pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southeast Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0026247**
Facility Type	**Municipal**	APS ID	**1057761**
Major / Minor	**Major**	Authorization ID	**1386700**

Applicant and Facility Information

Applicant Name	**Hatfield Township Municipal Authority**	Facility Name	**Hatfield Township STP**
Applicant Address	3200 Advance Lane	Facility Address	3200 Advance Lane
	Colmar, PA 18915-9766		Colmar, PA 18915-9766
Applicant Contact	Peter Dorney	Facility Contact	Peter Dorney
Applicant Phone	(215) 822-9300	Facility Phone	(215) 822-9300
Client ID	52144	Site ID	454144
Ch 94 Load Status	Not Overloaded	Municipality	Hatfield Township
Connection Status	No Limitations	County	Montgomery
Date Application Received	February 7, 2022	EPA Waived?	No
Date Application Accepted		If No, Reason	Major Facility, Pretreatment
Purpose of Application	Permit Renewal		

Summary of Review

The applicant requests renewal of an NPDES permit to discharge treated sewage from Hatfield Township STP to West Branch Neshaminy Creek via Outfall 001 and stormwater via Outfalls 002, 003, and 004.

The following are the Municipalities served by the facility: Hatfield Twp., Hatfield Boro, Hilltown twp., Franconia twp. and Montgomery Twp.

The treatment plant includes influent pumping, equalization (2), mechanical screening, grit and grease removal, primary clarification (2), counter current aeration reactors (2), final clarification (2), and UV disinfection prior to discharge.

The following wastewater chemicals are used at the facility: Ferric Chloride (38%), Polymer Zeta Lyte 2240 CH, Potassium Permanganate, Liquid Polymer Zeta Lyte 1-A, Liquid Caustic Soda, 22-25% and Activated Carbon.

No upgrades are proposed over the next five years.

The following industrial users are connected to the sewer system:

1. A.L. Finishing Co, Inc.
2. Brooks Instrument, LLC
3. Cobham Advanced Electronic Solutions
4. Laboratory Testing, Inc.
5. Lucerne Dairy Plant
6. Parker-Hannifin Corp. Precision Fluidics Div.
7. Penn Color, Inc.
8. Mid-Atlantic Packaging Inc.
9. Tuscan/Lehigh Dairies, Inc.

Approve	Deny	Signatures	Date
X		*Sara Abraham* Sara Reji Abraham, E.I.T. / Project Manager	April 18, 2022
X		*Pravin Patel* Pravin C. Patel, P.E. / Environmental Engineer Manager	04/18/2022

Summary of Review

Discharge is in compliance with the permit limitations based on the review of eDMRs. According to Operations the facility is well operated and maintained.

A permit amendment issued on May 28, 2015 and the subsequent renewal issued on August 21, 2017 incorporated a site-specific criterion based on a streamlined WER study for Copper. According to DEP SOP, a Part C condition is established in the draft permit that requires site-specific data collection and provide an option to conduct a new site-specific criteria study (SSCS). The new SSCC for Copper must be conducted using the Biotic Ligand Model.

The permit was amended in 2015 for a rerate of the facility to an annual average design flow of 6.98 MGD and a maximum monthly flow hydraulic design capacity of 10.68 MGD. There are no significant differences in flow, stream designation, influent characteristics, treatment system etc. The recommended effluent limitations are mostly similar to the existing permit limitations.

Influent monitoring for CBOD5, TSS and BOD5 are recommended to continue in the draft permit to check compliance with the 85% removal requirement and Chapter 94 requirement.

A reasonable potential analysis was performed on the most recent effluent data using the Toxic Management Spreadsheet (TMS).

Sludge use and disposal description and location(s): The facility accepts outside sludges, septage and other hauled wastes. Sludges are blended and dewatered with centrifuges, centrifuge cake is incinerated, and incinerator ash is disposed offsite in an approved landfill. Infrequent liquid sludge disposal at other WWTP also occurs when incinerator shut down for maintenance, as needed.

There is an approved pretreatment program for the facility. Similar to the existing permit the requirement for pretreatment program implementation is included in the draft permit.

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.

Act 14 Notifications:

Hatfield Township - August 27, 2021
Montgomery County - August 25, 2021

Permit Conditions:

A. No Stormwater
B. Acquire Necessary Property Rights
C. Proper Sludge Disposal
D. Chlorine Optimization
E. Small Stream Discharge
F. Operator Notification
G. Fecal Coliform Reporting
H. Pretreatment Program Implementation
I. Solids Management
J. Site-Specific Criteria Study

Summary of Review
K. WET Condition L. Stormwater Outfalls Requirement

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	6.98
Latitude	40º 16' 32.12"	Longitude	-75º 15' 8.06"
Quad Name	Telford	Quad Code	1643
Wastewater Description:	Treated Sewage Effluent		
Receiving Waters	West Branch Neshaminy Creek (WWF, MF)	Stream Code	2868
NHD Com ID	25484888	RMI	2.8
Drainage Area	17 mi^2		
Q_{7-10} Flow (cfs)	1.12	Q_{7-10} Basis	Previous fact sheet*
Elevation (ft)	264		
Watershed No.	2-F	Chapter 93 Class.	WWF, MF
Assessment Status	Impaired		
Cause(s) of Impairment	algae, flow regime modification, nutrients, organic enrichment, siltation		
Source(s) of Impairment	agriculture, municipal point source discharges, urban runoff/storm sewers		
TMDL Status	Final,04/09/2003	Name	Neshaminy Creek

*Based on a drainage area of 17.0 mi^2 the Q7-10 flow at Hatfield twp. STP is estimated as 1.12 cfs (from previous fact sheet)

The site-specific design conditions used in the TMS model are:

Discharge flow = 6.98 MGD
Discharge hardness = 153 mg/l
Discharge pH = 7.2
Stream hardness = 168 mg/l
Stream pH = 7

For Discharge Point: RMI = 2.8
Elevation = 264 ft
DA = 17 mi^2

For End of Reach 1 : RMI = 0.0
Elevation = 245 ft
Drainage Area = 19.8 mi^2
Q_{7-10} Flow = 1.304 (this flow is proportionately calculated from 1.12 cfs/17mi^2)

Treatment Facility Summary

Treatment Facility Name: Hatfield Township STP

WQM Permit No.	Issuance Date
4615403	08/04/2015

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with Ammonia And Phosphorus	Activated Sludge	Ultraviolet	6.98

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
10.68	22300	Not Overloaded	Centrifugation	incinerator

