 87.6 Lb/d **Report** 7.5 **15.0**	Total Annual Total Monthly Monthly Average **Daily Max** Monthly Average **Daily Max**	See above.

	15.0	IMAX	
Ammonia-Nitrogen (May 1 – Oct 31) (4th Year of Permit)	**Report Lbs Report Lbs 17.8 Lb/d 1.53 3.06 3.06**	**Total Annual Total Monthly Monthly Average Monthly Average Daily Max IMAX**	**New WQBEL per Water Quality Modeling. They can meet the new limits based on application and EDMR data but I&I issues might require further action. The Daily Max limit has been added for EDMR reporting purposes (as any Daily Max above IMAX limit is violation). A sensitivity analysis (assuming dry stream scenario with LFY of 0.001 CFS/square mile) would reduce the limit to 1.37 mg/l Summer monthly average.**
Ammonia-Nitrogen (Nov 1 – April 30) (4th Year of Permit)	**Report Lbs Report Lbs 53.5 Lb/d 4.59 9.18 9.18**	**Total Annual Total Monthly Monthly Average Monthly Average Daily Max IMAX**	**See above. Standard multipliers used.**
Total Phosphorus	Report Lbs Report Lbs 11.7 Lb/d 1.0 **2.0** 2.0	Total Annual Total Monthly Monthly Average Monthly Average **Daily Max** IMAX	Existing WQBEL and Chesapeake Bay annual mass cap for Phase 3 facility per DEP Phase 2 Watershed Implementation Plan Supplement. **The Daily Max limit has been added for EDMR reporting purposes (as any Daily Max above IMAX limit is violation).** Application data: 0.6 mg/l max and 0.6 mg/l average (3 samples).
Total Nitrogen (Nitrate-Nitrite-N + TKN measured in same sample)	Report Lbs Report Lbs Report Report	Total Annual Total Monthly Monthly Average Monthly Average	See above. Application data: TN: 3.6 mg/l max and 3.4 mg/l average (3 samples). TKN: 1.3 mg/l max and 1.1 mg/l average (3 samples). Nitrate-Nitrite as N: 2.4 mg/l max and 2.3 mg/l average (3 samples).
Nitrate-Nitrite-N	Report Lbs Report Lbs 128**.0** Lb/d 11.0 **22.0** 22.0	Total Annual Total Monthly Monthly Average Monthly Average **Daily Max** IMAX	Existing WQBEL. Antibacksliding prohibits relaxation of existing limit. **The Daily Max limit has been added for EDMR reporting purposes (as any Daily Max above IMAX limit is violation).** Nitrate-Nitrite as N: 2.4 mg/l max and 2.3 mg/l average (3 samples). See EDMR data.
Net Total Nitrogen	25,570 Lbs/year Report Lbs/year	Total Annual Total Monthly	See above
Net Total Phosphorus	3,409 Lbs/year Report Lbs/year	Total Annual Total Monthly	See above.
TDS, Chlorides, Sulfates, and Bromide	-	-	Not required per Reasonable Potential Analysis. Application data: TDS: 226.0 mg/l max and 196.7 mg/l average (3 samples) Chlorides: 78.0 mg/l max and 76.3 mg/l average (3 samples) Sulfates: 23.0 mg/l max and 22.0 mg/l average (3 samples). Bromide: 0.2 mg/l max and 0.2 mg/l LTA (3 samples)

