pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0028568**
Facility Type	**Municipal**	APS ID	**573100**
Major / Minor	**Major**	Authorization ID	**1198413**

Applicant and Facility Information

Applicant Name	**Bangor Borough Authority** **Northampton County**	Facility Name	**Bangor Borough Authority WWTP**
Applicant Address	197 Pennsylvania Avenue Bangor, PA 18013	Facility Address	900 Lower South Main Street Bangor, PA 18013-2834
Applicant Contact	Barry Schweitzer	Facility Contact	Dean Sanders
Applicant Phone	(610) 588-2216	Facility Phone	(610) 588-3040
Client ID	51313	Site ID	255589
Ch 94 Load Status	Not Overloaded	Municipality	Washington Township
Connection Status	No Limitations	County	Northampton
Date Application Received	September 11, 2017	EPA Waived?	No
Date Application Accepted	October 23, 2017	If No, Reason	Major Facility

Purpose of Application: Renewal of Major Sewage NPDES Permit.

Summary of Review

This is a 1.6 MGD Major POTW NPDES Permit Renewal Application to Martins Creek (TSF; Stream Code# 4680), with new stormwater outfall/conditions being added in this permit cycle. Annual Average Daily flows were 1.07 MGD (2016), 1.19 MGD (2015), and 1.28 MGD (2014). Highest 2016 monthly average flow was 2.01 MGD (February), with 3.89 MGD highest peak instantaneous flow. See EDMR data for more recent flow data.

Background:

- Facility receives flows from Bangor Borough (~2,554 EDUs, 69% - 74.4% in current application), Roseto (712 EDUs, 28% reduced to 20.7% in current application at two locations: North 9th Street & North 1st Street), and Washington Township (173 EDUs, 3% - in current application 4.9%). Authority EIN# is 24-6002564.
- The DEP files indicate the Authority has had a long-term struggle with I&I issues, with 2018 flows substantially increased (record year of precipitation in NEPA). The facility shortens SBR cycle lengths to address flows up to 5,333 GPM (7.67 MGD) max SBR decant rate.
- The facility chose not to renew the General Permit NPDES No. PAG082217 (Non-Exceptional Quality Biosolids) which expired in December 2017 per application.
- No DRBC Docket update since 1988.

Special Conditions: New conditions bolded.

- Part C.I.A, B, and C: Stormwater prohibition; Necessary Property Rights; Residuals Management
- Part C.I.D: Chlorine Minimization
- **Part C.I.E: New Special Chapter 94 Condition (allowing use of 1.9 MGD figure in Chapter 94 Reporting per November 15, 1999 Department letter).**
- **Part C.II: New Standard Solids Condition**
- **Part C.III: New Toxics WQBEL Condition (Chloroform)**

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	March 2, 2020
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Summary of Review

- Part C.IV: WET Test conditions
- **Part C.V: Standard Stormwater Conditions with E.3 condition added in event of sheet flow areas require future stormwater sampling.**

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 and 002	Design Flow (MGD)	1.6 (001) 0 (Outfall 002 stormwater)
Latitude	40º 51' 11.29" (001) 40º 51' 12.19" (002)	Longitude	-75º 12' 19.90" (001) -75º 12' 20.25" (002)
Quad Name	Bangor	Quad Code	1244 (5.23.3)
Wastewater Description:	Sewage Effluent (Outfall No. 001) and Stormwater (Outfall No. 002)		

Receiving Waters	Martins Creek	Stream Code	4680
NHD Com ID	26029862	RMI	-
Drainage Area	19.9	Yield (cfs/mi^2)	0.1592 (slate mining area)
Q_{7-10} Flow (cfs)	3.17	Q_{7-10} Basis	USGS PAStreamstats
Elevation (ft)	440 Feet	Slope (ft/ft)	-
Watershed No.	1-F	Chapter 93 Class.	TSF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	

Background/Ambient Data		Data Source
pH (SU)	No data	-
Temperature (°F)	No data	-
Hardness (mg/L)	140	NPDES Permit Renewal Application. This is a former slate mining area.
Other:	No data	-

Nearest Downstream Public Water Supply Intake		Easton	
PWS Waters	Delaware	Flow at Intake (cfs)	-
PWS RMI	-	Distance from Outfall (mi)	15.2 per application

Changes Since Last Permit Issuance:

- **This is a Natural Trout Reproduction stream subject to non-summer DO WQS. Existing site grandfathered.**
- **Outfall No. 002 is a new stormwater-only outfall addressing a 38,400 square foot area that discharges to a swale directing flow to Martins Creek.**

Other Comments:

- HQ stream reach is ~5 miles downstream (from dam upstream of Old Fork Hill Road to Mouth), near municipality of Martins Creek per previous NPDES Permit Renewal Application file.
- Bangor Borough MS4 NPDES Permit No. PAG132249 outfalls upstream of WWTP discharge point.

Treatment Facility Summary

Treatment Facility Name: Bangor Borough Authority WWTP

WQM Permit No.	Issuance Date	Scope
488**5**426	5/5/1989	Expansion and upgrade of existing 0.8 MGD STP to 1.6 MGD STP (4.8 MGD peak wet weather flow) including bar screens/grit removal, two SBRs, chlorination (two chlorine contact tanks), cascade post aeration. Two Aerobic digestion tanks. High I&I fraction (0.86 MGD out of 1.6 MGD) noted in Design Engineer Report.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Gas Chlorine with sodium bisulfite dechlorination	1.6

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
1.6*	**1975****	Not Overloaded	Aerobic Digestion***	Disposal****

***1.9 MGD may be used in Chapter 94 Reporting. See below.**
**** The 1975 lbs BOD5/day loading would be equivalent to 148 mg/l BOD5 Influent @ 1.6 MGD flow.**
*****Application indicates aerobic digesters are being used for sludge holding, followed by belt filter press.**
******Application indicates sewage sludge is being landfilled (Keystone Landfill), and that a previous biosolids GP No. PAG082217 was not going to be renewed because the disposal site has "dissolved".**

Changes Since Last Permit Issuance: Facility has developed a High Flow Management Plan (HFMP) for handling peak wet weather flows.