Compliance History

DMR Data for Outfall 001 (from February 1, 2021 to January 31, 2022)

Parameter	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21
Flow (MGD) Average Monthly	7.14	4.84	5.01	5.45	7.37	6.47	5.58	6.77	6.02	10.54	10.93	10.34
Flow (MGD) Daily Maximum	15.68	6.65	7.73	13.68	25.27	15.59	7.94	13.26	17.15	6.83	24.04	24.38
pH (S.U.) Minimum	6.8	6.9	6.8	6.9	6.9	6.9	7.0	6.8	6.8	6.7	6.6	6.7
pH (S.U.) Instantaneous Maximum	7.3	7.4	7.3	7.3	7.4	7.6	7.6	7.5	7.6	7.2	7.3	7.3
DO (mg/L) Minimum	8.8	8.4	8.2	7.9	7.8	6.8	7.6	7.9	8.1	8.5	9.0	9.0
CBOD5 (lbs/day) Average Monthly	< 182	< 116	< 126	< 155	< 196	< 170	< 140	< 173	< 154	< 172	< 312	< 312
CBOD5 (lbs/day) Raw Sewage Influent Average Monthly	8896	8660	8088	7206	7430	7528	8603	9274	8114	8810	9635	9647
CBOD5 (lbs/day) Weekly Average	< 244	< 154	< 169	< 313	< 342	< 297	< 150	< 241	< 208	< 202	< 477	< 445
CBOD5 (mg/L) Average Monthly	< 3.0	< 3	< 3	< 3.2	< 3.1	< 3.0	< 3.0	< 3.0	< 3.0	< 3	< 3	< 3
CBOD5 (mg/L) Raw Sewage Influent Average Monthly	160	224	200	183	146	161	188	176	180	157	110	123
CBOD5 (mg/L) Weekly Average	< 3.0	< 3	< 3	4	< 3	< 3	< 3	< 3	< 3.0	< 3	< 3	< 5
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	11228	11450	11165	9966	10215	10118	10801	11904	10606	11511	13035	12591
BOD5 (mg/L) Raw Sewage Influent Average Monthly	204	297	273	255	198	215	239	225	236	207	151	168

TSS (lbs/day) Average Monthly	245	91	83	197	307	188	120	155	178	177	485	626
TSS (lbs/day) Raw Sewage Influent Average Monthly	11123	12030	11018	9898	11348	12126	14300	13657	12927	13278	15805	11817
TSS (lbs/day) Weekly Average	351	208	184	506	591	387	123	240	323	205	1111	847
TSS (mg/L) Average Monthly	4	2	2	3	4	3	3	3	3	3	5	5
TSS (mg/L) Raw Sewage Influent Average Monthly	204	313	259	254	213	257	311	260	283	236	189	158
TSS (mg/L) Weekly Average	4	3	3	6	5	4	3	3	4	4	7	7
Total Dissolved Solids (lbs/day) Average Monthly	26637	12923	13859	10581	39557	19581	16896	19217	19707	21434	35607	53419
Total Dissolved Solids (mg/L) Average Monthly	446	353	328	292	560	400	403	376	433	405	442	853
Fecal Coliform (CFU/100 ml) Geometric Mean	20	7	12	42	71	58	48	17	12	6	5	10
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	121	35	185	548	517	214	411	210	34	11	25	152
UV Transmittance (%) Minimum	74.4	67.6	71.2	69.9	67.8	65.3	67.2	67.2	69.5	70.5	72.5	77
Nitrate-Nitrite (lbs/day) Average Monthly	333	208	189	204	239	209	201	282	282	333	330	356
Nitrate-Nitrite (mg/L) Average Monthly	5.8	5.4	4.6	4.8	4.2	4.0	4.3	5.04	5.9	6	3.8	4.7
Total Nitrogen (lbs/day) Average Monthly	476	267	246	186	227	215	199	311	< 380	437	837	404
Total Nitrogen (mg/L) Average Monthly	4.84	8.5	6.2	5.65	6.4	4.92	5.8	6.1	< 7.3	6.45	9.8	5.6
Ammonia (lbs/day) Average Monthly	< 29	< 15	< 8	< 15	< 14	< 11	< 14	< 13	< 11	< 11	< 154	< 126
Ammonia (mg/L) Average Monthly	< 0.5	< 0.4	< 0.2	< 0.3	< 0.2	< 0.2	< 0.3	< 0.2	< 0.2	< 0.2	< 1.8	< 1.2

TKN (lbs/day) Average Monthly	53	38	40	21	39	42	38	< 51	< 52	58	658	72
TKN (mg/L) Average Monthly	0.54	1.2	1.0	0.65	1.1	0.95	1.1	< 1	< 1.0	0.85	7.7	1
Total Phosphorus (lbs/day) Average Monthly	19	15	9	18	21	22	15	15	17	14	17	19
Total Phosphorus (mg/L) Average Monthly	0.31	0.38	0.22	0.40	0.34	0.41	0.327	0.28	0.35	0.25	0.17	0.2
Total Aluminum (mg/L) Average Monthly	< 0.025	0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	0.024	< 0.025	0.054	< 0.025
Total Copper (lbs/day) Average Monthly	0.9	0.6	0.5	0.5	0.7	0.5	0.5	0.5	0.8	0.9	0.9	0.9
Total Copper (lbs/day) Daily Maximum	1	0.6	0.5	0.8	1	0.7	0.5	0.7	1	1	1	1
Total Copper (mg/L) Average Monthly	0.015	0.015	0.011	0.0117	0.0104	0.0097	0.012	0.01	0.018	0.017	0.0115	0.015
Total Copper (mg/L) Daily Maximum	0.019	0.017	0.12	0.013	0.014	0.012	0.013	0.014	0.02	0.02	0.014	0.017
Dissolved Iron (mg/L) Average Monthly	0.034	0.049	0.060	0.052	0.075	0.066	0.055	0.052	0.089	0.044	0.049	0.037
Total Iron (mg/L) Average Monthly	0.200	0.21	0.21	0.11	0.24	0.18	0.16	0.180	0.31	0.18	0.41	0.160
Sulfate (mg/L) Average Monthly	32	40	36	49	37	33	41	29	44	31	31	35.0
Chloride (mg/L) Average Monthly	186	115	105	133	103	114	115	138	150	165	157	430
Bromide (mg/L) Average Monthly	< 2.5	< 2.5	< 0.4	1.9	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	1.9	1.4
Total Hardness (mg/L) Average Monthly	140	170	150	140	150	130	150	140	160	140	140	270
Chronic WET - Ceriodaphnia Survival (TUc) Daily Maximum		GG			1.1			GG			GG	
Chronic WET - Ceriodaphnia Reproduction (TUc) Daily Maximum		GG			1.1			GG			GG	

