pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Amendment, Major**	Application No.	**PA0028428 A-1**
Facility Type	**Municipal**	APS ID	**1027562**
Major / Minor	**Major**	Authorization ID	**1334607**

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Brockway Area Sewer Authority**	Facility Name	**Brockway Area WWTP**
Applicant Address	501 Main Street	Facility Address	70 Industrial Park Drive
	Brockway, PA 15824		Brockway, PA 15824
Applicant Contact	Laurie Wayne, Manager	Facility Contact	Rick Boleen, Operator
Applicant Phone	(814) 268-6565	Facility Phone	(814) 265-0830
Client ID	202231	Site ID	263008
Ch 94 Load Status	Not Overloaded	Municipality	Brockway Borough
Connection Status	No Limitations	County	Jefferson County
Date Application Received	November 18, 2020	EPA Waived?	No
Date Application Accepted	November 25, 2020	If No, Reason	Major Facility
Purpose of Application	Amendment of an NPDES Permit for an existing discharge of treated sanitary wastewater from a municipal sewer system. The amendment removes the limits and monitoring related to the acceptance of natural gas-related wastewater, which has been eliminated.		

Summary of Review

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

I. OTHER REQUIREMENTS:

A. Stormwater into Sewers
B. Right of Way
C. Solids Handling
D. High Flow Management Plan (HFMP)
E. Hauled in waste restrictions

SPECIAL CONDITIONS:

II. Solids Management
III. Whole Effluent Toxicity (WET)

There are no open violations in efacts associated with the subject Client ID (202231) as of 6/10/2021.

Approve	Return	Deny	Signatures	Date
X			Stephen A. McCauley Stephen A. McCauley, E.I.T. / Environmental Engineering Specialist	6/10/2021
X			Justin C. Dickey Justin C. Dickey, P.E. / Environmental Engineer Manager	6/10/2021

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	1.5
Latitude	41º 15' 13.00"	Longitude	-78º 47' 50.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		

Receiving Waters	Little Toby Creek (CWF)	Stream Code	49666
NHD Com ID	134396185	RMI	10.62
Drainage Area	90.2	Yield (cfs/mi^2)	0.102
Q_{7-10} Flow (cfs)	9.2	Q_{7-10} Basis	calculated
Elevation (ft)	1430	Slope (ft/ft)	0.00209
Watershed No.	17-A	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired*		
Cause(s) of Impairment	Metals, pH, Total Suspended Solids (TSS)		
Source(s) of Impairment	Acid Mine Drainage		
TMDL Status	Final (6/9/2009)	Name	Little Toby Creek

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

Nearest Downstream Public Water Supply Intake	Pennsylvania American Water Company - Clarion		
PWS Waters	Clarion River	Flow at Intake (cfs)	90.7
PWS RMI	33.3	Distance from Outfall (mi)	66

* - The receiving stream is impaired, and there is a TMDL for Aluminum, Iron, Manganese, pH, and Total Suspended Solids in the Little Toby Creek Watershed. The Brockway Area WWTP discharge concentrations for Total Aluminum, Total Iron, and Total Manganese were modeled previously and were found to be significantly lower than the water quality criteria standards. No sampling or monitoring was added to this NPDES Permit in the past, and none will be added with this amendment.

Sludge use and disposal description and location(s): Sludge is disposed of at an approved landfill.

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.

Narrative: This Fact Sheet details the determination of draft NPDES permit limits for an amendment to an existing discharge of 1.5 MGD of treated sewage from a Municipal STP in Brockway Borough, Jefferson County.

Treatment permitted under Water Quality Management Permit no. 3303403 consists of the following: An influent pump station, screening, a manual bypass bar screen, two aerated stormwater storage basins with a total capacity of 325,000 gallons, two 750,000 gallon oxidation ditches, two 239,848 gallon spiroflo final clarifiers, ultraviolet light disinfection, post aeration, an aerobic digester and a belt filter press.