Other Comments:

- Facility uses SBRs (noncontinuous flows, no post-equalization).
- **Chapter 94 Report/Hydraulic Overloading**: No overloading in 2018. The facility would have been in hydraulic overload at 1.6 MGD during February – April, August – December 2018. Projected overloading 2019 – 2023 at 1.71 MGD – 1.73 MGD flow. However, the Department previously allowed for the use of 1.9 MGD figure for Chapter 94 Reporting purposes by letter.
    - The WWTP Hydraulic Design Capacity is 1.6 MGD. The previous NPDES Fact Sheet used an incorrect citation for the 1.9 MGD figure, triggering concerns that the facility was hydraulically overloaded due to >1.6 MGD flows.
    - The facility obtained permission to use 1.9 MGD (peak wet weather monthly average flow) in Chapter 94 Reporting by November 15, 1999 DEP Letter, but no WQM permit rerating occurred.
    - Boucher & James (consultant) believes the facility has the ability to treat full strength sewage up to 1.9 MGD, based upon Previous Authority Engineer (Buchart Horn Inc.) letters. That consultant believes the facility has the ability to treat 4.8 MGD peak wet weather flows, without loss of treatment efficiency until 3.8 MGD (when SBR cycles would be shortened). The cited correspondence included:
        - 9/15/1999 DEP Letter (Paul Swerdon, Permits Chief) indicated that Authority "may report maximum three month flows projected in Chapter 94 reports against the 1.9 MGD number". The 1.9 MGD flow is a wet weather flow figure.
        - 6/17/1999 Buchart Horn Letter "requesting acknowledgment of a 1.9 million gallons per day (MGD) wet weather hydraulic capacity" … "In the Chapter 94 process", with a limited engineering evaluation that the SBRs can handle higher average flows.
        - 4/1/1999 Buchart Horn Letter asking for clarification whether the Chapter 94 Report projections should be compared against the 1.6 MGD or 1.9 MGD. The letter referenced a 3/30/1987 NPDES Permit Condition Part C condition: "The average monthly discharge of 1.9 MGD represents the design hydraulic capacity of the treatment facility which includes capacity to accommodate wet

weather related infiltration and inflow. The annual average discharge shall not exceed 1.6 MGD. This annual average flow shall be used by the Department in considering proposals under Act 537 Planning and Chapter 94 – Municipal Wasteload Management". The letter noted that they were approaching the 1.6 MGD permit capacity (3 month flow).

- **2018 Chapter 94 Information**: The 2018 Chapter 94 Report indicates the facility has an aged sewer collection system and illegal connections (sump pumps and roof leaders) that the Authority has implemented a program to identify and remove (during real estate transfers) and is implementing lateral inspections. However, the Authority does not believe there is a conveyance capacity concern. The Authority also stated it intends to start a program to video tape inspect the entire collection system (~86,000 LF gravity sewers consisting mostly of clay pipes installed in the early 1960s). Open channel portable flow meters have been purchased for installation in manholes to monitor wet weather flows. They think inflow is the leading concern.
- **Corrective Action Plan (CAP)**: The 2018 Chapter 94 Report contained a March 18, 2019 Corrective Action Plan (CAP) including:
  - January 2018 system data collection and analysis to: isolate apparent I&I flows; estimate target flow rate based on total number of connections; review EDU rating basis; review Roseto flow rates compared to Bangor Borough and Washington Township; review Walnut Street pump flows/connections; review previously collected manhole flow data; compare building permit records and water meter usage to determine if appropriate number of EDUs are allocated; determine high and low flows; and determine if data collection system needs upgrading.
  - Collection System mapping
  - High Flow Management Plan (HFMP) review and evaluation.
  - I&I Study to include recommendations for data collection points, investigation procedures, and corrective actions with three phases
  - Funding requirements will be considered.
  - System connection restrictions
- 7**/25/2019 Response Letter information**:
  - Roseto Borough flows appeared to represent as much as 75% of the excessive flow, while being only slightly more than 20% of the connected users. Roseto Borough Authority operates its own sewage collection system with 712 connections (mostly residential). Bangor Borough Authority received a set of plans and bid specification for Roseto Borough collection system repairs, but said it had no idea of the likely effectiveness.
  - The 2017 Chapter 94 Report-referenced "Capital Improvements Plan" was prepared by the former Authority engineer but not accepted for implementation by the Authority.

- **Sludge**: **The Chapter 94 Report Solids Management (Sludge) Calculator Spreadsheet estimated they wasted 154% of expected volume wasted. This is outside the normal range of 85 – 115%.** The sludge was hauled to Keystone Landfill.

2017 Chapter 94 Report Information: Walnut Street Pump Station had pumping rate of 80 GPM

85% Minimum Monthly Average Reduction: Facility did not achieve the minimum 85% monthly average reduction in a number of months in 2018 (per table below). The facility engineer (Boucher & James) attributes the problem to weak influent. The facility engineer indicated the Corrective Action Plan (CAP) is expected to reduce wet weather flows.