Chronic WET - Pimephales Survival (TUc) Daily Maximum		GG			1.1			GG			GG	
Chronic WET - Pimephales Growth (TUc) Daily Maximum		GG			1.1			GG			GG	

DMR Data for Outfall 002 (from February 1, 2021 to January 31, 2022)

Parameter	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21
pH (S.U.) Annual Average		7.5										
CBOD5 (mg/L) Annual Average		3										
COD (mg/L) Annual Average		30										
TSS (mg/L) Annual Average		27										
Oil and Grease (mg/L) Annual Average		< 1.5										
Fecal Coliform (CFU/100 ml) Annual Average		546										
TKN (mg/L) Annual Average		0.5										
Total Phosphorus (mg/L) Annual Average		0.16										
Dissolved Iron (mg/L) Annual Average		< 0.041										

DMR Data for Outfall 003 (from February 1, 2021 to January 31, 2022)

Parameter	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21
pH (S.U.) Annual Average		7.3										
CBOD5 (mg/L) Annual Average		4										

COD (mg/L) Annual Average		30										
TSS (mg/L) Annual Average		85										
Oil and Grease (mg/L) Annual Average		< 1.5										
Fecal Coliform (CFU/100 ml) Annual Average		> 24196										
TKN (mg/L) Annual Average		0.88										
Total Phosphorus (mg/L) Annual Average		0.54										
Dissolved Iron (mg/L) Annual Average		< 0.041										

DMR Data for Outfall 004 (from February 1, 2021 to January 31, 2022)

Parameter	JAN-22	DEC-21	NOV-21	OCT-21	SEP-21	AUG-21	JUL-21	JUN-21	MAY-21	APR-21	MAR-21	FEB-21
pH (S.U.) Annual Average		7.3										
CBOD5 (mg/L) Annual Average		6										
COD (mg/L) Annual Average		45										
TSS (mg/L) Annual Average		82										
Oil and Grease (mg/L) Annual Average		< 1.5										
Fecal Coliform (CFU/100 ml) Annual Average		> 24196										
TKN (mg/L) Annual Average		0.74										
Total Phosphorus (mg/L) Annual Average		0.24										
Dissolved Iron (mg/L) Annual Average		0.052										

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 6.98
Latitude 40º 16' 32.47" **Longitude** -75º 15' 8.80"
Wastewater Description: Treated 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)

*TRC limit is not required since UV disinfection is provided. And no chlorine equipment is available at the facility for back up.

Water Quality-Based Limitations

The following limitations apply:

Parameters	Monthly Ave. Conc (mg/l)	Weekly Ave Conc. (mg/l)	Inst. Max. (mg/l)	Basis
$CBOD_5$ (5/1 to 10/31)	9.1	14	18	Existing/previous WQM*
$CBOD_5$ (11/1 to 4/30)	18	27	36	Existing (seasonal limit) *
Dissolved Oxygen	6.0			Existing/previous WQM*
Total Suspended Solids	30	45	60	Existing/DRBC
TDS	1000		1500	Existing/DRBC**
NH_3 –N (05/01 to 10/31)	1.8		3.6	Existing/previous WQM*
NH_3 –N (11/1 to 4/30)	5.5		11	Existing (seasonal limit) *
Nitrate-Nitrite as N (07/01 to 10/31)	8.2		16.4	Existing***
Nitrate-Nitrite as N (11/01 to 6/30)	Reprot			Existing***
TKN	Report			Existing
Total N	Report			Existing

Chloride	Report			Existing
Bromide	Report			Existing
Sulfate	Report			Existing
Total P (4/1 to 10/31)	0.74		1.48	Existing****
Total P (11/1 to 3/31)	1.0		2.0	Existing****
UV Transmittance (%)			Report (Daily Minimum)	Existing/SOP
Fecal Coliform (# / 100ml)	200 (Geo.Mean)		1000	Ch. 92a /DRBC
E. Coli			Report	Ch. 92a*****
PH	6.0 to 9.0 std. units at all times			Ch. 93

*These limits were previously calculated using WQM model. Recommended existing limitations.

** DRBC Regulation 3.10.4.D.2 includes an end-of-pipe TDS limit of 1,000 ppm. 25 Pa Code 93.7 includes TDS criteria, applicable at PWS intakes, of 500 mg/l as a monthly average, and a maximum of 750 mg/l. There is a statewide osmotic pressure criterion of 50 mosm (~1,500 mg/l TDS). No public water supply nearby, downstream of the point of discharge. Recommended existing limitations.

As the constituents of TDS, Chloride, Bromide and Sulfate are in the existing permit. There is no PWS downstream and no water quality criterion for Bromide therefore, the frequency of monitoring is reduced for these parameters to once per quarter in the draft permit.

*** The facility has an existing nitrite-nitrate limit of 8.2 mg/l, effective July thru October. The nitrite-nitrate limit is based on protection of the PWS use of Neshaminy Creek during the critical period of July thru October. Most sewage facilities that discharge in the Neshaminy Creek basin historically had a combined effluent limit for ammonia and nitrite-nitrate equal to 11 mg/l effective during the critical period. During the 2015 rerate of this facility (design flow increased from 6.43 MGD to 6.98 MGD), it was agreed to keep the same mass-based limit and lower the concentration accordingly. The revised limits are in effect since then. Recommended existing limitations.

**** The nutrient TMDL for Neshaminy Creek was withdrawn and EPA is expected to develop a new TMDL to include stringent limits for total phosphorus. Therefore, no increase in existing phosphorus load can be allowed until a revised TMDL is developed to address the impairment. Using the statistical methods outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control*, the Phosphorus limit was calculated for this discharge in 2011. During the 2015 rerate of this facility, it was agreed to keep the same mass-based limit and lower the concentration accordingly. The revised limits are in effect since then. Recommended existing limitations.

***** E. Coli monitoring is included in the draft permit according to the DEP SOP guidance (Chapter 92.a.61). This is a new requirement and is consistent with the requirements of other similar discharges in the area.

Monitoring for Total Hardness is also continued in the draft permit for data collection.