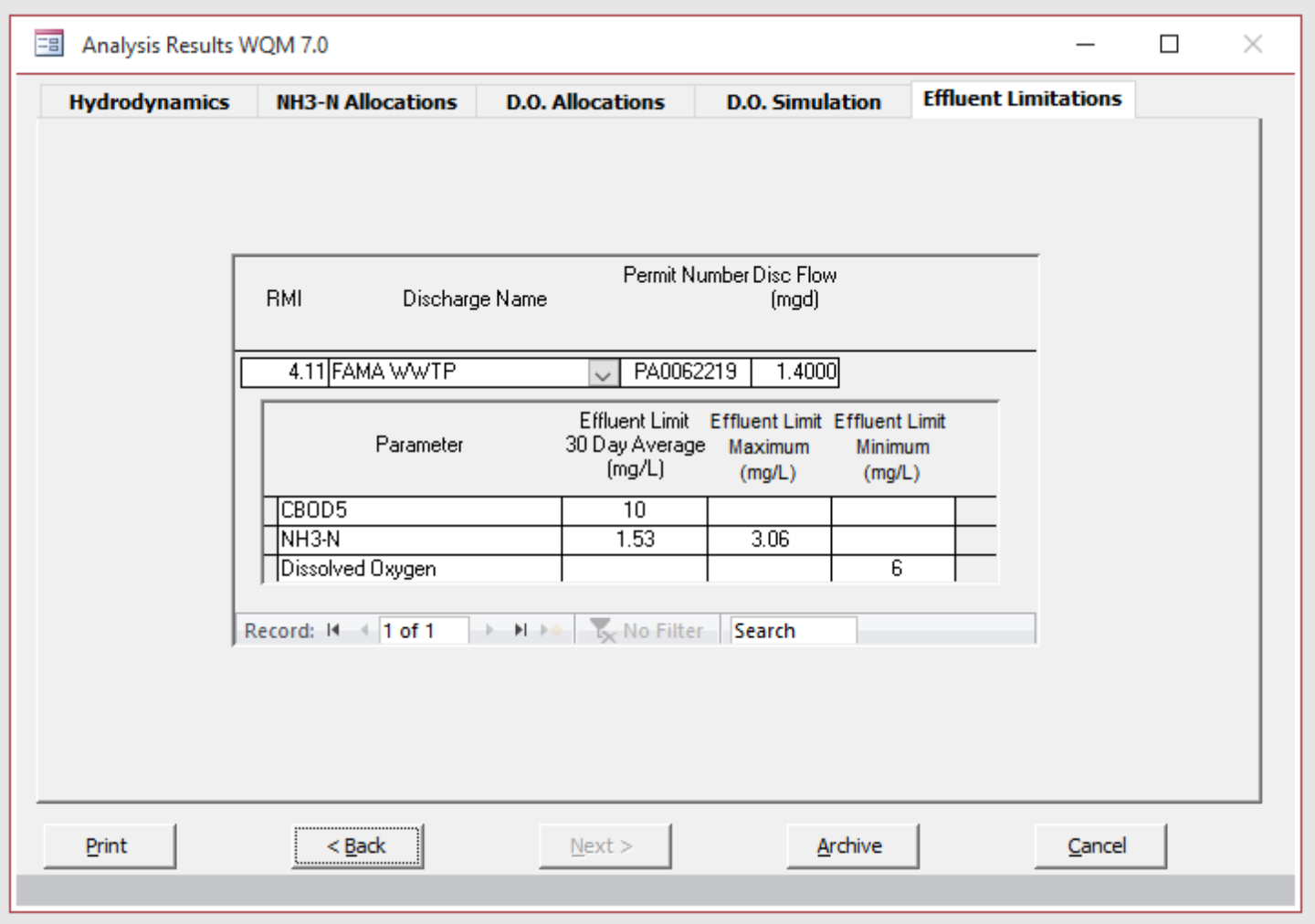
Total Aluminum	-	-	Not required per Reasonable Potential Analysis. Application data: 30 ug/l max and <20.789 ug/l average (19 samples).
Total Manganese	**Report Lbs/d** **Report Lbs/d** **Report** **Report**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	Monitoring required per Reasonable Potential Analysis. Application data: 146.0 ug/l max and 50.895 ug/l average (19 samples).
Total Iron	-	-	Not required per Reasonable Potential Analysis. Application data: 160.0 ug/l max and 66.482 ug/l average (19 samples).
Total Copper **Interim – monitoring 3 years** **Final – 4th year**	**0.075 Lbs/d** **0.100 Lbs/d** **6.42 ug/l** **8.64 ug/l** **8.64 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBEL per Reasonable Potential Analysis.** Application data: **7.0 ug/l max and 6.667 ug/l average (3 samples)** Ten Week Sampling Program: **14.0098 ug/l LTAMEC and 0.2280208**
Total Zinc **Interim – monitoring 3 years** **Final – 4th year**	**0.91 Lbs/d** **0.91 Lbs/d** **77.6 ug/l** **77.6 ug/l** **77.6 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBEL per Reasonable Potential Analysis.** Application data: **98 ug/l max and 87 ug/l average (3 samples)** Ten Week Sampling Program: **104.2088 ug/l LTAMEC and 0.2215659 COV.**
Total Antimony	**Report Lbs/d** **Report Lbs/d** **Report** **Report**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**New Monitoring requirement per Reasonable Potential Analysis.** Application data: 0.80 ug/l max and 0.5667 ug/l average (3 samples). Lab QL at 0.2 ug/l with 1 ND. DEP QL at 2 ug/l.
Dissolved Iron **Interim – monitoring 3 years** **Final – 4th year**	**3.74 Lbs/d** **5.83Lbs/d** **320.0 ug/l** **499.0 ug/l** **800.0 ug/l**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max** **IMAX**	**New WQBEL per Reasonable Potential Analysis.** Application data: 30.0 ug/l max and 26.667 ug/l average (3 samples).
Total Nickel	**Report Lbs/d** **Report Lbs/d** **Report** **Report**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**New Monitoring requirement per Reasonable Potential Analysis.** Application data: 4.20 ug/l max and 3.967 ug/l average (3 samples). Lab QL at 2 ug/l. DEP QL at 4 ug/l.
Total Selenium	**Report Lbs/d** **Report Lbs/d** **Report** **Report**	**Monthly Average** **Daily Max** **Monthly Average** **Daily Max**	**New Monitoring requirement per Reasonable Potential Analysis.** Application data: 0.90 ug/l max and 0.533 ug/l average (3 samples). 1 ND. Lab QL at 0.3 ug/l. DEP QL at 5 ug/l.
BOD5 Minimum Reduction	**85%**	**Minimum Monthly Average**	**Existing NPDES permit and Chapter 92a.47 requirement with reporting added.**
TSS Minimum Reduction	**85%**	**Minimum Monthly Average**	**See above.**