Compliance History

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

Parameter	DEC-19	NOV-19	OCT-19	SEP-19	AUG-19	JUL-19	JUN-19	MAY-19	APR-19	MAR-19	FEB-19	JAN-19
Flow (MGD) Average Monthly	1.70	1.52	1.35	0.85	1.04	1.39	1.51	**2.58**	**1.93**	1.83	1.82	**2.07**
Flow (MGD) Daily Maximum	2.34	**3.88**	**4.54**	1.24	1.51	2.27	2.44	**5.02**	**4.39**	**3.70**	2.85	**5.05**
pH (S.U.) Minimum	6.6	6.6	6.7	6.7	6.7	6.8	6.6	6.6	6.6	6.6	6.6	6.7
pH (S.U.) Maximum	7.1	7.2	7.1	7.1	7.1	7.2	7.1	7.2	7.2	7.2	7.1	7.1
DO (mg/L) Minimum	8.0	7.4	7.0	6.5	6.8	7.0	7.0	7.2	7.2	6.8	7.6	7.9
TRC (mg/L) Average Monthly	< 0.03	0.04	0.04	0.03	0.02	0.04	< 0.04	< 0.07	< 0.03	< 0.04	0.05	0.03
TRC (mg/L) Instantaneous Maximum	0.07	0.24	0.24	0.25	0.05	0.17	0.39	0.26	0.17	0.14	0.18	0.12
CBOD5 (lbs/day) Average Monthly	< 30	< 27	< 24	< 15	< 18	< 24	< 52	177	47	45	93	87
CBOD5 (lbs/day) Weekly Average	< 36	< 37	< 32	< 18	< 21	< 30	< 67	339	59	82	147	256
CBOD5 (mg/L) Average Monthly	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 4.0	< 6.0	3.0	< 3.0	< 6.0	4
CBOD5 (mg/L) Weekly Average	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 5.0	< 11.0	4.0	5.0	10	10
TSS (lbs/day) Average Monthly	< 56	< 49	< 46	< 30	< 35	< 47	< 25	< 168	< 80.0	< 87	163	83
TSS (lbs/day) Weekly Average	< 72	< 64	< 65	< 36	< 41	< 60	< 29	366	< 134.0	180	293	114
TSS (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4	< 4.0	< 2.0	< 6.0	< 5.0	< 6.0	< 11	< 5
TSS (mg/L) Weekly Average	< 4.0	< 4.0	< 4.0	< 4.0	< 4	< 4.0	< 2.0	10.0	< 7.0	11.0	20	6
Fecal Coliform (CFU/100 ml) Geometric Mean	36	< 12	< 10	9	8	15	8	92	< 6	< 3	< 14	< 12

Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2700	80	4800	256	71	124	33	**8900**	148	48	270	755.6
Ammonia (lbs/day) Average Monthly	< 4	< 2.0	< 1	< 1	< 1	< 1	< 1	< 14	23.0	49	41	17
Ammonia (mg/L) Average Monthly	< 0.31	< 0.2	< 0.11	< 0.16	< 0.15	< 0.1	< 0.1	< 0.48	1.98	3.48	2.72	0.847

DMR Data for Outfall 001 (from January 1, 2018 to December 31, 2018)

Parameter	DEC-18	NOV-18	OCT-18	SEP-18	AUG-18	JUL-18	JUN-18	MAY-18	APR-18	MAR-18	FEB-18	JAN-18
Flow (MGD) Average Monthly	**2.13**	**2.58**	1.68	**1.98**	1.76	0.98	1.10	1.69	1.68	1.84	**2.05**	1.39
Flow (MGD) Daily Maximum	**4.27**	**4.62**	**3.56**	**4.54**	**4.80**	**1.85**	**2.94**	**3.69**	**3.64**	**4.18**	**3.78**	**3.2**
pH (S.U.) Minimum	6.7	6.8	6.7	6.7	6.7	6.6	6.5	6.6	6.6	6.3	6.4	6.4
pH (S.U.) Maximum	7.1	7.1	7.1	7.3	7.2	7.2	7.0	7.0	7.0	7.0	7.0	7.0
DO (mg/L) Minimum	**7.1**	**7.1**	**7.1**	**6.4**	**6.7**	**6.6**	**5.9**	**6.9**	**7.8**	**7.7**	**6.8**	7.3
TRC (mg/L) Average Monthly	0.02	0.04	0.03	0.03	0.04	0.05	0.03	0.03	0.03	0.04	0.03	0.02
TRC (mg/L) Instantaneous Maximum	0.06	0.20	0.24	0.19	0.18	0.33	0.09	0.07	0.07	0.16	0.08	0.10
CBOD5 (lbs/day) Average Monthly	< 54	< 105	44	< 101	< 45	< 25	30	< 56	< 47	168	214	< 66
CBOD5 (lbs/day) Weekly Average	< 84	< 208	256	< 83	< 55	< 34	33	< 114	58	437	328	< 150
CBOD5 (mg/L) Average Monthly	< 3.0	< 4	< 3.0	< 5	< 3.0	< 3.0	< 3.0	< 4	< 3	9	10	< 6.0
CBOD5 (mg/L) Weekly Average	< 4.0	< 8	13.0	< 3	< 3.0	< 3.0	< 4.0	< 5	< 4	18	13	< 10.0
TSS (lbs/day) Average Monthly	< 76	< 134	< 58	< 55	< 40	< 47	< 28	< 106	118	188	404	< 87
TSS (lbs/day) Weekly Average	< 92	< 202	< 78	90	< 72	129	34	357	309	331	673	226
TSS (mg/L) Average Monthly	< 4.0	< 6	< 5.0	< 3	< 3.0	< 5.0	< 3.0	< 6	7	11	19	< 7.0

TSS (mg/L) Weekly Average	< 5.0	< 8	< 5.0	6	< 5.0	10	4.0	15	15	22	27	14.0
Fecal Coliform (CFU/100 ml) Geometric Mean	13	6	< 3.0	6	< 3	< 2	< 3	< 2	> 10	> 18	457	> 54
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	261.3	13.5	47.3	41	12.1	90.9	21.3	9.7	> 2419.6	> 2419.6	> 2419.6	2419.6
Ammonia (lbs/day) Average Monthly	< 4	< 13	< 4	< 2	< 8	< 4	< 10	< 12	45	41	34	> 19
Ammonia (mg/L) Average Monthly	< 0.225	< 0.53	< 0.28	< 0.121	< 0.5	< 0.5	< 1.15	< 0.85	1.91	3.04	1.66	> 2.15

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2018 To: December 31, 2019

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TSS	02/28/18	Avg Mo	404	lbs/day	400	lbs/day
TSS	02/28/18	Wkly Avg	673	lbs/day	600	lbs/day
Fecal Coliform	05/31/19	IMAX	8900	CFU/100 ml	1000	CFU/100 ml

Summary of Inspections:

FACILITY NAME	INSP PROGRAM	INSP ID	INSPECTED DATE	INSP TYPE	INSPECTION RESULT DESC	INSPECTOR ID	# OF VIOLATIONS
BANGOR BORO AUTH WWTP	WPCNP	2929450	08/08/2019	Compliance Evaluation	No Violations Noted	00733079	0
BANGOR BORO AUTH WWTP	WPCNP	2915327	07/11/2019	Administrative/File Review	Violation(s) Noted	00733079	2
BANGOR BORO AUTH WWTP	WPCNP	2806047	10/17/2018	Administrative/File Review	Violation(s) Noted	00511586	1
BANGOR BORO AUTH WWTP	WPCNP	2736804	05/02/2018	Compliance Evaluation	No Violations Noted	00733079	0
BANGOR BORO AUTH WWTP	WPCNP	2687857	01/29/2018	Compliance Evaluation	No Violations Noted	00610365	0
BANGOR BORO AUTH WWTP	WPCNP	2646297	08/17/2017	Administrative/File Review	Violation(s) Noted	00733079	2
BANGOR BORO AUTH WWTP	WPCNP	2560696	02/10/2017	Compliance Evaluation	No Violations Noted	00610365	0
BANGOR BORO AUTH WWTP	WPCNP	2544299	10/26/2016	Administrative/File Review	Violation(s) Noted	00613405	1
BANGOR BORO AUTH WWTP	WPCNP	2453854	02/29/2016	Compliance Evaluation	No Violations Noted	00610365	0
BANGOR BORO AUTH WWTP	WPCNP	2417591	09/17/2015	Compliance Evaluation	Violation(s) Noted	00628030	1
BANGOR BORO AUTH WWTP	WPCNP	2351377	03/13/2015	Administrative/File Review	No Violations Noted	00610365	0
BANGOR BORO AUTH WWTP	WPCNP	2468171	02/13/2015	Compliance Evaluation	Violation(s) Noted	00628030	2
BANGOR BORO AUTH WWTP	WPCNP	2322013	10/20/2014	Compliance Evaluation	No Violations Noted	00628030	0
BANGOR BORO AUTH WWTP	WPCNP	2244065	02/10/2014	Administrative/File Review	No Violations Noted	00610365	0

Other Comments:

Notices of Violation: Besides late DMRs:

- 10/17/2018 NOV (WET Test Violations and 2018 TSS violations): DEP Biologist indicated 2018 WET Retest passed.
- 8/17/2017 NOV due to late NPDES Permit Renewal Application.
- 10/26/2016 NOV (fishkill related to excess chlorine in discharge)

- 10/27/2015 NOV due to fecal coliform IMAX and failure to do annual 2013 and 2014 WET Tests
- 2/13/2015 NOV due to TSS exceedances, Fecal Coliform IMAX exceedances
- 10/21/2013 NOV due to ammonia, Fecal Coliform and TSS issues

Complete and technically adequate application due: August 4, 2017 **(Late). Permit expired 1/31/2018.**

Facility did not achieve 85% minimum monthly average reductions in 2018. See above for details. Facility is proposing Corrective Action Plan to reduce I&I to come into compliance.

2/28/2020 WMS Query (Open Violations by Client No.): No open violations:

Permit: PA0028568
Client ID: 51313
Client: All

Open Violations: 0

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

Table 1 (BOD and TSS Reduction)

Month	Monthly Average flow (MGD)	Influent BOD5 concentration (mg/l) from DMR Supplement	Influent TSS monthly Avg. from DMR Supplement	CBOD5 Effluent Monthly Average* (mg/l) plus 1:1.2 BOD5 conversion	TSS Effluent Monthly Average* Concentration (mg/l)	Estimated BOD5 Reduction (%)	Estimated TSS Reduction (%)
Dec 2018	2.108	56	62	3 (3.6)	4	94.6	93.5
Nov 2018	2.582	28	42	4 (4.8)	6	**82.8**	85.7
Oct 2018	1.675	43	72	3 (3.6)	5	91.6	93.0
Sept 2018	1.984	42	74	5 (6.0)	3	85.7	95.9
Aug 2018	1.763	39	70	3 (3.6)	3	90.7	95.7
July 2018	0.981	80	133	3 (3.6)	5	95.5	97.7
June 2018	1.102	97	129	3 (3.6)	3	96.2	97.6
May 2018	1.69	83	66	4 (4.8)	6	95.6	90.9
April 2018	1.684	113	97	3 (3.6)	7	96.8	92.7
March 2018	1.837	80	62	9 (10.8)	11	86.5	**82.2**
Feb 2018	2.051	58	57	10 (12)	19	**79.3**	**66.6**
Jan 2018	1.392	119	94	6 (7.2)	7	93.9	94.1

***Non-detect concentrations assumed to be the constituent concentration in the absence of better data. BOD5/CBOD5 Correlation used in absence of site-specific correlation, based on regulatory BOD5/CBOD5 secondary treatment technology-based effluent limits equivalence and Metcalf & Eddy Correlation per DEP Central Office.**

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 1.6
Latitude 40º 51' 11.05" **Longitude** -75º 12' 19.26"
Wastewater Description: Sewage Effluent