A "Reasonable Potential Analysis" determined the following parameters were candidates for limitations or monitoring:

Parameter	Limit (mg/l)	SBC	Model
Total Antimony	Report	Average Monthly	Toxic Management Spreadsheet (TMS)
Total Cadmium	Report	Average Monthly	TMS
*Total Copper	Report	Average Monthly	TMS
**Free Cyanide	4.41	Average Monthly	TMS
Dissolved Iron	Report	Average Monthly	TMS
Total Iron	Report	Average Monthly	TMS
Total Lead	Report	Average Monthly	TMS
Total Selenium	Report	Average Monthly	TMS
Total Zinc	Report	Average Monthly	TMS

* The copper monitoring contained in the existing permit is based on site-specific copper criteria recommended in a Determination of Copper Water Effect Ratio (WER) for West Branch Neshaminy Creek and Hatfield Township Municipal Authority (HTMA) (Tetra Tech, Inc., October 14, 2013). Effluent and stream samples were obtained in August and September 2013, under low flow conditions in the receiving water. Whole Effluent Toxicity (WET) testing was conducted on these samples following EPA's streamlined procedure for evaluating the WER for copper. The study results yielded WERs of 6.2 (dissolved copper) and 6.0 (total recoverable copper). Applying the total recoverable WER in the TMS model run, the governing WQBEL is calculated as 89.5 ug/l and recommended a reporting requirement for Total Copper.

According to DEP SOP, a Part C condition is established in the draft permit that requires the permittee to do site specific data collection and provides an option to conduct a new site-specific criteria study (SSCS). Any new SSCS for Copper must be conducted using the Biotic Ligand Model (BLM).

** Application reported four results for Free Cyanide. All of them are below the most stringent criterion. Three reported concentrations are below the 50% of the calculated WQBEL. The quantitation levels (QLs) used for analyses are above the recommended target QL. The reported concentration values are less than the reporting limit but greater than the method detection limit. Monitoring is included in the draft permit to collect more data and this will be reevaluated at the next permit renewal. We request the permittee to use the recommended TQL for future analyses.

Total Antimony, Total Cadmium, Dissolved Iron Total Iron, Total Lead, Total Selenium and Total Zinc are also recommended to be monitored based on the TMS model run.

Total Aluminum monitoring is eliminated from the permit because there is no reasonable potential to exceed the water quality criteria and the facility doesn't use any Aluminum containing chemicals in their treatment.

Best Professional Judgment (BPJ) Limitations

N/A

Anti-Backsliding

The current WET limits are eliminated based on the review of the submitted WET reports.
New monitoring data constitutes new information and RP is not demonstrated and hence the anti-backsliding exception applies here.

See the below attached TMS model report:

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Discharge Information

Instructions | Discharge | Stream

Facility: **Hatfield Twp STP** NPDES Permit No.: **PA0026247** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **treated 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
6.98	153	7.2						

					0 if left blank		0.6 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		690									
	Chloride (PWS)	mg/L		510									
	Bromide	mg/L	<	2.5									
	Sulfate (PWS)	mg/L		58.3									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		25									
	Total Antimony	µg/L		0.71									
	Total Arsenic	µg/L		0.97									
	Total Barium	µg/L		60									
	Total Beryllium	µg/L	<	0.12									
	Total Boron	µg/L		160									
	Total Cadmium	µg/L		0.155									
	Total Chromium (III)	µg/L		1.3									
	Hexavalent Chromium	µg/L	<	1									
	Total Cobalt	µg/L		0.53									
	Total Copper	µg/L		21.8								6	
	Free Cyanide	µg/L		2.3									
	Total Cyanide	µg/L		5.6									
	Dissolved Iron	µg/L		89									
	Total Iron	µg/L		327									
	Total Lead	µg/L		1.07									
	Total Manganese	µg/L		67.7									
	Total Mercury	µg/L	<	0.079									
	Total Nickel	µg/L		6.9									
	Total Phenols (Phenolics) (PWS)	µg/L		13									
	Total Selenium	µg/L		0.77									
	Total Silver	µg/L	<	0.17									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		51.4									
	Total Molybdenum	µg/L		12.4									
	Acrolein	µg/L	<	1									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.3									
	Benzene	µg/L	<	0.05									
	Bromoform	µg/L	<	0.1									

Group 3	Carbon Tetrachloride	µg/L	<	0.1									
	Chlorobenzene	µg/L		0.1									
	Chlorodibromomethane	µg/L	<	0.1									
	Chloroethane	µg/L	<	0.1									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L	<	0.9									
	Dichlorobromomethane	µg/L	<	0.2									
	1,1-Dichloroethane	µg/L	<	0.1									
	1,2-Dichloroethane	µg/L	<	0.3									
	1,1-Dichloroethylene	µg/L	<	0.2									
	1,2-Dichloropropane	µg/L	<	0.2									
	1,3-Dichloropropylene	µg/L	<	0.1									
	1,4-Dioxane	µg/L		2.3									
	Ethylbenzene	µg/L	<	0.1									
	Methyl Bromide	µg/L	<	0.1									
	Methyl Chloride	µg/L	<	0.3									
	Methylene Chloride	µg/L		0.45									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.05									
	Tetrachloroethylene	µg/L	<	0.2									
	Toluene	µg/L		0.2									
	1,2-trans-Dichloroethylene	µg/L	<	0.1									
	1,1,1-Trichloroethane	µg/L	<	0.1									
	1,1,2-Trichloroethane	µg/L	<	0.2									
	Trichloroethylene	µg/L	<	0.2									
	Vinyl Chloride	µg/L	<	0.3									
Group 4	2-Chlorophenol	µg/L	<	5.5									
	2,4-Dichlorophenol	µg/L	<	5.5									
	2,4-Dimethylphenol	µg/L	<	5.5									
	4,6-Dinitro-o-Cresol	µg/L	<	2.2									
	2,4-Dinitrophenol	µg/L	<	2.2									
	2-Nitrophenol	µg/L	<	5.5									
	4-Nitrophenol	µg/L	<	5.5									
	p-Chloro-m-Cresol	µg/L	<	5.5									
	Pentachlorophenol	µg/L	<	5.5									
	Phenol	µg/L	<	1.1									
	2,4,6-Trichlorophenol	µg/L	<	5.5									
Group 5	Acenaphthene	µg/L	<	0.27									
	Acenaphthylene	µg/L	<	0.22									
	Anthracene	µg/L	<	0.27									
	Benzidine	µg/L	<	6.9									
	Benzo(a)Anthracene	µg/L	<	0.25									
	Benzo(a)Pyrene	µg/L	<	0.27									
	3,4-Benzofluoranthene	µg/L	<	0.3									
	Benzo(ghi)Perylene	µg/L	<	0.32									
	Benzo(k)Fluoranthene	µg/L	<	0.22									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.54									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.54									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.54									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	1.1									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.54									
	Butyl Benzyl Phthalate	µg/L	<	1.1									
	2-Chloronaphthalene	µg/L	<	1.1									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.54									
	Chrysene	µg/L	<	0.22									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.32									
	1,2-Dichlorobenzene	µg/L	<	0.54									
	1,3-Dichlorobenzene	µg/L	<	0.54									
	1,4-Dichlorobenzene	µg/L	<	0.54									
	3,3-Dichlorobenzidine	µg/L	<	0.86									
	Diethyl Phthalate	µg/L	<	0.54									
	Dimethyl Phthalate	µg/L	<	0.58									
	Di-n-Butyl Phthalate	µg/L	<	1.2									
	2,4-Dinitrotoluene	µg/L	<	0.54									