1. Streamflow:

West Branch Clarion River at Wilcox, PA - USGS gage 03028000 (1955-2008):

Q_{7-10}:	6.6	cfs	(USGS StreamStats)
Drainage Area:	63	sq. mi.	(USGS StreamStats)
Yieldrate:	0.102	cfsm	calculated

Little Toby Creek at Outfall 001:

Yieldrate:	0.102	cfsm	calculated above
Drainage Area:	90.2	sq. mi.	(USGS StreamStats)
Q_{7-10}:	9.2	cfs	calculated

% of stream allocated: 100% Basis: No nearby discharges

2. Wasteflow:

Maximum discharge: 1.5 MGD = 2.3 cfs

Runoff flow period: 24 hours Basis: Runoff flow for a municipal STP

There is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow). Therefore, the standards in DEP guidance (391-2000-014) will not be applied.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

3. Reasonable Potential Analysis for Receiving Stream:

A Reasonable Potential Analysis was performed in accordance with State practices for Outfall 001 by the Department's Toxics Management Spreadsheet (see Attachment 1). Based on the spreadsheet, none of the parameters that are proposed to be removed with this amendment will require monitoring or limits.

4. Reasonable Potential for Downstream Public Water Supply (PWS):

The Reasonable Potential Analysis performed above does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, and Bromide). However, since the sample data was provided in eDMR, mass-balance calculations were performed (see below).

Nearest Downstream potable water supply (PWS): Pennsylvania American Water Company - Clarion
Distance downstream from the point of discharge: 66 miles (approximate)

PWS Evaluation:

Stream flow (sf) at the potable water supply intake = 90.7 cfs
Waste flow (wf) from the STP = 1.5 MGD = 2.3 cfs

Total flow = 93 cfs
Background Concentrations: No data available (assumed zero)

Mass balance for TDS at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(90.7 cfs)(0 mg/l) + (2.3 cfs)(x) = (93 cfs)(500 mg/l)

x = 20,217 mg/l (maximum from eDMR was 387 mg/l - ok)

Mass balance for Chlorides at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(90.7 cfs)(0 mg/l) + (2.3 cfs)(x) = (93 cfs)(250 mg/l)

x = 10,108 mg/l (maximum from eDMR was 182 mg/l - ok)

Mass balance for Bromide at the potable water supply intake:
(sf @ PWS)(bkrd. conc.) + (wf)(x) = (tot. flow)(criteria)
(90.7 cfs)(0 mg/l) + (2.3 cfs)(x) = (93 cfs)(1 mg/l)

x = 40.4 mg/l (maximum from eDMR was 0.46 mg/l - ok)

☒ No limits necessary
☐ Limits needed

Basis: Significant dilution available. The previous limits/monitoring for TDS, Bromide, and Chloride will be removed with this amendment since the limits/monitoring were based on the acceptance of natural gas-related wastewater, which has been eliminated.

5. Anti-Backsliding:

The Brockway WWTP was authorized on 4/17/2007 through an NPDES Permit Amendment to accept up to 14,000 gallons per day (gpd) of natural gas-related wastewater. The facility was classified as an “Authorized Load / No Increase” under the treatment requirements of Chapter 95.10. Wastewater from the Dannic Energy Corporation started in November 2008.

Water quality-based limits for TDS were set based on Chapter 95.10 using the maximum values that were previously authorized to be discharged under NPDES Permit PA0028428, prior to the passage of Chapter 95.10 on August 21, 2010. Also, based on Chapter 95.10 and the DEP guidance document, monitoring was included for the following pollutants of concern: Chloride, Bromide, Total Barium, Total Strontium, Radium 226/228 (combined), Gross Alpha, and Total Uranium due to the acceptance of natural gas-related wastewater.

The discharge of wastewater from the Dannic Energy Corporation ended on January 31, 2020.

Based on 40 CFR §122.44(l)(i)(A), this permit can be amended to contain less stringent effluent limitations. Due to the Brockway Area WWTP no longer accepting natural gas-related wastewater, the TDS limits and the monitoring for Chloride, Bromide, Total Barium, Total Strontium, Radium 226/228 (combined), Gross Alpha, and Total Uranium were removed.