Permit Limits & Monitoring: Changes Bolded

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
CBOD5	334 Lbs/d 534 Lbs/d 25**.0** 40**.0** 50**.0**	Monthly Average Weekly Average Monthly Average Weekly Average IMAX	Existing Technology limit (Chapter 92a.47) supported by water quality modeling. Significant digit added to concentration values. Application Data: 12 mg/l Max daily value of 194 samples.
TSS	400 Lbs/d 600 Lbs/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 to concentration values. Application Data: 10.4 mg/l Max daily value of 189 samples.
pH	6.0 – 9.0 SU	**Inst.** Min - IMAX	Existing Technology limit (Chapter 92a.47). Application Data: 6.3 – 7.2 SU range from 365 samples.
Dissolved Oxygen (DO)	5.0	**Inst.** Minimum	Existing WQBEL supported by Water Quality Modeling. Application Data: 6 mg/l minimum from 365 samples.
Fecal Coliform (5/1 – 9/30)	200/**100 ml** 1,000/**100 ml**	Geo Mean IMAX	Existing Technology limit (Chapter 92a.47). Application Data: 5800/100 ml max from 105 samples (year-round).
Fecal Coliform (10/1 – 4/30)	2,000/**100 ml** 10,000 ml/**100 ml**	Geo Mean IMAX	See above.
Total Residual Chlorine	0.18 0.42	Monthly Average IMAX	Existing WQBELs supported by updated water quality modeling. Antibacksliding prevents less stringent limit. Application Data: 0.28 mg/l max value of 343 samples.
Ammonia-Nitrogen (5/1 – 10/31)	32 Lbs/d 2.4 Report 4.8	Monthly Average Monthly Average Daily Max IMAX	Existing WQBELs supported by water quality modeling and standard multiplier. Application Data: 3.8 mg/l max from 189 samples (year-round).
Ammonia-Nitrogen (11/1 – 4/30)	96 Lbs/d 7.2 Report 14.4	Monthly Average Monthly Average Daily Max IMAX	See above.
Total Phosphorus	**Report Lbs/d** **Report** **Daily Max**	**Monthly Average** **Monthly Average** **Daily Max**	**Nutrient monitoring being added in this permit cycle (Chapter 92a.61).** Application Data: 2.22 mg/l max daily value of 3 samples.
Total Nitrogen	**Report Lbs/d** **Report** **Report**	**Monthly Average** **Monthly Average** **Daily Max**	**Nutrient monitoring being added in this permit cycle (Chapter 92a.61).** Application Data:

(Nitrate-Nitrite-N + TKN measured in same sample)			Nitrate-Nitrite-N: 2.03 mg/l max of 3 samples. Total Kjehldahl Nitrogen: <0.402 mg/l J max of 3 samples. Total Nitrogen: 3.592 mg/l max of 3 samples.
TDS	**Report Lb/d Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring per Reasonable Potential Analysis and Chapter 92a.61.** Application Data: 340 mg/l Max and average of 293.33 mg/l (3 samples)
Chlorides, Sulfates, and Bromide	Not Needed	-	Does not meet trigger level for monitoring.
Chloroform	**Report (lb/d) 0.052 0.082 0.105**	**Monthly Average Monthly Average Daily Max IMAX**	**Permit limits required by Reasonable Potential Analysis. See below.** Application data: 38.9 ug/l max and 24.4 mg/l average (3 samples). See below for additional sampling data. DEP Target QL of 0.5 ug/l.
Total Copper	**Report (lb/d) Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring Required by Reasonable Potential Analysis.** Application data: 8.11 ug/l max and 6.46 mg/l average (3 samples). DEP Target QL of 4.0 ug/l.
Free Available Cyanide	**Report (lb/d) Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring Required by Reasonable Potential Analysis.** Application data: 5.29 ug/l max value and <4.34 mg/l average (3 samples). DEP Target QL of 1.0 ug/l.
Total Mercury	**Report (lb/d) Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring Required by Reasonable Potential Analysis.** Application data: 0.0287J ug/l max and average of 0.0195 ug/l (3 samples). DEP Target QL of 0.2 ug/l, but detected.
Acrylamide	**Report (lb/d) Report Report**	**Monthly Average Monthly Average Daily Max**	**Monitoring upon request (Chapter 92a.61) during this permit cycle because of use of polyacrylamide sludge/wastewater treatment chemical at a facility subject to high peak wet weather flows.** No application data.

Comments:

EDMR-related Updating: Updated to Instantaneous Minimums for grab sampling (pH, DO). Changed fecal coliform units to current standard (#/100 ml).

Nutrient Monitoring (TN and TP): 1/week for >1 MGD facility discharging to stream not impaired by nutrients.

No new Natural Trout DO limits as there is no new or increased discharge per DEP SOP guidance (i.e. stream was reclassified as Natural Trout Reproduction Stream after original DO limits set forth). The Department would recommend consideration of additional post-aeration in event of any proposed plant upgrades.

Reasonable Potential Analysis-related data: See attached Toxics Screening Spreadsheet and PENTOXSD modeling. Because the closest PWS intake is 15 miles downstream, no TDS water quality modeling was required.

Acrylamide: The facility uses “Keysource Chemical KC-020 Polyacrylamide Emulsion Polymer” for sludge treatment at 4 gal/min (1% solution) max usage rate and is subject to high peak wet weather flows (i.e. washout scenarios). Monitoring

upon request will be required in this permit cycle. The polymer is introduced prior to the Belt Filter Press. No acrylamide effluent data available.

NPDES Application Pollutant Identification and Analysis Section: No other potentially toxic pollutants are known or expected to be in the discharge. Facility has no Industrial Users and does not accept hauled-in wastes.

TRE Grab Sampling: 3/112019 and 3/12/2019 sampling

- 3,3-Dichlorobenzene (ND for all sampling; DEP Target QL of 5.0 ug/l):
  - Site 1 (Borough Hall Tap): <0.139 ug/l
  - Site 2 (WWTP Tap): <0.139 ug/l
  - Stream Before Outfall: <0.139 ug/l
  - WWTP Influent: <0.139 ug/l
  - WWTP Effluent: <0.139 ug/l
- Chloroform (DEP Target QL of 0.5 ug/l):
  - Site 1 (Borough Hall Tap): 2.1 ug/l & 2.2 ug/l
  - Site 2 (WWTP Tap): 1.8 ug/l & 2.2 ug/l
  - Stream Before Outfall: <0.09 ug/l & <0.09 ug/l
  - WWTP Influent: 1.3 ug/l & 0.6 ug/l
  - WWTP Effluent: 0.4 ug/l & 0.4 ug/l

WWTP Effluent 24-Hour Composite Sampling:

- 3,3-Dichlorobenzene (ND for 4 samples): <0.139 ug/l. The insensitive ND application data (<7.74 ug/l) is superseded by the new sensitive ND data. No permit limits or monitoring is required.
- Chloroform: The application data (38.9 ug/l) was >50% the 52.576 ug/l WQBEL, with concentrations. The additional sampling data shows Chloroform is present in the effluent. As the facility uses chlorine gas disinfection, the higher effluent concentration (than above grab influent samples) is reasonable as a chlorine disinfection byproduct in event of excess chlorination (in addition to influent sources probably including water supply chlorination). Permit limits are required.
  - 6/21/2019: 15.7 ug/l
  - 6/20/2019: 11.9 ug/l
  - 6/19/2019: 8.8 ug/l
  - 6/18/2019: 10.9 ug/l
  - Average: 11.8 ug/l