	2,6-Dinitrotoluene	µg/L	<	0.54									
	Di-n-Octyl Phthalate	µg/L	<	0.55									
	1,2-Diphenylhydrazine	µg/L	<	5.5									
	Fluoranthene	µg/L	<	0.23									
	Fluorene	µg/L	<	0.23									
	Hexachlorobenzene	µg/L	<	0.58									
	Hexachlorobutadiene	µg/L	<	0.23									
	Hexachlorocyclopentadiene	µg/L	<	3.2									
	Hexachloroethane	µg/L	<	0.54									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.32									
	Isophorone	µg/L	<	0.54									
	Naphthalene	µg/L	<	0.32									
	Nitrobenzene	µg/L	<	0.54									
	n-Nitrosodimethylamine	µg/L	<	0.54									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.54									
	n-Nitrosodiphenylamine	µg/L	<	0.54									
	Phenanthrene	µg/L	<	0.22									
	Pyrene	µg/L	<	0.25									
	1,2,4-Trichlorobenzene	µg/L	<	0.3									
Group 6	Aldrin	µg/L	<	0.011									
	alpha-BHC	µg/L	<	0.034									
	beta-BHC	µg/L	<	0.0494									
	gamma-BHC	µg/L	<	0.011									
	delta BHC	µg/L	<	0.034									
	Chlordane	µg/L	<	0.57									
	4,4-DDT	µg/L	<	0.023									
	4,4-DDE	µg/L	<	0.045									
	4,4-DDD	µg/L	<	0.022									
	Dieldrin	µg/L	<	0.022									
	alpha-Endosulfan	µg/L		0.0056									
	beta-Endosulfan	µg/L	<	0.022									
	Endosulfan Sulfate	µg/L	<	0.022									
	Endrin	µg/L	<	0.0215									
	Endrin Aldehyde	µg/L	<	0.021									
	Heptachlor	µg/L	<	0.0215									
	Heptachlor Epoxide	µg/L	<	0.0107									
	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	<	0.4									
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Stream / Surface Water Information

Hatfield Twp STP, NPDES Permit No. PA0026247, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **West Branch Neshaminy Creek**

No. Reaches to Model: **1**

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

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	002868	2.8	264	17			Yes
End of Reach 1	002868	0	245	19.8			Yes

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

Location	RMI	LFY (cfs/mi²)*	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	2.8	0.1	1.12									168	7		
End of Reach 1	0	0.1	1.304												

Q_h

Location	RMI	LFY (cfs/mi²)	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	2.8														
End of Reach 1	0														

Model Results

Hatfield Twp STP, NPDES Permit No. PA0026247, Outfall 001

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

☐ *Hydrodynamics*

☑ *Wasteload Allocations*

☑ *AFC* CCT (min): 0.848 PMF: 1 Analysis Hardness (mg/l): 154.41 Analysis pH: 7.18

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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	828	
Total Antimony	0	0		0	1,100	1,100	1,214	
Total Arsenic	0	0		0	340	340	375	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	23,178	
Total Boron	0	0		0	8,100	8,100	8,940	
Total Cadmium	0	0		0	3.072	3.32	3.66	Chem Translator of 0.926 applied
Total Chromium (III)	0	0		0	813.240	2,574	2,840	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	18.0	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	105	
Total Copper	0	0		0	121.420	126	140	Chem Translator of 0.96 and Criteria Modifier of 6 applied
Free Cyanide	0	0		0	22	22.0	24.3	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	103.291	142	157	Chem Translator of 0.728 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.82	Chem Translator of 0.85 applied
Total Nickel	0	0		0	676.212	678	748	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	6.791	7.99	8.82	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	71.7	
Total Zinc	0	0		0	169.324	173	191	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.31	

