pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0083933**
Facility Type	**Municipal**	APS ID	**31155**
Major / Minor	**Minor**	Authorization ID	**1308156**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Georgetown Area Sewer Authority**	Facility Name	**Georgetown Area Sewer Authority WWTP**
Applicant Address	46 Quarry Road	Facility Address	46 Quarry Road
	Quarryville, PA 17566		Quarryville, PA 17566
Applicant Contact	Brian Norris	Facility Contact	Brian Norris
Applicant Phone	(610) 633-8009	Facility Phone	(610) 633-8009
Client ID	63948	Site ID	246999
Ch 94 Load Status	Not Overloaded	Municipality	Bart Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	March 2, 2020	EPA Waived?	Yes
Date Application Accepted	March 10, 2020	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Georgetown Area Sewer Authority (GASA) has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued August 18, 2015 and became effective on September 1, 2015, authorizing discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in Bart Township, Lancaster County into Nickel Mines Run. The existing permit expiration date was August 31, 2020, and the permit has been administratively extended since that time.

Per the previous fact sheet, the existing WWTP was designed to accommodate flows of 40,000 gallons per day (gpd) from the Village of Georgetown (a total of 120 EDUs with a reserve of 32 EDUs). The site layout was designed to allow for an additional 40,000 gpd of capacity to be constructed.

Changes in this renewal: E. Coli monitoring has been added.

Sludge use and disposal description and location(s): Hauled offsite.

Supplemental information for this report is provided at the end of the fact sheet.

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-

Approve	Deny	Signatures	Date
X		*Benjamin R. Lockwood* Benjamin R. Lockwood / Environmental Engineering Specialist	May 6, 2021
X		*Maria D. Bebenek for Daniel W. Martin* Daniel W. Martin, P.E. / Environmental Engineer Manager	May 12, 2021
X		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Program Manager	May 12, 2021

Summary of Review
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)	.04
Latitude	39º 56' 10"	Longitude	76º 4' 36"
Quad Name	Gap	Quad Code	1937
Wastewater Description:	Sewage Effluent		
Receiving Waters	Nickel Mines Run (HQ-CWF, MF)	Stream Code	07066
NHD Com ID	57466725	RMI	2.1
Drainage Area	3.35 mi^2	Yield (cfs/mi^2)	0.0316
Q_{7-10} Flow (cfs)	0.106	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	605	Slope (ft/ft)	
Watershed No.	7-K	Chapter 93 Class.	HQ-CWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients, Siltation		
Source(s) of Impairment	Agriculture, Agriculture		
TMDL Status	Tentative	Name	Octoraro Creek Watershed TMDL
Nearest Downstream Public Water Supply Intake	Coatesville Authority		
PWS Waters	West Branch Octoraro Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	9.0

Changes Since Last Permit Issuance: None

Other Comments: USGS PA StreamStats provided a drainage area of 3.35 mi^2 and a Q_{7-10} of 0.106 cfs at the point of discharge.

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	Extended Aeration With Solids Removal	Ultraviolet	0.04
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.04	80	Not Overloaded	Aerobic Digestion	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The treatment process is as follows:

Influent Pump Station – Comminutor/Bar Screen – 4 Equalization Tank – 5 Extended Aeration Tanks – 2 Clarifiers – Tertiary Sand Filters – Ultraviolet (UV) Disinfection – Outfall 001 to Nickel Mines Run

2 sludge holding tanks are available for sludge storage. Aluminum Chloride Hydroxide Sulfate (Delpac 2020) is used for phosphorus removal.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet.
Summary of Inspections:	2/16/2016: A routine inspection was conducted. All treatment units were online. There were no issues at the WWTP, and the effluent was clear. Field measurements were collected and were within permitted limits. 3/11/2019: A routine inspection was conducted. It was noted that the comminutor was removed many years ago from the influent channel. The southern clarifier contents appeared clear with a small amount of pinfloc, and the effluent trough had algae accumulation. The northern clarifier skimmer was not functioning, and the contents were similar to the southern clarifier. Both filter cells had an accumulation of solids on the surface. Several holes in the metal walls of the filter were observed. The effluent appeared clear. Field measurements were collected and were within permitted limits. It was recommended to repair or install a new UV light percent transmittance meter, and to remove solids accumulation from the charcoal media sand filters. 4/28/2020: An administrative inspection was conducted. All treatment units were online, and there were no outstanding issues reported. The WWTP had not entered “storm mode” or experienced any bypasses.