6. Attachment List:

Attachment 1 - Toxics Management Spreadsheet

(The Attachments above can be found at the end of this document)

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	0.538	0.309	0.408	0.386	0.326	0.324	0.306	0.342	0.478	0.442	0.595	0.59
Flow (MGD) Daily Maximum	0.819	0.379	0.634	0.535	0.608	0.399	0.349	0.361	0.676	0.532	0.669	0.927
pH (S.U.) Minimum	6.43	6.4	6.39	6.54	6.9	7.04	7.13	7.01	6.85	6.64	6.56	6.37
pH (S.U.) Maximum	6.87	6.87	6.95	7.22	7.41	7.58	7.55	7.53	7.67	7.24	6.89	6.79
DO (mg/L) Instantaneous Minimum	4.61	5.31	5.54	4.52	5.76	5.79	4.24	5.83	4.49	5.56	4.78	5.02
CBOD5 (lbs/day) Average Monthly	< 12	8	9	< 7	< 6	< 5	< 6	< 7	< 12	< 9	< 11	< 12
CBOD5 (lbs/day) Weekly Average	14	10	15	11	< 7	8	< 7	< 8	22	10	17	< 15
CBOD5 (mg/L) Average Monthly	< 3.1	6.89	2.9	< 2.4	< 2.0	< 2.1	< 2.1	< 2.5	< 2.8	< 2.6	< 2.60	< 2.4
CBOD5 (mg/L) Weekly Average	4.0	7.16	4.0	3.0	< 2.0	2.5	2.5	< 3.0	3.5	3.0	3.50	3.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	492	568	497	486	545	557	495	522	679	518	508	571
BOD5 (mg/L) Raw Sewage Influent Average Monthly	125	223	166	184	206	221	184	189	164	148	116	115
TSS (lbs/day) Average Monthly	< 22	< 9	< 11	< 10	< 9	< 8	< 16	< 14	< 25	< 21	< 18	< 32
TSS (lbs/day) Raw Sewage Influent Average Monthly	429	576	387	422	473	467	626	609	797	575	466	565
TSS (lbs/day) Weekly Average	36	13	< 17	15	< 11	< 9	< 26	< 20	< 76	< 27	< 31	< 45
TSS (mg/L) Average Monthly	< 6	< 4	< 4	< 4	< 3	< 3	< 5	< 5	< 4	< 6	< 4	< 6
TSS (mg/L) Raw Sewage Influent Average Monthly	109	219	126	166	175	186	238	218	175	163	104	114
TSS (mg/L) Weekly Average	11	4	4	< 5	4	< 3	< 8	< 7	< 8	< 7	< 7	< 8