Development of Effluent Limitations

Outfall No. 002 **Design Flow (MGD)** 0
Latitude 40º 51' 13.29" **Longitude** -75º 12' 16.85"
Wastewater Description: Stormwater associated with industrial activities

Permit Limits and Monitoring:

Parameter	Limit (mg/l unless otherwise specified)	SBC	Model/Basis
BOD5	**30.0**	**IMAX**	**This constituent would be present in event of stormwater contamination. General Permit PAG-03 Statewide BPJ benchmark for limit.**
TSS	**100.0**	**IMAX**	**See above.**
Oil & Grease	**30.0**	**IMAX**	**See above.**
TKN	**Report**	**IMAX**	**Monitoring per BPJ.**
Total Iron	**Report**	**IMAX**	**Monitoring per BPJ.**
pH	**6.0 – 9.0 SU**	**Inst. Min - IMAX**	**Chapter 95.2**

Comments: **New stormwater outfall monitoring requirement per 40 CFR 122.26(b).**

- The above constituents are indicators of stormwater contamination.
- Application indicates site stormwater is discharged to grassy areas (sheet flow) and a vegetated swale. Special Condition Part C.IV.E.3 added in event stormwater monitoring is ever required for the stormwater sheet flow areas.

Whole Effluent Toxicity (WET)

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

X Other: **Five WET Tests (7/14/2015 (INVALID due to Eurofins LAB issue); 8/1/2016 (INVALID due to Eurofins LAB issue); 8/28/2017 (PASSED); July 2018 (INVALID due to temperature and holding times issues); 12/3/2018 (Retest PASSED). Subsequent 2019 WET Test received which passed.**

The dilution series used for the tests was: 100%, 72%, 44%, 22%, and 11%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 44%.

Summary of Four Most Recent Test Results

NOEC/LC50 Data Analysis: **Invalid WET Test Data not inputted below.**

	***Ceriodaphnia* Results (% Effluent)**			***Pimephales* Results (% Effluent)**			
Test Date	**NOEC Survival**	**NOEC Reproduction**	**LC50**	**NOEC Survival**	**NOEC Growth**	**LC50**	**Pass? ***
8/28/2017	100	100	>100%	100	100	>100	Yes
12/3/2018	100	100	>100	100	100	>100	Yes
8/13/2019**	100	100	>100	100	100	>100	Yes
-	-	-	-	-	-	-	-

***** *A "passing" result is that which is greater than or equal to the TIWC value.*
*****Received and reviewed by DEP Biologist after latest application update.*

Is there reasonable potential for an excursion above water quality standards based on the results of these tests?

X **NO (see below)**

Comments: Due to invalid WET Test submittals (Lab issues and subsequent temperature/holding time issues invalidated WET tests, with Lab issues discovered too late to allow for retesting in those previous years), there are not four (4) valid WET Test available. The standard WET Test conditions will require another WET Test during the first year of the permit, bringing total to four (4), hence no requirement for quarterly testing for first year of new NPDES Permit term.

- **In the absence of any industrial dischargers and implementation of Toxics Reasonable Potential Permit Limits/monitoring, plus an attaining stream, the presumption is that the facility will not have Reasonable Potential for WET Test failures.**
- **The Department retains broad authority to reopen the permit in event of future WET Test failures. Therefore, the standard WET conditions (no limits) should be sufficient to protect the waters of the Commonwealth.**

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):

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

[(1.6 MGD x 1.547) / ((3.17 cfs x 1) + (1.6 MGD x 1.547))] x 100 = **IWCa% = 43.8%**

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)

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

[(1.6 MGD x 1.547) / ((3.17 cfs x 1) + (1.6 MGD x 1.547))] x 100 = **TIWCc% = 43.8% (~44%)**

3. Determine Dilution Series

Dilution Series = 100%, 72%, 44%, 22%, and 11%.

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: **See above. The Department retains authority in event future WET Test failures occur to reopen the permit to establish WET Limits.**

Communications Log:

9/25/2017: Application incompleteness letter issued.
10/23/2017: Response to Application incompleteness letter received (still missing influent/effluent Total Phosphorus data)
12/13/2017: Revised application received.
3/1/2019: Technical Deficiency Letter issued
3/6/2019: Returned telephone call to Authority consultant (Mike Gable, Boucher James, at 484-894-9239) about deficiency letter.

- He is working on the 2018 Chapter 94 Report Roseto is 4.5 times its EDUs, with SSOs. They need to talk to DEP M&C about SSO reporting requirements.
- He indicated hydraulic overload in 2018, and SSO events. He was unsure where the 1.9 MGD hydraulic design capacity figure came from. Told him about SSO reporting requirements (SSO form and noncompliance form in addition to letter noted SSO reporting requirement).
- Eliminating prohibited stormwater discharges, some home connections become multifamily connections, lots of problems in Roseto.
- No CAP was done per Chapter 2017 Chapter 94 Report.
- Borough Manager is manager of Authority.

3/29/2019: Authority (Boucher & James) E-mail query about potential 3,3-Dichlorobenzidine quantitation limits
4/1/2019: DEP (Berger) E-mail explaining Reasonable Potential Analysis, quantitation limits, and EPA sufficiently sensitive rule.
4/1/2019: Authority (Boucher & James) E-mail indicating non-detect 3,3-Dichlorobenzidine
4/1/2019: DEP (Berger) E-mail regarding insensitive application quantitation limit and EPA sufficiently sensitive rule
4/8/2019: Authority (Boucher & James) E-mail indicating they were looking at facility design capacities (hydraulic and organic).
4/8/2019: DEP (Berger) E-mail regarding rerating options and related.
6/12/2019: Authority (Boucher & James) with preliminary grab sample results and asking if potential limits could be dropped.
6/13/2019: DEP (Berger) E-mail indicating permit limits would be determined after the technical review of the future response to DEP Technical Deficiency Letter.
6/13/2019: Authority (Boucher & James) E-mail asking if two grab samples are sufficient.
6/13/2019: DEP (Berger) E-mail noting four samples requirement of Technical Deficiency Letter and providing additional guidance.
6/13/2019: Authority (Boucher & James) E-mail indicating additional sampling would be done.
6/28/2019: HFMP and CAP submittals.
7/5/2019: Revised 2018 Chapter 94 Report received with clarification on facility's hydraulic capacity
7/26/2019: Response to 3/1/2019 DEP Technical Deficiency Letter received.