Other Comments: There are currently no open violations associated with the permittee or facility.

Compliance History

DMR Data for Outfall 001 (from February 1, 2020 to January 31, 2021)

Parameter	JAN-21	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20
Flow (MGD) Average Monthly	0.012610	0.014081	0.014157	0.01590	0.01588	0.017071	0.016219	0.016260	0.015123	0.014773	0.016123	0.015207
Flow (MGD) Daily Maximum	0.01540	0.02770	0.01840	0.02240	0.02400	0.03650	0.02060	0.01980	0.02260	0.01850	0.02470	0.02020
pH (S.U.) Minimum	6.79	6.76	6.80	6.80	6.79	6.83	6.79	6.69	6.7	6.70	6.69	6.70
pH (S.U.) Instantaneous Maximum	7.17	7.96	7.28	7.39	7.27	7.95	7.89	7.15	7.1	7.07	7.12	7.14
DO (mg/L) Minimum	5.8	5.8	5.9	5.9	5.8	5.8	5.8	5.1	5.8	5.8	5.8	5.7
CBOD5 (lbs/day) Average Monthly	< 0.234	< 0.354	< 0.21	< 0.329	< 0.279	< 0.289	< 0.387	< 0.279	< 0.279	< 0.259	< 0.481	< 0.264
CBOD5 (lbs/day) Weekly Average	< 0.257	< 0.462	< 0.252	< 0.374	< 0.29	< 0.294	0.484	< 0.329	< 0.302	< 0.282	0.7	< 0.275
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 2	< 2	< 2	< 2	< 2.85	< 2	< 2	< 2	< 2.7	< 2
CBOD5 (mg/L) Weekly Average	< 2	< 2	< 2	< 2	< 2	< 2	3.7	< 2	< 2	< 2	3.4	< 2
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	28.7	49.4	24.8	40.5	51.4	31.4	40.7	29.8	46.0	67.2	32.8	32.5
BOD5 (lbs/day) Raw Sewage Influent Daily Maximum	32.1	55.9	32	43.7	65.9	32.7	43.5	34.5	50.0	72.6	47.8	39.5
BOD5 (mg/L) Raw Sewage Influent Average Monthly	251	295	232	248	365	218	295	215	329	526	184	244
TSS (lbs/day) Average Monthly	< 0.17	2.14	0.5	0.31	0.79	0.065	0.47	0.47	0.59	0.41	< 0.17	< 0.26
TSS (lbs/day) Raw Sewage Influent Average Monthly	23.8	40.8	24.5	39.9	33.8	30.0	35.2	20.8	30.9	31.4	22.1	26.3