Total Dissolved Solids (lbs/day) Average Monthly	1978	853	1390	663	702	724	766	843	1493	887	1015	1114
Total Dissolved Solids (lbs/day) Daily Maximum	3049	913	1944	699	718	725	913	897	2110	950	1064	1177
Total Dissolved Solids (mg/L) Average Monthly	364	387	335	300	299	300	293	282	263	241	268	252
Osmotic Pressure (mOs/kg) Average Monthly	11	8	9	5	4	8	4	4	4	5	6	5
Fecal Coliform (No./100 ml) Geometric Mean	< 4	< 1	< 3	< 2	< 7	4	< 6	< 9	168	< 10	< 10	< 10
Fecal Coliform (No./100 ml) Instantaneous Maximum	12	4	26	20	326	51	23	29	3360	< 10	< 10	< 10
UV Intensity (µw/cm²) Average Monthly	42.4	92.53	37.85	74.13	69.7	52.75	54.46	42.29	65.44	0.77	0.93	10.869
Total Nitrogen (mg/L) Average Monthly	4.31	3.77	4.59	7.09	4.97	2.84	1.62	1.85	1.97	1.77	2.05	2.83
Ammonia (lbs/day) Average Monthly	< 3	< 1	< 4	< 2	1	< 1	< 1	< 1	< 11	< 1	< 2	< 2
Ammonia (mg/L) Average Monthly	< 0.6	< 0.4	< 1.2	< 0.6	0.4	< 0.5	< 0.4	< 0.4	< 3.0	< 0.4	< 0.4	< 0.4
Total Phosphorus (mg/L) Average Monthly	1.45	2.72	2.1	2.86	4.3	7.14	325	3.71	3.58	1.88	1.61	1.29
Total Barium (mg/L) Average Monthly	0.07	0.05	0.14	0.07	0.065	0.079	0.08	0.08	0.1	0.11	0.12	0.15
Total Selenium (lbs/day) Average Monthly	< 0.04	< 0.02	< 0.03	< 0.02	< 0.02	0.02	< 0.02	< 0.04	< 0.05	< 0.03	< 0.03	< 0.04
Total Selenium (mg/L) Average Monthly	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	0.008	0.008	< 0.015	< 0.008	< 0.008	< 0.008	< 0.008
Total Strontium (mg/L) Average Quarterly	0.227			0.213			0.144			0.17		
Total Uranium (ug/L) Average Quarterly	0.262			0.029			0.262			0.262		
Chloride (mg/L) Average Quarterly	182			53.8			62.7			83.2		
Bromide (mg/L) Average Quarterly	0.46			0.13			0.21			< 0.1		
Gross Alpha (pCi/L) Average Quarterly	2.79			< 3			0.956			2.18		
Ra-226/228, Total (pCi/L) Average Quarterly	0.75			0.03716			0.929			0.92		

Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum				GG			GG			GG		
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum				GG			GG			FF		
Chronic WET - Pimephales Survival (TUc) Daily Maximum				GG			GG			GG		
Chronic WET - Pimephales Growth (TUc) Daily Maximum				GG			GG			FF		

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	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 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5	250	375	XXX	20.0	30.0	40	2/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
TSS	375	562	XXX	30.0	45.0	60	2/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/week	Grab
UV Intensity (µw/cm²)	XXX	XXX	XXX	Report	XXX	XXX	1/day	Measured
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	243	XXX	XXX	19.5	XXX	39	2/week	24-Hr Composite
Ammonia-Nitrogen May 1 - Oct 31	81	XXX	XXX	6.5	XXX	13	2/week	24-Hr Composite
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	24-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	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	5.0 Daily Max	XXX	XXX	1/quarter	See Permit
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	5.0 Daily Max	XXX	XXX	1/quarter	See Permit
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	5.0 Daily Max	XXX	XXX	1/quarter	See Permit
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	5.0 Daily Max	XXX	XXX	1/quarter	See Permit

Compliance Sampling Location: at Outfall 001, after ultraviolet (UV) light disinfection.

Flow is monitor only based on Chapter 92a.61. The limits for pH and Dissolved Oxygen are technology-based on Chapter 93.7. The limits for $CBOD_5$, Total Suspended Solids, and Fecal Coliforms are technology-based on Chapter 92a47. Monitoring for influent BOD5 and influent Total Suspended Solids is based on Chapter 92a.61. Monitoring for UV Intensity, Total Nitrogen, and Total Phosphorus is based on Chapter 92a.61. The limits for Ammonia-Nitrogen are water quality-based on Chapter 93.7. The WET limits are water quality-based on the WETT Analysis Spreadsheet.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Brockway Area WWTP** NPDES Permit No.: **PA0028428** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Municipal Sewage**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
1.5	571	6.9						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		387									
	Chloride (PWS)	mg/L		182									
	Bromide	mg/L		0.46									
	Sulfate (PWS)	mg/L											
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L											
	Total Antimony	µg/L											
	Total Arsenic	µg/L											
	Total Barium	µg/L		92.833									
	Total Beryllium	µg/L											
	Total Boron	µg/L											
	Total Cadmium	µg/L											
	Total Chromium (III)	µg/L											
	Hexavalent Chromium	µg/L											
	Total Cobalt	µg/L											
	Total Copper	µg/L											
	Free Cyanide	µg/L											
	Total Cyanide	µg/L											
	Dissolved Iron	µg/L											
	Total Iron	µg/L											
	Total Lead	µg/L											
	Total Manganese	µg/L											
	Total Mercury	µg/L											
	Total Nickel	µg/L											
	Total Phenols (Phenolics) (PWS)	µg/L											
	Total Selenium	µg/L		8									
	Total Silver	µg/L											
	Total Thallium	µg/L											
	Total Zinc	µg/L											
	Total Molybdenum	µg/L											
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L	<										