Comments:

- Existing BOD5 and TSS Influent monitoring moved to New Internal Monitoring Point/Outfall No. 101 (raw sewage influent at headworks) created using Outfall No. 001 locational data.

- **UV dosage reporting: EDMR reporting conflicts with NPDES Permit. Clarification that (mJoules/cm^2). Clarified for renewal.**
- **Dissolved Oxygen (DO)**: The stream has been classified as a Natural Trout Reproduction stream subject to non-summer DO limits (7-day average 9.0 mg/l; minimum 8.0 mg/l; October 1 through May 31) found in Chapter 93.8. The facility will have to evaluate whether additional aeration is required in any future WQM permit application.
- **Reasonable Potential Analysis**: See Toxic Management Spreadsheet and TOXCONC Spreadsheet. Copper and Zinc required permit limits. Antimony, Dissolved Iron, Manganese, and Nickel require monitoring. Previous AMD metal monitoring (19) samples indicated no need for additional Aluminum or Total Iron monitoring.
    - **Sources**: Application indicates no industrial users.
    - **No Polyacrylamide Usage:** Application states: "The SDS sheet for KC-021 is included in Tab 10 of the revised permit application. There is no reference to this chemical being a polyacrylamide". Therefore, no acrylamide monitoring or limit is needed.
    - **Modeling Assumptions**: Assumed statewide default 0.1 CFS/square mile Low Flow Yield. Effluent discharge hardness of 57.2 mg/l and stream hardness of 92 mg/l used in modeling.

Location	Elevation	Drainage Area	Assumed RMI
Point 1 (Outfall No. 001) 40.778963 -76.2487883	~1335	1.44 square miles	4.11
Point 2 (Point of Taking for Reservoir) 40.7775 -76.259201	1300	1.94 square miles (excluding reservoir and its drainage area per delineated watershed)	3.45
Point 3 (upstream of WFP) 40.773788 -76.271678	1200	2.72 square miles	2.52
Point 4 (by Gordon) 40.779963 -76.248783	900	6.64 square miles	0.001



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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Antimony	Report	Report	Report	Report	Report	µg/L	5.97	THH	Discharge Conc > 10% WQBEL (no RP)
Total Copper	0.075	0.1	6.42	8.64	8.64	µg/L	6.42	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	3.74	5.83	320	499	800	µg/L	320	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,066	THH	Discharge Conc > 10% WQBEL (no RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	36.1	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.32	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	0.91	0.91	77.6	77.6	77.6	µg/L	77.6	AFC	Discharge Conc ≥ 50% WQBEL (RP)

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9 — FAMA WWTP

0.144	= Q stream (cfs)	0.5	= CV Daily
1.4	= Q discharge (MGD)	0.5	= CV Hourly
4	= 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 = 0.040	1.3.2.iii	WLA cfc = 0.032
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.015	5.1d	LTA_cfc = 0.018

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.026	AFC
		INST MAX LIMIT (mg/l) = 0.060	

	A	B	C	D
			Reviewer/Permit Engineer:	Berger
	Facility:	Frackville Area Municipal Authority		
	NPDES #:	PA0062219		
	Outfall No:	001		
	n (Samples/Month):	4		
	Parameter	Distribution Applied	Coefficient of Variation (daily)	Avg. Monthly
	Free Cyanide (mg/l)	Delta-Lognormal	#DIV/0!	#DIV/0!
	Total Phenolics (mg/L)	Lognormal	0.1334605	0.0169005
2	Bis(2-EH) Phthalate (mg/L	Delta-Lognormal	#DIV/0!	#DIV/0!
3	Copper (mg/L)	Lognormal	0.2280208	0.0140098
4	Zinc (mg/L)	Lognormal	0.2215659	0.1042088

