

Application Type Renewal
 Facility Type Municipal
 Major / Minor Major

**NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE**

Application No. PA0024406
 APS ID 1062853
 Authorization ID 1395409

Applicant and Facility Information

Applicant Name	<u>Mount Carmel Municipal Authority</u>	Facility Name	<u>MCMA WWTF</u>
Applicant Address	<u>137 West Fourth Street</u> <u>Mount Carmel, PA 17851-0365</u>	Facility Address	<u>657 Brennans Farm Road</u> <u>Kulpmont, PA 17834</u>
Applicant Contact	<u>Robert Shirmer</u>	Facility Contact	<u>Thomas Gallagher</u>
Applicant Phone	<u>570-339-5166</u>	Facility Phone	<u>570-339-5166</u>
Client ID	<u>94508</u>	Site ID	<u>264784</u>
Ch 94 Load Status	<u>Not Overloaded</u>	Municipality	<u>Mount Carmel Township</u>
Connection Status	<u>No Limitations</u>	County	<u>Northumberland</u>
Date Application Received	<u>May 04, 2022</u>	EPA Waived?	<u>No</u>
Date Application Accepted	<u>May 26, 2022</u>	If No, Reason	<u>Major Facility, Significant CB Discharge</u>
Purpose of Application	<u>Renewal of NPDES permit</u>		

Summary of Review

INTRODUCTION

The Mount Carmel Municipal Authority (MCMA) has applied to renew its existing NPDES permit which authorizes the discharge of treated wastewater from the wastewater treatment facility (WWTF) in Mount Carmel Township, Northumberland County.

APPLICATION

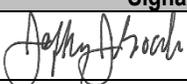
Entech Engineering, Inc. (Entech), the application consultant, submitted the *NPDES Application for Individual Permit to Discharge Sewage Effluent for Major Sewage Facilities* (DEP #3800-PM-BCW0009b) on behalf of the MCMA. This application was received by the Department on May 04, 2022 and considered administratively complete on May 26, 2022. Robert Shirmer, MCMA Chairman, is the Client Contact. His additional contact information is (email) rshirmer123@yahoo.com. The site contact is Thomas Gallagher, Plant Foreman. His additional contact information is (email) tgal75@ptd.net. The Entech contact is Natalie O'Connor, Project Manager. Her contact information is (phone) 570-628-5655 and (email) noconnor@entecheng.com.

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.

The case file, permit application package and draft permit will be available for public review at Department's Northcentral Regional Office. The address for this office is 208 West Third Street, Suite 101, Williamsport, PA 17701. An appointment can be made to review these materials during the comment period by calling the file coordinator at 570-327-3636.

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Approve	Deny	Signatures		Date
X		Jeffrey J. Gocek, EIT	 Project Manager	04/16/2024
X		Nicholas W. Hartranft, PE	 Environmental Engineer Manager	04/16/2024

DISCHARGE, RECEIVING WATERS AND WATER SUPPLY INFORMATION

Outfall No.	<u>001</u>	Design Flow (MGD)	<u>2.25</u>
Latitude	<u>40° 47' 15.41"</u>	Longitude	<u>-76° 26' 59.45"</u>
Quad Name	<u>Mount Carmel</u>	Quad Code	<u>40076</u>
Wastewater Description: <u>Treated Domestic Wastewater</u>			
Receiving Waters	<u>Shamokin Creek (WWF)</u>	Stream Code	<u>18489</u>
NHD Com ID	<u>54962549</u>	RMI	<u>29.5</u>
Drainage Area	<u>14.0</u>	Yield (cfs/mi ²)	<u>0.4059</u>
Q ₇₋₁₀ Flow (cfs)	<u>5.683</u>	Q ₇₋₁₀ Basis	<u>USGS Gage #01554500</u>
Elevation (ft)	<u>1036</u>	Slope (ft/ft)	<u>N/A</u>
Watershed No.	<u>6-B</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u>None</u>	Existing Use Qualifier	<u>N/A</u>
Exceptions to Use	<u>N/A</u>	Exceptions to Criteria	<u>None</u>
Assessment Status	<u>Impaired</u>		
Cause(s) of Impairment	<u>Metals</u>		
Source(s) of Impairment	<u>Acid Mine Drainage</u>		
TMDL Status	<u>Final</u>	Name	<u>Shamokin Creek Watershed</u>
Nearest Downstream Public Water Supply Intake		<u>United PA Water of Harrisburg</u>	
PWS Waters	<u>Susquehanna River</u>	Flow at Intake (cfs)	<u>2,389</u>
PWS RMI	<u>76.5</u>	Distance from Outfall (mi)	<u>62</u>