TSS (lbs/day) Raw Sewage Influent Daily Maximum	29.8	55.0	32.4	50.8	42.1	31.2	37.1	35.5	35.7	32.0	28.8	27.9
TSS (lbs/day) Weekly Average	0.21	4.16	0.76	0.43	1.45	0.085	0.79	0.49	1.06	0.70	< 0.21	0.38
TSS (mg/L) Average Monthly	< 1.5	9.5	5.5	2	5.5	4.5	3.5	3.5	4	3	< 1	< 2
TSS (mg/L) Raw Sewage Influent Average Monthly	211	227	227	238	240	208	257	135	226	244	129	200
TSS (mg/L) Weekly Average	2	18	9	3	10	6	6	4	7	5	< 1	3
Fecal Coliform (CFU/100 ml) Geometric Mean	7.7	33.1	< 2	4.9	< 2	< 2	< 2.4	< 4.5	110.8	20.7	7.4	< 2
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	20	73	< 2	8	< 2	< 2	3	10	945	43	11	< 2
UV Transmittance (%) Minimum	00	00	00	00	00	0.0	2	00	00	00	00	0.0
Nitrate-Nitrite (lbs/day) Average Monthly	5.948	11.204	7.153	3.665	6.002	4.792	5.552	3.039	5.063	4.242	5.827	5.10
Nitrate-Nitrite (mg/L) Average Monthly	56.6	48.5	56.8	25.7	44.7	33.8	42.4	26.6	36.9	30.1	44.5	38.5
Total Nitrogen (lbs/day) Average Monthly	6.024	11.572	7.332	< 3.736	< 6.069	4.937	5.632	< 3.096	5.212	4.382	5.984	5.218
Total Nitrogen (mg/L) Average Monthly	57.33	50.09	58.22	< 26.2	< 45.2	34.82	43.01	< 27.1	37.94	31.09	45.7	39.4
Total Nitrogen (lbs) Total Monthly	186.76	358.72	219.96	< 115.83	< 182.08	153.04	174.58	< 92.89	161.58	131.46	185.5	151.32
Ammonia (lbs/day) Average Monthly	< 0.012	< 0.018	< 0.011	< 0.016	< 0.014	< 0.014	< 0.014	0.022	< 0.014	< 0.013	< 0.017	< 0.013
Ammonia (mg/L) Average Monthly	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.15	< 0.01	< 0.1	< 0.1	< 0.1
TKN (lbs/day) Average Monthly	0.077	0.367	0.179	< 0.071	< 0.067	0.145	0.08	< 0.057	0.299	0.14	0.157	0.236
TKN (mg/L) Average Monthly	0.73	1.59	1.42	< 0.5	< 0.5	1.02	0.61	< 0.5	1.09	0.99	1.2	0.9
Total Phosphorus (lbs/day) Average Monthly	0.027	0.078	0.075	0.098	0.081	0.075	0.055	0.087	0.093	0.111	0.037	0.044

Total Phosphorus (mg/L) Average Monthly	0.24	0.395	0.65	0.575	0.58	0.52	0.395	0.595	0.645	0.81	0.215	0.34
Total Phosphorus (lbs) Total Monthly	0.84	2.43	2.24	3.04	2.42	2.31	1.7	2.62	2.89	3.34	1.15	1.28

Existing Effluent Limitations and Monitoring Requirements

The table below summarizes the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
CBOD5 Nov 1 - Apr 30	6.7	10 Wkly Avg	XXX	20	30	40	2/month	8-Hr Composite
CBOD5 May 1 - Oct 31	3.3	5.0 Wkly Avg	XXX	10	15	20	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	10	15 Wkly Avg	XXX	30	45	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite
Total Phosphorus	0.67	Report Total mo	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report	Report Total Mo	XXX	Report	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .04
Latitude 39º 56' 10" **Longitude** 76º 4' 36"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 3.57 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality.

The flow data used to run the model was acquired from USGS PA StreamStats, and is included as an attachment. Stream pH and temperature inputs for this model run were based on data acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network (WQN) Station ID 273 from October 2004 to June 2019 for pH and October 2004 to October 2017 for Temperature. DEP's Standard Operating Procedure (SOP) No. BPNPSM-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends using the 90th percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90th percentile analysis was performed on the data and resulted in a Stream pH of 8.4 and a Stream Temperature of 24°C. Using these values resulted in a $CBOD_5$ limit of 25 mg/l and a NH_3-N limit of 3.5 mg/l, rounded in accordance with DEP's Technical Guidance No. 362-0400-001. The existing permit contains a $CBOD_5$ summertime limit of 10 mg/l, a wintertime limit of 20 mg/l, and a NH_3-N limit of 3.0 mg/l, which are all more stringent. These more stringent limits will remain in the permit.

There are no industrial/commercial users contributing industrial wastewater to the system and Georgetown Area Sewer Authority does not currently have an EPA-approved pretreatment program. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

Best Professional Judgement (BPJ) Limitations

Dissolved Oxygen
A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit. This limit will remain in the permit to ensure that the facility will achieve compliance with DEP water quality standards.

Total Phosphorus
For Total Phosphorus (TP), the current NPDES permit requires the permittee to comply with average monthly and IMAX limits of 2.0 mg/l and 4.0 mg/l, respectively. DEP's Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams (Guidance No. 391-2000-018) was used previously during a past permit renewal to evaluate if phosphorus limitations were necessary. According to the guidance, phosphorus limits would be needed if the contributions from this facility exceeded 0.25% of the total phosphorus load of all discharges in the Lower Susquehanna River Basin. It was determined by DEP that this facility meets the criteria, and the limit has been continuously imposed in the permit. Therefore, a TP limit of 2.0 mg/l will remain in the permit.