Acrylonitrile	0	0		0	650	650	717	
Benzene	0	0		0	640	640	706	
Bromoform	0	0		0	1,800	1,800	1,987	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,090	
Chlorobenzene	0	0		0	1,200	1,200	1,324	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	19,867	
Chloroform	0	0		0	1,900	1,900	2,097	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	16,556	
1,1-Dichloroethylene	0	0		0	7,500	7,500	8,278	
1,2-Dichloropropane	0	0		0	11,000	11,000	12,141	
1,3-Dichloropropylene	0	0		0	310	310	342	
Ethylbenzene	0	0		0	2,900	2,900	3,201	
Methyl Bromide	0	0		0	550	550	607	
Methyl Chloride	0	0		0	28,000	28,000	30,904	
Methylene Chloride	0	0		0	12,000	12,000	13,245	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,104	
Tetrachloroethylene	0	0		0	700	700	773	
Toluene	0	0		0	1,700	1,700	1,876	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	7,505	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,311	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	3,753	
Trichloroethylene	0	0		0	2,300	2,300	2,539	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	618	
2,4-Dichlorophenol	0	0		0	1,700	1,700	1,876	
2,4-Dimethylphenol	0	0		0	660	660	728	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	88.3	
2,4-Dinitrophenol	0	0		0	660	660	728	
2-Nitrophenol	0	0		0	8,000	8,000	8,830	
4-Nitrophenol	0	0		0	2,300	2,300	2,539	
p-Chloro-m-Cresol	0	0		0	160	160	177	
Pentachlorophenol	0	0		0	10.419	10.4	11.5	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	508	
Acenaphthene	0	0		0	83	83.0	91.6	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	331	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.55	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	33,112	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	4,967	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	298	
Butyl Benzyl Phthalate	0	0		0	140	140	155	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	905	
1,3-Dichlorobenzene	0	0		0	350	350	386	
1,4-Dichlorobenzene	0	0		0	730	730	806	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,415	
Dimethyl Phthalate	0	0		0	2,500	2,500	2,759	
Di-n-Butyl Phthalate	0	0		0	110	110	121	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,766	
2,6-Dinitrotoluene	0	0		0	990	990	1,093	
1,2-Diphenylhydrazine	0	0		0	15	15.0	16.6	
Fluoranthene	0	0		0	200	200	221	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	11.0	
Hexachlorocyclopentadiene	0	0		0	5	5.0	5.52	
Hexachloroethane	0	0		0	60	60.0	66.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	11,037	
Naphthalene	0	0		0	140	140	155	
Nitrobenzene	0	0		0	4,000	4,000	4,415	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	18,763	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	331	
Phenanthrene	0	0		0	5	5.0	5.52	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	143	
Aldrin	0	0		0	3	3.0	3.31	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	1.05	
Chlordane	0	0		0	2.4	2.4	2.65	
4,4-DDT	0	0		0	1.1	1.1	1.21	
4,4-DDE	0	0		0	1.1	1.1	1.21	
4,4-DDD	0	0		0	1.1	1.1	1.21	
Dieldrin	0	0		0	0.24	0.24	0.26	
alpha-Endosulfan	0	0		0	0.22	0.22	0.24	
beta-Endosulfan	0	0		0	0.22	0.22	0.24	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.095	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	0.57	
Heptachlor Epoxide	0	0		0	0.5	0.5	0.55	
Toxaphene	0	0		0	0.73	0.73	0.81	

☑ *CFC* CCT (min): 0.848 PMF: 1 Analysis Hardness (mg/l): 154.41 Analysis pH: 7.18

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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	243	
Total Arsenic	0	0		0	150	150	166	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	4,525	
Total Boron	0	0		0	1,600	1,600	1,766	
Total Cadmium	0	0		0	0.333	0.37	0.41	Chem Translator of 0.891 applied
Total Chromium (III)	0	0		0	105.786	123	136	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	11.5	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	21.0	
Total Copper	0	0		0	77.889	81.1	89.5	Chem Translator of 0.96 and Criteria Modifier of 6 applied
Free Cyanide	0	0		0	5.2	5.2	5.74	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	1,656	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	4.025	5.53	6.11	Chem Translator of 0.728 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.	Chem Translator of 0.85 applied
Total Nickel	0	0		0	75.106	75.3	83.1	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	5.51	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	14.3	
Total Zinc	0	0		0	170.709	173	191	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	3.31	
Acrylonitrile	0	0		0	130	130	143	
Benzene	0	0		0	130	130	143	
Bromoform	0	0		0	370	370	408	
Carbon Tetrachloride	0	0		0	560	560	618	
Chlorobenzene	0	0		0	240	240	265	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	3,863	
Chloroform	0	0		0	390	390	430	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	3,422	
1,1-Dichloroethylene	0	0		0	1,500	1,500	1,656	
1,2-Dichloropropane	0	0		0	2,200	2,200	2,428	
1,3-Dichloropropylene	0	0		0	61	61.0	67.3	
Ethylbenzene	0	0		0	580	580	640	
Methyl Bromide	0	0		0	110	110	121	
Methyl Chloride	0	0		0	5,500	5,500	6,070	

Methylene Chloride	0	0		0	2,400	2,400	2,649	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	232	
Tetrachloroethylene	0	0		0	140	140	155	
Toluene	0	0		0	330	330	364	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	1,545	
1,1,1-Trichloroethane	0	0		0	610	610	673	
1,1,2-Trichloroethane	0	0		0	680	680	751	
Trichloroethylene	0	0		0	450	450	497	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	121	
2,4-Dichlorophenol	0	0		0	340	340	375	
2,4-Dimethylphenol	0	0		0	130	130	143	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	17.7	
2,4-Dinitrophenol	0	0		0	130	130	143	
2-Nitrophenol	0	0		0	1,600	1,600	1,766	
4-Nitrophenol	0	0		0	470	470	519	
p-Chloro-m-Cresol	0	0		0	500	500	552	
Pentachlorophenol	0	0		0	7.994	7.99	8.82	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	100	
Acenaphthene	0	0		0	17	17.0	18.8	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	65.1	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.11	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	6,622	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,004	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	59.6	
Butyl Benzyl Phthalate	0	0		0	35	35.0	38.6	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	177	
1,3-Dichlorobenzene	0	0		0	69	69.0	76.2	
1,4-Dichlorobenzene	0	0		0	150	150	166	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	883	
Dimethyl Phthalate	0	0		0	500	500	552	
Di-n-Butyl Phthalate	0	0		0	21	21.0	23.2	
2,4-Dinitrotoluene	0	0		0	320	320	353	
2,6-Dinitrotoluene	0	0		0	200	200	221	
1,2-Diphenylhydrazine	0	0		0	3	3.0	3.31	

Fluoranthene	0	0		0	40	40.0	44.1	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	2.21	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.1	
Hexachloroethane	0	0		0	12	12.0	13.2	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	2,318	
Naphthalene	0	0		0	43	43.0	47.5	
Nitrobenzene	0	0		0	810	810	894	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	3,753	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	65.1	
Phenanthrene	0	0		0	1	1.0	1.1	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	28.7	
Aldrin	0	0		0	0.1	0.1	0.11	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.005	
4,4-DDT	0	0		0	0.001	0.001	0.001	
4,4-DDE	0	0		0	0.001	0.001	0.001	
4,4-DDD	0	0		0	0.001	0.001	0.001	
Dieldrin	0	0		0	0.056	0.056	0.062	
alpha-Endosulfan	0	0		0	0.056	0.056	0.062	
beta-Endosulfan	0	0		0	0.056	0.056	0.062	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.04	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.004	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.004	
Toxaphene	0	0		0	0.0002	0.0002	0.0002	

☑ ***THH*** CCT (min): 0.848 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	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	6.18	
Total Arsenic	0	0		0	10	10.0	11.0	
Total Barium	0	0		0	2,400	2,400	2,649	