TOXICS SCREENING ANALYSIS
WATER QUALITY POLLUTANTS OF CONCERN
VERSION 2.7

Facility: Bangor Borough Authority WWTP
NPDES Permit No.: PA0028568
Outfall: 001
Analysis Hardness (mg/L): 132.11
Discharge Flow (MGD): 1.8
Analysis pH (SU): 7
Stream Flow, Q_{7-10} (cfs): 3.17

	Parameter		Maximum Concentration in Application or Data (µg/L)	Most Stringent Criterion (µg/L)	Candidate for PENTOXSD Modeling?	Most Stringent WQBEL (µg/L)	Screening Recommendation
Group 1	Total Dissolved Solids		340000	500000	Yes		
	Chloride		101000	250000	No		
	Bromide	<	0.6	N/A	No		
	Sulfate		42700	250000	No		
Group 2	Total Aluminum		5.62	750	No		
	Total Antimony		0.44	5.6	No		
	Total Arsenic		0.3	10	No		
	Total Barium		33.4	3400	No		
	Total Beryllium		0.023	N/A	No		
	Total Boron		160	1000	No		
	Total Cadmium		0.0423	0.333	No		
	Total Chromium		1.11	N/A	No		
	Hexavalent Chromium	<	0.1	10.4	No (Value < QL)		
	Total Cobalt		0.194	19	No		
	Total Copper		6.11	11.6	Yes	26.594	Monitor
	Free Available Cyanide		5.28	5.2	Yes	11.895	Monitor
	Total Cyanide		5.28	N/A	No		
	Dissolved Iron		29.4	300	No		
	Total Iron		19.7	1500	No		
	Total Lead		0.397	4.5	No		
	Total Manganese		6.68	1000	No		
	Total Mercury		0.0267	0.05	Yes	0.144	Monitor
	Total Nickel		1.63	99	No		
	Total Phenols (Phenolics)	<	0.487	5	No (Value < QL)		
	Total Selenium		0.683	5.0	No		
	Total Silver	<	0.156	6.1	No (Value < QL)		
	Total Thallium	<	0.0056	0.24	No (Value < QL)		
	Total Zinc		56.8	151.7	No		
	Total Molybdenum		0.439	N/A	No		
Group 3	Acrolein	<	1.65	3	No (Value < QL)		
	Acrylonitrile	<	4.72	0.059	No (Value < QL)		
	Benzene	<	0.479	1.2	No (Value < QL)		
	Bromoform	<	0.345	4.3	No (Value < QL)		
	Carbon Tetrachloride	<	0.438	0.23	No (Value < QL)		
	Chlorobenzene	<	0.425	130	No (Value < QL)		
	Chlorodibromomethane	<	0.54	0.4	Yes	3.68	No Limit/Monitoring
	Chloroethane	<	0.188	N/A	No		
	2-Chloroethyl Vinyl Ether	<	0.917	3500	No (Value < QL)		
	Chloroform		38.9	5.7	Yes	52.578	Establish Limits
	Dichlorobromomethane	<	0.689	0.55	No (Value < QL)		
	1,1-Dichloroethane	<	0.138	N/A	No		
	1,2-Dichloroethane	<	0.113	0.38	No (Value < QL)		
	1,1-Dichloroethylene	<	0.39	33	No (Value < QL)		
	1,2-Dichloropropane	<	0.444	2200	No (Value < QL)		
	1,3-Dichloropropylene	<	0.14	0.34	No (Value < QL)		
	1,4-Dioxane	<	8.4	N/A	No		
	Ethylbenzene	<	0.381	530	No (Value < QL)		
	Methyl Bromide	<	0.281	47	No (Value < QL)		
	Methyl Chloride	<	0.213	5600	No (Value < QL)		
	Methylene Chloride	<	0.147	4.6	No (Value < QL)		
	1,1,2,2-Tetrachloroethane	<	0.187	0.17	No (Value < QL)		
	Tetrachloroethylene	<	0.42	0.69	No (Value < QL)		
	Toluene	<	0.472	330	No (Value < QL)		
	1,2-trans-Dichloroethylene	<	0.112	140	No (Value < QL)		
	1,1,1-Trichloroethane	<	0.447	810	No (Value < QL)		
	1,1,2-Trichloroethane	<	0.232	0.59	No (Value < QL)		
	Trichloroethylene	<	0.362	2.5	No (Value < QL)		
	Vinyl Chloride	<	0.182	0.025	No (Value < QL)		
Group 4	2-Chlorophenol	<	0.571	81	No (Value < QL)		
	2,4-Dichlorophenol	<	0.669	77	No (Value < QL)		
	2,4-Dimethylphenol	<	0.909	100	No (Value < QL)		
	4,6-Dinitro-o-Cresol	<	6.36	13	No (Value < QL)		
	2,4-Dinitrophenol	<	5.34	69	No (Value < QL)		
	2-Nitrophenol	<	0.713	1600	No (Value < QL)		
	4-Nitrophenol	<	0.319	470	No (Value < QL)		
	p-Chloro-m-Cresol	<	0.573	30	No (Value < QL)		
	Pentachlorophenol	<	2.39	0.27	No (Value < QL)		
	Phenol	<	0.467	10400	No (Value < QL)		
	2,4,6-Trichlorophenol	<	0.705	1.4	No (Value < QL)		