Additional Considerations

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow. For new Phase 4 and 5 sewage dischargers, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

This facility is considered a Phase 5 non-significant discharger with a design flow less than 0.2 MGD but greater than 0.002 MGD. According to DEP's latest-revised Phase 3 Supplement, issuance of permits with monitoring and reporting for TN and TP is recommended for any Phase 5 non-significant sewage facilities (i.e., facilities with average annual design flows on August 29, 2005 less than 0.2 MGD but greater than 0.002 MGD). Furthermore, DEP's SOP No. BCW-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. Therefore, TN and TP monitoring will be included in the renewed permit, which is consistent with the existing permit.

Octoraro Creek Watershed TMDL

This facility discharges to Nickel Mines Run, a tributary of Octoraro Creek, which is impaired for nutrients and siltation due to agriculture.

Per the previous fact sheet, DEP proposed a TMDL in 2013 to address the impairments identified in waterbodies located within the Octoraro Creek watershed. The 2014 Pennsylvania Integrated Water Quality Monitoring and Assessment Report lists this stream in Category 5, impaired streams requiring a TMDL. This report indicated that the TMDL was expected to be developed in 2015 to address the impairments. DEP and the Susquehanna River Basin Commission (SRBC) held a public meeting on June 18th 2013 to discuss and accept public comments on the proposed TMDL document. The proposed TMDL document includes the following statement:

"The Georgetown Area Sewer Authority discharges treated sewage effluent into the Nickel Mines Run/Meetinghouse Creek Watershed covered by this TMDL, permit number PA0083933. The instantaneous maximums for suspended solids is 30.0 mg/l and 0.3775 mg/l for phosphorus, which was included in the AVGWLF modeling runs for determining existing conditions.

*The design flow for the Georgetown Area Sewer Authority is 0.04 mgd. Based on the instantaneous maximums for this facility, the potential for sediment and phosphorus loads if the Georgetown Area Sewer Authority capacities were fully utilized is **10.0140 lbs/day** and **0.1260 lbs/day**, respectively. This loading rate based on the design capacities of the plant is used in the final TMDL allocations (WLA)."*

Also, the TMDL has the following proposed WLA for nitrate assigned to GASA:

Table D2. Nitrate Waste Load Allocations for NIMR 1.5			
Facility Name	Monthly Avg. Allowable Con. (mg/L)	Average Flow (MGD)	Allowable Load (lbs/day)
Georgetown Area Sewer Authority	**12.01**	**0.04**	**4.01**
Bulk Reserve			1.73
Total			5.74

During the previous renewal development, DEP's TMDL Development Section was consulted to discuss the proposed TMDL. Based on the discussions documented in the previous renewal fact sheet, these WLAs are not the final values and will most likely change due to the continued development of the TMDL and addition of other point sources within the watershed. At the time of this renewal, the Octoraro TMDL is still not final. Therefore, these values will not be included in the draft permit, which is consistent with how the proposed TMDL was handled previously. A re-opener clause will remain in the NPDES permit to allow DEP to modify the permit to include the WLAs once the TMDL is finalized.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. These limits are included in the existing permit, and will remain in the permit.

E. Coli

PA Code § 92a.61 requires IMAX reporting of E. Coli. Per DEP's SOP No. BCW-PMT-033, sewage dischargers with a design flow of 0.002 – 0.005 mgd will include E. Coli monitoring with a frequency of 1/year. This parameter has been added to the renewal permit.

UV Monitoring

DEP's SOP No. BPNPSM-PMT-033 recommends at a minimum, routine monitoring of UV transmittance, dosage, or intensity when the facility is utilizing a UV disinfection system. The monitoring should occur at the same frequency as would be used for TRC. This recommendation was implemented as a part of the proper operation and maintenance requirement specified in Part B of the NPDES permit, requesting permittees to demonstrate the effectiveness of UV disinfection system. This approach has been assigned to other facilities equipped with similar technology. The existing permit has a monitoring requirement for UV transmittance, which will remain in the permit.

Sampling Frequency & Sample Type

The monitoring requirements were established based on the BPJ and/or Table 6-3 of DEP's technical guidance No. 362-0400-001.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.27 and 92a.61.