Group 3	Carbon Tetrachloride	µg/L	<										
	Chlorobenzene	µg/L											
	Chlorodibromomethane	µg/L	<										
	Chloroethane	µg/L	<										
	2-Chloroethyl Vinyl Ether	µg/L	<										
	Chloroform	µg/L	<										
	Dichlorobromomethane	µg/L	<										
	1,1-Dichloroethane	µg/L	<										
	1,2-Dichloroethane	µg/L	<										
	1,1-Dichloroethylene	µg/L	<										
	1,2-Dichloropropane	µg/L	<										
	1,3-Dichloropropylene	µg/L	<										
	1,4-Dioxane	µg/L	<										
	Ethylbenzene	µg/L	<										
	Methyl Bromide	µg/L	<										
	Methyl Chloride	µg/L	<										
	Methylene Chloride	µg/L	<										
	1,1,2,2-Tetrachloroethane	µg/L	<										
	Tetrachloroethylene	µg/L	<										
	Toluene	µg/L	<										
	1,2-trans-Dichloroethylene	µg/L	<										
	1,1,1-Trichloroethane	µg/L	<										
	1,1,2-Trichloroethane	µg/L	<										
	Trichloroethylene	µg/L	<										
	Vinyl Chloride	µg/L	<										
Group 4	2-Chlorophenol	µg/L	<										
	2,4-Dichlorophenol	µg/L	<										
	2,4-Dimethylphenol	µg/L	<										
	4,6-Dinitro-o-Cresol	µg/L	<										
	2,4-Dinitrophenol	µg/L	<										
	2-Nitrophenol	µg/L	<										
	4-Nitrophenol	µg/L	<										
	p-Chloro-m-Cresol	µg/L	<										
	Pentachlorophenol	µg/L	<										
	Phenol	µg/L	<										
	2,4,6-Trichlorophenol	µg/L	<										
Group 5	Acenaphthene	µg/L	<										
	Acenaphthylene	µg/L	<										
	Anthracene	µg/L	<										
	Benzidine	µg/L	<										
	Benzo(a)Anthracene	µg/L	<										
	Benzo(a)Pyrene	µg/L	<										
	3,4-Benzofluoranthene	µg/L	<										
	Benzo(ghi)Perylene	µg/L	<										
	Benzo(k)Fluoranthene	µg/L	<										
	Bis(2-Chloroethoxy)Methane	µg/L	<										
	Bis(2-Chloroethyl)Ether	µg/L	<										
	Bis(2-Chloroisopropyl)Ether	µg/L	<										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<										
	4-Bromophenyl Phenyl Ether	µg/L	<										
	Butyl Benzyl Phthalate	µg/L	<										
	2-Chloronaphthalene	µg/L	<										
	4-Chlorophenyl Phenyl Ether	µg/L	<										
	Chrysene	µg/L	<										
	Dibenzo(a,h)Anthrancene	µg/L	<										
	1,2-Dichlorobenzene	µg/L	<										
	1,3-Dichlorobenzene	µg/L	<										
	1,4-Dichlorobenzene	µg/L	<										
	3,3-Dichlorobenzidine	µg/L	<										
	Diethyl Phthalate	µg/L	<										
	Dimethyl Phthalate	µg/L	<										
	Di-n-Butyl Phthalate	µg/L	<										
	2,4-Dinitrotoluene	µg/L	<										