Group 5	Acenaphthene	<	0.728	17	No (Value < QL)		
	Acenaphthylene	<	0.708	N/A	No		
	Anthracene	<	0.546	8300	No (Value < QL)		
	Benzidine	<	19.8	0.000086	No (Value < QL)		
	Benzo(a)Anthracene	<	0.532	0.0038	No (Value < QL)		
	Benzo(a)Pyrene	<	0.539	0.0038	No (Value < QL)		
	3,4-Benzofluoranthene	<	0.451	0.0038	No (Value < QL)		
	Benzo(ghi)Perylene	<	0.443	N/A	No		
	Benzo(k)Fluoranthene	<	0.532	0.0038	No (Value < QL)		
	Bis(2-Chloroethoxy)Methane	<	0.745	N/A	No		
	Bis(2-Chloroethyl)Ether	<	0.662	0.03	No (Value < QL)		
	Bis(2-Chloroisopropyl)Ether	<	0.74	1400	No (Value < QL)		
	Bis(2-Ethylhexyl)Phthalate		2.08	1.2	Yes	11.669	No Limits/Monitoring
	4-Bromophenyl Phenyl Ether	<	0.646	54	No (Value < QL)		
	Butyl Benzyl Phthalate	<	0.685	35	No (Value < QL)		
	2-Chloronaphthalene	<	0.7	1000	No (Value < QL)		
	4-Chlorophenyl Phenyl Ether	<	0.684	N/A	No		
	Chrysene	<	0.349	0.0038	No (Value < QL)		
	Dibenzo(a,h)Anthracene	<	0.585	0.0038	No (Value < QL)		
	1,2-Dichlorobenzene	<	0.212	160	No (Value < QL)		
	1,3-Dichlorobenzene	<	0.147	89	No (Value < QL)		
	1,4-Dichlorobenzene	<	0.074	150	No (Value < QL)		
	3,3-Dichlorobenzidine	<	0.139	0.021	No (Value < QL)		
	Diethyl Phthalate	<	0.564	800	No (Value < QL)		
	Dimethyl Phthalate	<	0.686	500	No (Value < QL)		
	Di-n-Butyl Phthalate	<	0.579	21	No (Value < QL)		
	2,4-Dinitrotoluene	<	0.609	0.05	No (Value < QL)		
	2,6-Dinitrotoluene	<	0.586	0.05	No (Value < QL)		
	Di-n-Octyl Phthalate	<	0.662	N/A	No		
	1,2-Diphenylhydrazine	<	0.548	0.036	No (Value < QL)		
	Fluoranthene	<	0.404	42	No (Value < QL)		
	Fluorene	<	0.527	1100	No (Value < QL)		
	Hexachlorobenzene	<	0.548	0.00028	No (Value < QL)		
	Hexachlorobutadiene	<	0.309	0.44	No (Value < QL)		
	Hexachlorocyclopentadiene	<	0.36	1	No (Value < QL)		
	Hexachloroethane	<	0.59	1.4	No (Value < QL)		
	Indeno(1,2,3-cd)Pyrene	<	0.425	0.0038	No (Value < QL)		
	Isophorone	<	0.748	35	No (Value < QL)		
	Naphthalene	<	0.143	43	No (Value < QL)		
	Nitrobenzene	<	0.764	17	No (Value < QL)		
	n-Nitrosodimethylamine	<	0.276	0.00069	No (Value < QL)		
	n-Nitrosodi-n-Propylamine	<	0.669	0.005	No (Value < QL)		
	n-Nitrosodiphenylamine	<	0.572	3.3	No (Value < QL)		
	Phenanthrene	<	0.531	1	No (Value < QL)		
	Pyrene	<	0.512	830	No (Value < QL)		
	1,2,4-Trichlorobenzene	<	0.435	20	No (Value < QL)		
Group 6	Aldrin	<		0.000049			
	alpha-BHC	<		0.0026			
	beta-BHC	<		0.0091			
	gamma-BHC	<		0.058			
	delta BHC	<		N/A			
	Chlordane	<		0.0008			
	4,4-DDT	<		0.00022			
	4,4-DDE	<		0.00022			
	4,4-DDD	<		0.00031			
	Dieldrin	<		0.000052			
	alpha-Endosulfan	<		0.056			
	beta-Endosulfan	<		0.056			
	Endosulfan Sulfate	<		N/A			
	Endrin	<		0.036			
	Endrin Aldehyde	<		0.29			
	Heptachlor	<		0.000079			
	Heptachlor Epoxide	<		0.000039			
	Toxaphene	<		0.0002			
	2,3,7,8-TCDD	<		0.000000005			
Group 7	Gross Alpha (pCi/L)	<		N/A			
	Total Beta (pCi/L)	<		N/A			
	Radium 226/228 (pCi/L)	<		N/A			
	Total Strontium	<		4000			
	Total Uranium	<		N/A			

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
01F	4680	MARTINS CREEK

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)
2.110	Bangor Nor Auth	PA0028568	1.600	CBOD5	25		
				NH3-N	2.4	4.8	
				Dissolved Oxygen			5

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
01F	4680	MARTINS CREEK

RMI	Name	Permit Number	Disc Flow (mgd)
2.11	Bangor Bor Auth	PA0028568	1.6000

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
3,3'-DICHLORO-BENZIDINE	0.194	CRL	0.302	0.194	CRL
BIS(2-ETHYLHEXYL) PHTHALATE	2.69	INPUT	4.197	11.069	CRL
CHLORODIBROMOMETHANE	0.54	INPUT	0.842	3.69	CRL
CHLOROFORM	38.9	INPUT	60.69	52.576	CRL
COPPER	8.11	INPUT	12.653	26.594	AFC
CYANIDE, FREE	5.29	INPUT	8.253	11.856	CFC
MERCURY	0.029	INPUT	0.045	0.114	THH

TRC_CALC

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

3.17	= Q stream (cfs)	0.5	= CV Daily
1.6	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.428	1.3.2.iii	WLA cfc = 0.409
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.159	5.1d	LTA_cfc = 0.238

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.196	AFC
		INST MAX LIMIT (mg/l) = 0.641	