Total Boron	0	0		0	3,100	3,100	3,422	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	4	4.0	4.41	
Dissolved Iron	0	0		0	300	300	331	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,104	
Total Mercury	0	0		0	0.050	0.05	0.055	
Total Nickel	0	0		0	610	610	673	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	0.26	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	3.31	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	110	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	36.4	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	75.1	
Methyl Bromide	0	0		0	100	100.0	110	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	62.9	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	110	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	11,037	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	33.1	

2,4-Dichlorophenol	0	0		0	10	10.0	11.0	
2,4-Dimethylphenol	0	0		0	100	100.0	110	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	2.21	
2,4-Dinitrophenol	0	0		0	10	10.0	11.0	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	4,415	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	77.3	
Anthracene	0	0		0	300	300	331	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	221	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.11	
2-Chloronaphthalene	0	0		0	800	800	883	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,104	
1,3-Dichlorobenzene	0	0		0	7	7.0	7.73	
1,4-Dichlorobenzene	0	0		0	300	300	331	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	662	
Dimethyl Phthalate	0	0		0	2,000	2,000	2,207	
Di-n-Butyl Phthalate	0	0		0	20	20.0	22.1	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	22.1	
Fluorene	0	0		0	50	50.0	55.2	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	4.41	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	37.5	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	11.0	

n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	22.1	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.077	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	4.2	4.2	4.64	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	22.1	
beta-Endosulfan	0	0		0	20	20.0	22.1	
Endosulfan Sulfate	0	0		0	20	20.0	22.1	
Endrin	0	0		0	0.03	0.03	0.033	
Endrin Aldehyde	0	0		0	1	1.0	1.1	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ *CRL* CCT (min): 13.158 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	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	

Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.11	
Benzene	0	0		0	0.58	0.58	1.02	
Bromoform	0	0		0	7	7.0	12.3	
Carbon Tetrachloride	0	0		0	0.4	0.4	0.7	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	1.41	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	10.0	
Dichlorobromomethane	0	0		0	0.95	0.95	1.67	
1,2-Dichloroethane	0	0		0	9.9	9.9	17.4	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	1.58	
1,3-Dichloropropylene	0	0		0	0.27	0.27	0.48	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	35.2	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.35	
Tetrachloroethylene	0	0		0	10	10.0	17.6	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	0.97	
Trichloroethylene	0	0		0	0.6	0.6	1.06	
Vinyl Chloride	0	0		0	0.02	0.02	0.035	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	0.053	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	2.64	

Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.0002	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.002	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0002	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.002	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.018	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.053	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	0.56	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.21	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0002	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	0.088	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	0.088	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.088	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.053	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.0001	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.018	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.18	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.002	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.001	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.009	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	5.81	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.000001	
alpha-BHC	0	0		0	0.0004	0.0004	0.0007	
beta-BHC	0	0		0	0.008	0.008	0.014	
gamma-BHC	0	0		0	N/A	N/A	N/A	

Chlordane	0	0		0	0.0003	0.0003	0.0005	
4,4-DDT	0	0		0	0.00003	0.00003	0.00005	
4,4-DDE	0	0		0	0.00002	0.00002	0.00004	
4,4-DDD	0	0		0	0.0001	0.0001	0.0002	
Dieldrin	0	0		0	0.000001	0.000001	0.000002	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.00001	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.00005	
Toxaphene	0	0		0	0.0007	0.0007	0.001	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Antimony	Report	Report	Report	Report	Report	µg/L	6.18	THH	Discharge Conc > 10% WQBEL (no RP)
Total Cadmium	Report	Report	Report	Report	Report	µg/L	0.41	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	89.5	CFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	0.26	0.4	4.41	6.89	11.0	µg/L	4.41	THH	Discharge Conc ≥ 50% WQBEL (RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	331	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	1,656	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Lead	Report	Report	Report	Report	Report	µg/L	6.11	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	5.51	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	173	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
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	750	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	11.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	2,649	µg/L	Discharge Conc ≤ 10% WQBEL

Total Beryllium	N/A	N/A	No WQS
Total Boron	1,766	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	136	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	11.5	µg/L	Discharge Conc < TQL
Total Cobalt	21.0	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Manganese	1,104	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.055	µg/L	Discharge Conc < TQL
Total Nickel	83.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	7.99	µg/L	Discharge Conc < TQL
Total Thallium	0.26	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.11	µg/L	Discharge Conc < TQL
Benzene	1.02	µg/L	Discharge Conc < TQL
Bromoform	12.3	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	0.7	µg/L	Discharge Conc < TQL
Chlorobenzene	110	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	1.41	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	3,863	µg/L	Discharge Conc < TQL
Chloroform	10.0	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	1.67	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	17.4	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	36.4	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	1.58	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	0.48	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	75.1	µg/L	Discharge Conc < TQL
Methyl Bromide	110	µg/L	Discharge Conc < TQL
Methyl Chloride	6,070	µg/L	Discharge Conc < TQL
Methylene Chloride	35.2	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	0.35	µg/L	Discharge Conc < TQL
Tetrachloroethylene	17.6	µg/L	Discharge Conc < TQL
Toluene	62.9	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	110	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	673	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	0.97	µg/L	Discharge Conc < TQL
Trichloroethylene	1.06	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.035	µg/L	Discharge Conc < TQL
2-Chlorophenol	33.1	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	11.0	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	110	µg/L	Discharge Conc < TQL

4,6-Dinitro-o-Cresol	2.21	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	11.0	µg/L	Discharge Conc < TQL
2-Nitrophenol	1,766	µg/L	Discharge Conc < TQL
4-Nitrophenol	519	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.053	µg/L	Discharge Conc < TQL
Phenol	4,415	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	2.64	µg/L	Discharge Conc < TQL
Acenaphthene	18.8	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	331	µg/L	Discharge Conc < TQL
Benzidine	0.0002	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.002	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0002	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.002	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.018	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.053	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	221	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	0.56	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	59.6	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.11	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	883	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.21	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0002	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	177	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichlorobenzene	7.73	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dichlorobenzene	166	µg/L	Discharge Conc ≤ 25% WQBEL
3,3-Dichlorobenzidine	0.088	µg/L	Discharge Conc < TQL
Diethyl Phthalate	662	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	552	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	22.1	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.088	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	0.088	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.053	µg/L	Discharge Conc < TQL
Fluoranthene	22.1	µg/L	Discharge Conc < TQL
Fluorene	55.2	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0001	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.018	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.1	µg/L	Discharge Conc < TQL
Hexachloroethane	0.18	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.002	µg/L	Discharge Conc < TQL