	2,6-Dinitrotoluene	µg/L	<										
	Di-n-Octyl Phthalate	µg/L	<										
	1,2-Diphenylhydrazine	µg/L	<										
	Fluoranthene	µg/L	<										
	Fluorene	µg/L	<										
	Hexachlorobenzene	µg/L	<										
	Hexachlorobutadiene	µg/L	<										
	Hexachlorocyclopentadiene	µg/L	<										
	Hexachloroethane	µg/L	<										
	Indeno(1,2,3-cd)Pyrene	µg/L	<										
	Isophorone	µg/L	<										
	Naphthalene	µg/L	<										
	Nitrobenzene	µg/L	<										
	n-Nitrosodimethylamine	µg/L	<										
	n-Nitrosodi-n-Propylamine	µg/L	<										
	n-Nitrosodiphenylamine	µg/L	<										
	Phenanthrene	µg/L	<										
	Pyrene	µg/L	<										
	1,2,4-Trichlorobenzene	µg/L	<										
Group 6	Aldrin	µg/L	<										
	alpha-BHC	µg/L	<										
	beta-BHC	µg/L	<										
	gamma-BHC	µg/L	<										
	delta BHC	µg/L	<										
	Chlordane	µg/L	<										
	4,4-DDT	µg/L	<										
	4,4-DDE	µg/L	<										
	4,4-DDD	µg/L	<										
	Dieldrin	µg/L	<										
	alpha-Endosulfan	µg/L	<										
	beta-Endosulfan	µg/L	<										
	Endosulfan Sulfate	µg/L	<										
	Endrin	µg/L	<										
	Endrin Aldehyde	µg/L	<										
	Heptachlor	µg/L	<										
	Heptachlor Epoxide	µg/L	<										
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<										
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L		2.79									
	Total Beta	pCi/L											
	Radium 226/228	pCi/L		0.929									
	Total Strontium	µg/L		227									
	Total Uranium	µg/L		0.262									
	Osmotic Pressure	mOs/kg		11									

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Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Brockway Area WWTP, NPDES Permit No. PA0028428, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Little Toby Creek**

No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	050229	10.62	1430	90.2			Yes
End of Reach 1	050229	0	1313	123.72			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	10.62	0.102										136	5.21		
End of Reach 1	0	0.102													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	10.62														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.3, March 2021

Model Results

Brockway Area WWTP, NPDES Permit No. PA0028428, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
10.62	9.20		9.20	2.321	0.002	0.782	51.683	66.131	0.285	2.275	73.984
0	12.62		12.61944								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
10.62	51.68		51.68	2.321	0.002	1.542	51.683	33.511	0.678	0.958	38.329
0	68.124		68.12								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.450 Analysis Hardness (mg/l): 292.18 Analysis pH: 5.40

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	21,000	21,000	58,490	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	50	50.0	139	

☑ ***CFC*** CCT (min): 73.984 PMF: 1 Analysis Hardness (mg/l): 223.62 Analysis pH: 5.31

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	

Total Barium	0	0		0	4,100	4,100	20,356	
Total Selenium	0	0		0	4.600	4.99	24.8	Chem Translator of 0.922 applied
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

☑ ***THH*** CCT (min): 73.984 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Total Barium	0	0		0	2,400	2,400	11,916	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Strontium	0	0		0	4,000	4,000	19,859	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 38.329 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Strontium	0	0		0	N/A	N/A	N/A	
Osmotic Pressure	0	0		0	N/A	N/A	N/A	

☑ ***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 Selenium	Report	Report	Report	Report	Report	µg/L	24.8	CFC	Discharge Conc > 10% WQBEL (no RP)
Osmotic Pressure	XXX	XXX	Report	Report	Report	mOs/kg	89.3	AFC	Discharge Conc > 10% WQBEL (no RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments

Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Total Barium	11,916	µg/L	Discharge Conc ≤ 10% WQBEL
Gross Alpha	N/A	N/A	No WQS
Radium 226/228	N/A	N/A	No WQS
Total Strontium	19,859	µg/L	Discharge Conc ≤ 10% WQBEL
Total Uranium	N/A	N/A	No WQS