Influent BOD_5 and Total Suspended Solids (TSS) Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS will be included in the permit. An 8-hr composite sample type will be required to be consistent with the proposed sampling frequency for effluent TSS and $CBOD_5$.

Mass Loading Limitation

All mass loading effluent limitations recommended in the draft permit are concentration-based, calculated using a formula: design flow (MGD) x concentration limit (mg/l) x conversion factor of 8.34.

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. The receiving stream, Nickel Mines Run, is a High Quality Waters. Per the previous fact sheet, a social or economic justification (SEJ) was approved by DEP Central Office on 11/10/2008. The proposed effluent limits are also consistent with the Anti-degradation Best Available Combination of Technologies (ABACT) requirements specified in DEP's current Water Quality Anti-degradation Implementation Guidance (ID: 391-0300-002).

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an aquatic life impairment due to nutrients and siltation from agriculture.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions addressed by DEP in this fact sheet.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
CBOD5 Nov 1 - Apr 30	6.7	10	XXX	20	30	40	2/month	8-Hr Composite
CBOD5 May 1 - Oct 31	3.3	5.0	XXX	10	15	20	2/month	8-Hr Composite
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
TSS	10	15	XXX	30	45	60	2/month	8-Hr Composite
TSS Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Ammonia Nov 1 - Apr 30	3.0	XXX	XXX	9.0	XXX	18	2/month	8-Hr Composite
Ammonia May 1 - Oct 31	1.0	XXX	XXX	3.0	XXX	6.0	2/month	8-Hr Composite

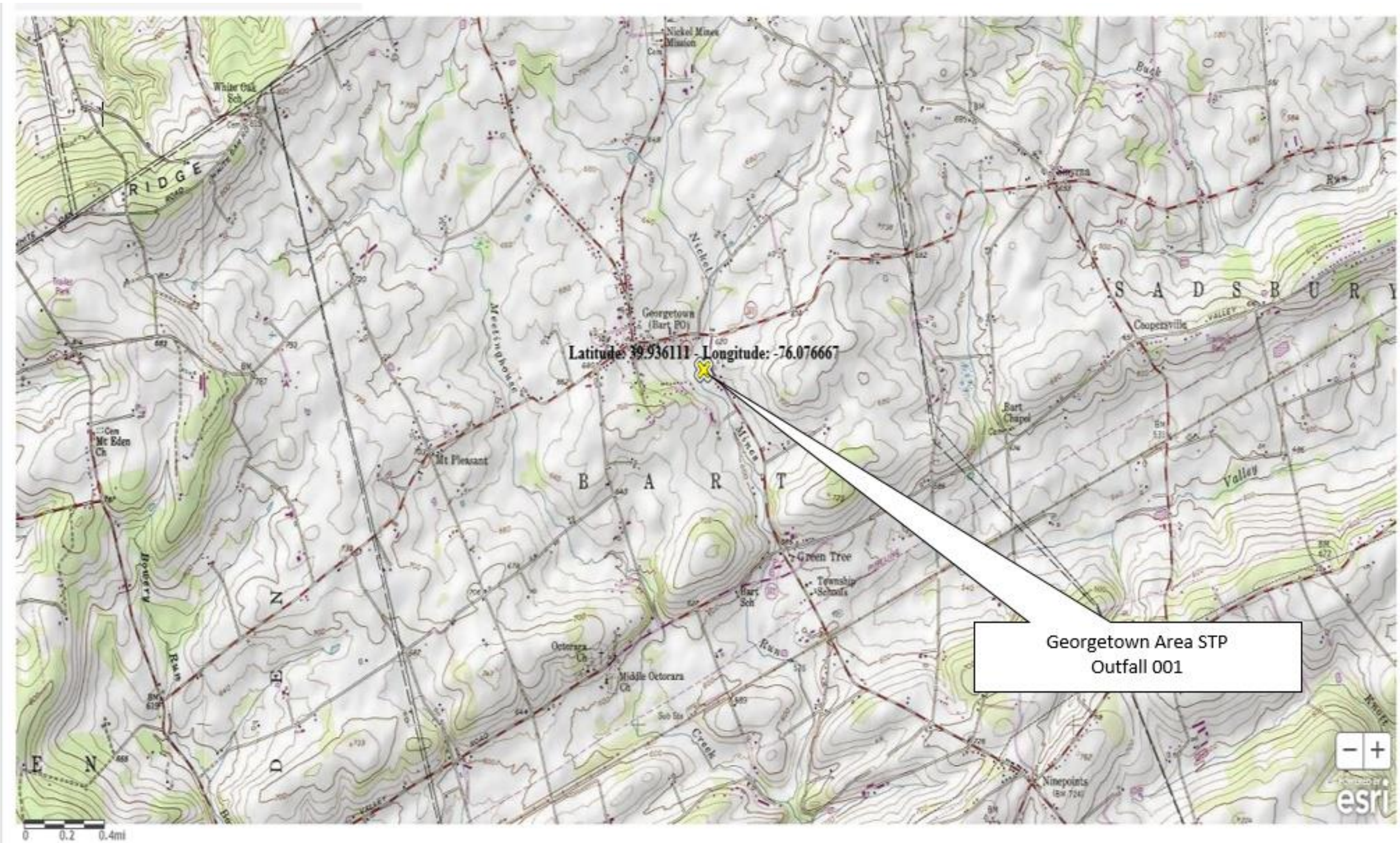
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Instantaneous Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Total Phosphorus	0.67	Report Total Mo	XXX	2.0	XXX	4.0	2/month	8-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite	Report	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report	Report Total Mo	XXX	Report	XXX	XXX	1/month	Calculation