Isophorone	37.5	µg/L	Discharge Conc < TQL
Naphthalene	47.5	µg/L	Discharge Conc < TQL
Nitrobenzene	11.0	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.001	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.009	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	5.81	µg/L	Discharge Conc < TQL
Phenanthrene	1.1	µg/L	Discharge Conc < TQL
Pyrene	22.1	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.077	µg/L	Discharge Conc < TQL
Aldrin	0.000001	µg/L	Discharge Conc < TQL
alpha-BHC	0.0007	µg/L	Discharge Conc < TQL
beta-BHC	0.014	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.0005	µg/L	Discharge Conc < TQL
4,4-DDT	0.00005	µg/L	Discharge Conc < TQL
4,4-DDE	0.00004	µg/L	Discharge Conc < TQL
4,4-DDD	0.0002	µg/L	Discharge Conc < TQL
Dieldrin	0.000002	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.062	µg/L	Discharge Conc ≥ 25% WQBEL
beta-Endosulfan	0.062	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	22.1	µg/L	Discharge Conc < TQL
Endrin	0.033	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.1	µg/L	Discharge Conc < TQL
Heptachlor	0.00001	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.00005	µg/L	Discharge Conc < TQL
Toxaphene	0.0002	µg/L	Discharge Conc < TQL

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0
Latitude	40º 16' 33.00"	**Longitude**	-75º 15' 8.00"
Wastewater Description:	Stormwater		

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 16' 31.00"	**Longitude**	-75º 15' 7.00"
Wastewater Description:	Stormwater		

Outfall No.	004	**Design Flow (MGD)**	0
Latitude	40º 16' 28.00"	**Longitude**	-75º 15' 8.00"
Wastewater Description:	Stormwater		

The current stormwater parameters pH, CBOD5, COD, TSS, Oil & Grease, Fecal Coliform, TKN, TP and Dissolved Iron are recommended to continue for the stormwater outfalls 002, 003 and 004. For TSS and COD, benchmark values are also incorporated in Part C condition in the draft permit.

Whole Effluent Toxicity (WET)

For Outfall 001, ☐ **Acute** ☒ **Chronic** WET Testing was completed:

☐ For the permit renewal application (4 tests).
☐ Quarterly throughout the permit term.
☐ Quarterly throughout the permit term and a TIE/TRE was conducted.
☒ Other: Annually according to the current permit

The dilution series used for the tests was: 100%, 96%, 91%, 46%, and 23%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 91%.

WET Summary and Evaluation

Facility Name	Hatfield Twp STP
Permit No.	PA0026247
Design Flow (MGD)	6.98
Q_{7-10} Flow (cfs)	1.12
PMF_a	1
PMF_c	1

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	Endpoint	9/4/18	7/23/19	7/21/20220	8/17/21
Pimephales	Growth	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	Endpoint	9/4/18	7/23/19	7/21/20	8/17/21
Pimephales	Survival	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	Endpoint	9/3/18	7/23/19	8/25/20	8/17/21
Ceriodaphnia	Survival	Pass	Pass	Pass	Pass

		Test Results (Pass/Fail)			
		Test Date	Test Date	Test Date	Test Date
Species	Endpoint	9/3/18	7/23/19	8/25/20	8/17/21
Ceriodaphnia	Reproduction	Pass	Pass	Pass	Pass

Reasonable Potential? NO

Permit Recommendations

Test Type	Chronic
TIWC	91 % Effluent
Dilution Series	23, 46, 91, 96, 100 % Effluent
Permit Limit	None
Permit Limit Species	

Based on the review of the WET test reports, test of significant toxicity (TST) was performed using DEP's WET Analysis Spreadsheet. There is no reasonable potential, and no WET limits are recommended. The standard WET condition based on the DEP WET SOP is incorporated in Part C of the draft permit.

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	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	6.0 Inst Min	XXX	XXX	XXX	1/day	Grab
CBOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
CBOD5 Nov 1 - Apr 30	1073	1609	XXX	18	27 Wkly Avg	36	1/day	24-Hr Composite
CBOD5 May 1 - Oct 31	536	804	XXX	9.1	14 Wkly Avg	18	1/day	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
TSS	1746	2620	XXX	30	45 Wkly Avg	60	1/day	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	1/day	24-Hr Composite
Total Dissolved Solids	58213	XXX	XXX	1000	XXX	1500	1/week	24-Hr Composite
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	200 Geo Mean	XXX	1000	4/week	Grab
E. Coli (No./100 ml)						Report	1/month	Grab
UV Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/day	Measured
Nitrate-Nitrite Nov 1 - Jun 30	Report	XXX	XXX	Report	XXX	XXX	1/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	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Nitrate-Nitrite Jul 1 - Oct 31	483	XXX	XXX	8.2	XXX	16.4	1/day	24-Hr Composite
Total Nitrogen	Report	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Ammonia Nov 1 - Apr 30	322	XXX	XXX	5.5	XXX	11	1/day	24-Hr Composite
Ammonia May 1 - Oct 31	107	XXX	XXX	1.8	XXX	3.6	1/day	24-Hr Composite
TKN	Report	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Phosphorus Nov 1 - Mar 31	58	XXX	XXX	1.0	XXX	2	1/day	24-Hr Composite
Total Phosphorus Apr 1 - Oct 31	43	XXX	XXX	0.74	XXX	1.48	1/day	24-Hr Composite
Total Antimony	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Cadmium	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Copper	Report	Report Daily Max	XXX	Report	Report	XXX	1/week	24-Hr Composite
Free Cyanide	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Iron	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Lead	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Total Selenium	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Sulfate	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Zinc	XXX	XXX	XXX	Report	XXX	XXX	1/month	24-Hr Composite
Chloride	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	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	Daily Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Bromide	XXX	XXX	XXX	Report Avg Qrtly	XXX	XXX	1/quarter	24-Hr Composite
Total Hardness	XXX	XXX	XXX	Report	XXX	XXX	1/month	Grab
Chronic WET - Ceriodaphnia Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Ceriodaphnia Reproduction (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Survival (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite
Chronic WET - Pimephales Growth (TUc)	XXX	XXX	XXX	XXX	Report	XXX	See Permit	24-Hr Composite

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 002, 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	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

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 003, 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	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab

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 004, 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	Average Weekly	Minimum	Annual Average	Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
CBOD5	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
COD	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TSS	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Oil and Grease	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Fecal Coliform (No./100 ml)	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab
Dissolved Iron	XXX	XXX	XXX	Report	XXX	XXX	1/year	Grab