	Facility:		Frackville Area Municipal Authority			
	NPDES #:		PA0062219			
	Outfall No:		001			
	n (Samples/Month):		4			
	Reviewer/Permit Engineer:		Berger			
Parameter Name	Free Cyanide	Total Phenolics	bis(2-EH) Phthalat	Copper	Zinc	
Units	mg/l	mg/L	mg/L	mg/L	mg/L	
Detection Limit	0.004		0.005			
Sample Date	*When entering values below the detection limit, enter "ND" or use the < notation (eg. <0.0*					
6/24/2020	<0.004	0.02	<0.005	0.007	0.065	
7/1/2020	<0.004	0.014	<0.005	0.009	0.055	
7/8/2020	<0.004	0.014	<0.005	0.01	0.088	
7/15/2020	<0.004	0.014	<0.005	0.011	0.079	
7/22/2020	<0.004	0.015	<0.005	0.01	0.068	
7/29/2020	<0.004	0.012	<0.005	0.011	0.092	
8/4/2020	<0.004	0.013	<0.005	0.01	0.07	
8/12/2020	<0.004	0.015	<0.005	0.01	0.078	
8/19/2020	<0.004	0.014	<0.005	0.015	0.114	
8/26/2020	<0.004	0.014	<0.005	0.015	0.1	

Development of Effluent Limitations

Outfall No.	002, 003, and 004	**Design Flow (MGD)**	0
	40º 46' 51.05" (002)		-76º 14' 53.23" (002)
	40º 46' 48.42" (003)		-76º 14' 54.99" (003)
Latitude	40º 46' 48.85" (004)	**Longitude**	-76º 14' 56.19" (004)

Wastewater Description: Stormwater associated with industrial activities

Permit Limits and Monitoring: New requirements for stormwater outfalls being incorporated into the NPDES Permit

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
TSS	**100.0**	**IMAX**	**Permit limits based on General Permit PAG-03 statewide BPJ benchmark limits.**
pH	**6.0 – 9.0 SU**	**IMIN - IMAX**	**New permit limit requirement for TMDL AMD stream. Limit based on Chapter 95.2.**
Oil & Grease	**30.0**	**IMAX**	**New permit limit and monitoring requirement to address potential for releases. Chapter 95.2-based limit.**
Total Iron	**Report**	**IMAX**	**New monitoring requirement, especially relevant to stormwater discharge to TMDL AMD stream.**

Comments: Stormwater outfalls renamed per DEP naming conventions.

Outfall	Drainage Area	BMPs
002 (S001)	21,780 SF	Sediment basins, discharge into buffer zones prior to entering Little Mahanoy Creek
003 (S002)	9,100 SF	See above
004 (S003)	12,800 SF	See above

Whole Effluent Toxicity (WET)

For Outfall 001 **X** **Chronic** WET Testing was completed:

X For the permit renewal application (4 tests).

The dilution series used for the tests was: 100%, 95%, 90%, 45%, and 23%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 90%.

Summary of Four Most Recent Test Results

NOEC/LC50 Data Analysis

	***Ceriodaphnia* Results (% Effluent)**			***Pimephales* Results (% Effluent)**			
Test Date	**NOEC Survival**	**NOEC Reproduction**	**LC50**	**NOEC Survival**	**NOEC Growth**	**LC50**	**Pass? ***
11/7/2016	100	100	>100	100	100	>100	PASS
8/28/2017	100	100	>100	100	100	>100	PASS
10/28/2019	100	100	>100	100	100	>100	PASS
8/10/2020	100	100	>100	100	100	>100	PASS

***** *A "passing" result is that which is greater than or equal to the TIWC value.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

X **NO**

Comments: DEP Biologist confirmed 2016 – 2019 WET Tests passed.

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

Acute Partial Mix Factor (PMFa): **1** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

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

[(1.4 MGD x 1.547) / ((0.144 cfs x 1) + (1.4 MGD x 1.547))] x 100 = **IWCa% = 93.76%**

Is IWCa < 1%? X **NO**

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

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

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

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

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

[(1.4 MGD x 1.547) / ((0.144 cfs x 1) + (1.4 MGD x 1.547))] x 100 = **TIWCc%= 93.76% (rounded to 94%)**

3. Determine Dilution Series

Dilution Series = 100%, 97%, 94%, 47%, and 24%.

WET Limits

Has reasonable potential been determined? **X** NO

Will WET limits be established in the permit? **X** NO

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

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

Communications Log:
10/2/2017: Application received.
10/17/2017: Incompleteness Letter issued
10/31/2017: Application update (complete)
4/16/2020: Technical Deficiency Letter
4/22/2020: FAMA confirmation of receipt of electronic copy of technical deficiency letter.
6/11/2020: FAMA (Entech) E-mail asking for time extension.
6/12/2020: DEP (Berger) E-mail granting extension for response to Technical Deficiency Letter
9/30/2020: Response to Technical Deficiency Letter received.