Compliance Sampling Location: Outfall 001

Other Comments: None

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☐	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☐	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP: SOP No. BCW-PMT-033
☐	Other:



Enter report title:

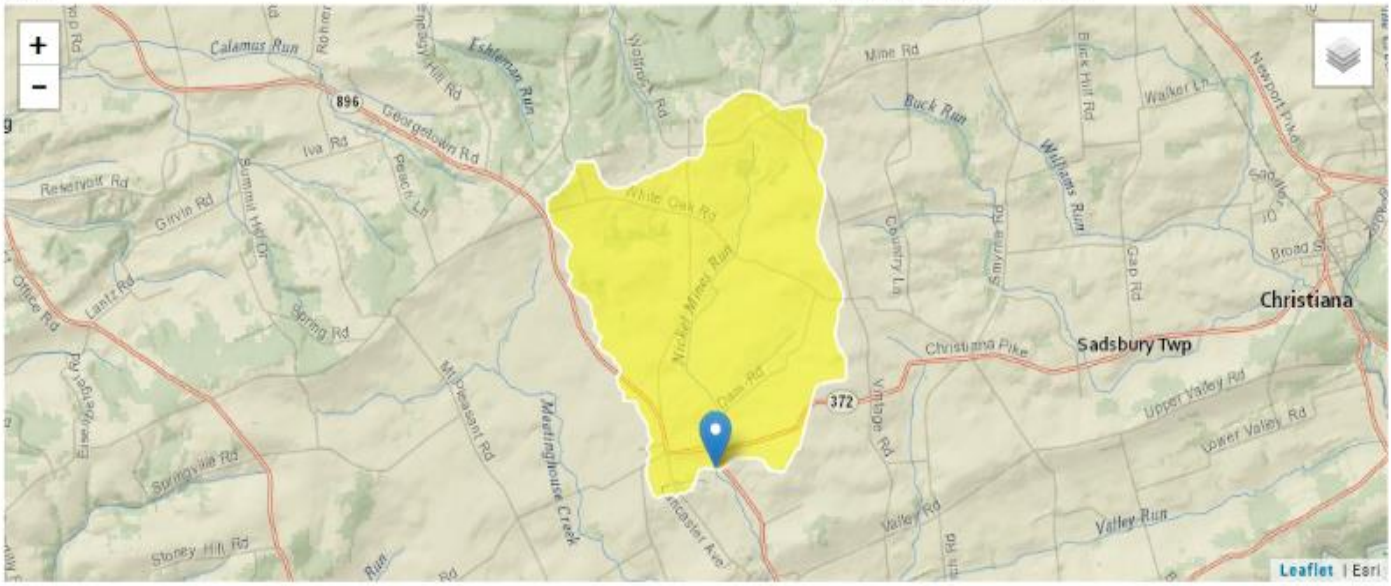
Georgetown Area Sewer Authority PA0083933 Outfall 001

Enter comments:

Some comments here

Georgetown Area Sewer Authority PA0083933 Outfall 001

Region ID:	PA
Workspace ID:	PA20210331201702940000
Clicked Point (Latitude, Longitude):	39.93608, -76.07697
Time:	2021-03-31 16:17:19 -0400



Permit No. PA0083933

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.35	square miles
BSLOPD	Mean basin slope measured in degrees	2.065	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.6676	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.35	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.065	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.6676	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.303	ft^3/s
30 Day 2 Year Low Flow	0.46	ft^3/s
7 Day 10 Year Low Flow	0.106	ft^3/s
30 Day 10 Year Low Flow	0.168	ft^3/s
90 Day 10 Year Low Flow	0.379	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.5.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.0

Permit No. PA0083933

Enter report title:

Georgetown Area Sewer Authority PA0083933 Downstream Point RMI = 0.0

Enter comments:

Some comments here

Georgetown Area Sewer Authority PA0083933 Downstream Point RMI = 0.0

Region ID:	PA
Workspace ID:	PA20210331202609428000
Clicked Point (Latitude, Longitude):	39.91260, -76.06843
Time:	2021-03-31 16:26:26 -0400

Permit No. PA0083933

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.59	square miles
BSLOPD	Mean basin slope measured in degrees	2.554	degrees
ROCKDEP	Depth to rock	5	feet
URBAN	Percentage of basin with urban development	1.2235	percent

Low-Flow Statistics Parameters [Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.59	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.554	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5	feet	4.13	5.21
URBAN	Percent Urban	1.2235	percent	0	89

Low-Flow Statistics Disclaimers [Low Flow Region 1]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report [Low Flow Region 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.541	ft^3/s
30 Day 2 Year Low Flow	0.78	ft^3/s
7 Day 10 Year Low Flow	0.206	ft^3/s
30 Day 10 Year Low Flow	0.308	ft^3/s
90 Day 10 Year Low Flow	0.625	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p.

Application Version: 4.5.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.0

Permit No. PA0083933

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07K	7066	NICKEL MINES RUN	2.100	605.00	3.35	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.11	0.000	0.000	0.0	0.00	0.00	20.00	7.00	24.00	8.40
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Georgetown Area	PA0083933	0.0400	0.0400	0.0400	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0083933

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
07K	7066	NICKEL MINES RUN	0.000	550.00	4.59	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.21	0.000	0.000	0.0	0.00	0.00	20.00	7.00	24.00	8.40
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0083933

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07K	7066	NICKEL MINES RUN

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
2.100	0.11	0.00	0.11	.0619	0.00496	.386	7.35	19.05	0.06	2.166	24.37	7.40
Q1-10 Flow												
2.100	0.07	0.00	0.07	.0619	0.00496	NA	NA	NA	0.05	2.503	24.48	7.30
Q30-10 Flow												
2.100	0.14	0.00	0.14	.0619	0.00496	NA	NA	NA	0.07	1.932	24.30	7.48

Permit No. PA0083933

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	6		

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Permit No. PA0083933

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07K	7066	NICKEL MINES RUN

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.100	Georgetown Area	8.37	17.54	8.37	17.54	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
2.100	Georgetown Area	1.07	3.57	1.07	3.57	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
2.10	Georgetown Area	25	25	3.57	3.57	5	5	0	0

Permit No. PA0083933

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07K	7066	NICKEL MINES RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
2.100	0.040	24.369	7.405
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.348	0.386	19.052	0.059
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
10.48	0.625	1.31	0.980
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.048	21.115	Owens	6
Reach Travel Time (days)			
2.166			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.217	8.88	1.06	7.62
0.433	7.52	0.86	7.62
0.650	6.38	0.70	7.62
0.867	5.40	0.56	7.62
1.083	4.58	0.45	7.62
1.300	3.88	0.37	7.62
1.516	3.29	0.30	7.62
1.733	2.79	0.24	7.62
1.950	2.36	0.19	7.62
2.166	2.00	0.16	7.62

Permit No. PA0083933

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07K	7066	NICKEL MINES RUN

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
2.100	Georgetown Area	PA0083933	0.040	CBOD5	25		
				NH3-N	3.57	7.14	
				Dissolved Oxygen			5