Q_{7,10} DETERMINATION

The Q_{7,10} is the lowest seven consecutive days of flow in a 10-year period and is used for modeling wastewater treatment plant discharges. 25 PA § 96.1 defines Q_{7,10} as "the actual or estimated lowest 7 consecutive day average flow that occurs once in 10 years for a stream with unregulated flow, or the estimated minimum flow for a stream with regulated flow".

A nearby downstream gage, "Shamokin Creek near Shamokin, PA" (USGS #01554500) was selected as a reference gage. A Q_{7,10} flow for that gage was obtained from "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania" (USGS Open Files Report 2011-1070). Knowing the drainage area at the discharge (14.0 mi²) and both the drainage area (54.2 mi²) and Q_{7,10} (22.0 CFS) at the reference gage, the Q_{7,10} at the discharge was calculated to be 5.68 CFS.

See Attachment 01 for the Q_{7,10} determination.

TREATMENT FACILITY SUMMARY

The MCMA WWTF serves Mount Carmel Borough, Northumberland County (89.88% of total flow), parts of Mount Carmel Township, Northumberland County (6.19%) and portions of Cunningham Township, Columbia County (3.93%).

See Attachment 02 for a map of the wastewater treatment plant (WWTP) location.

This plant was designed and built to address hydraulic overloads, poor site conditions, compliance with EPA/DEP CSO policies, NPDES permit requirements, compliance with the Chesapeake Bay TMDL and future growth.

The WWTP consists of coarse and fine screening, a raw sewage pump station, a grit removal system, an *Intermittent Cycle Extended Aeration System* (ICEAS) *Sequencing Batch Reactor* (SBR) tertiary system, ultraviolet (UV) disinfection, aerobic digestion, sludge dewatering (belt filter press) and outfall. The SBR tanks incorporate pre-thickened aerobic digestion (with a gravity thickening system). The ICEAS SBR system provides the flexibility to handle peak flows, achieve necessary effluent quality and provide required nutrient removal. The MCMA collection system was formerly a combined sewer system with associated combined sewer overflow (CSO) discharges. These have all been removed from the system during the upgrades to both the stormwater and wastewater collection systems.

The WWTF characteristics are as follows.

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Tertiary	ICEAS SBR	Ultraviolet	2.25
Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
2.25	4,691	Not Overloaded	Aerobic Digestion	Class B/Landfill

See Attachment 03 for the treatment flow diagram.

The plant’s design hydraulic capacity is 2.25 MGD. The annual average flow, for the 12 months prior to application submission, was 1.101 MGD. The organic design capacity is 4,691 lb BOD5/day.

The MCMA collection system has historically been a combined sewer system, with the plant suffering hydraulic overloads during peak precipitation events. The previous facility, which had reached the end of its useful life, was a 1.5 MGD contact stabilization WWTP constructed in 1975. To provide adequate treatment, especially during peak hydraulic flows, a three-phase construction project was completed. Phase I, authorized by Water Quality Management (WQM) permit #4905404 (issued January 2006) consisted of the construction of a mile of new interceptor, as well as the separation of more than two miles of combined sanitary and storm sewers. Phase II, authorized by WQM permit #4906402 (issued February 2007) consisted of the construction of two miles of new interceptor, as well as the separation of almost two miles of combined sanitary and storm sewers. Phase III, authorized by WQM permit #4908401, consisted of the construction of the 2.25 MGD ICEAS SBR WWTP. The last remaining combined sewer overflows (CSOs) were permanently sealed in 2011.

Industrial users within the collection system include International Paper and PACTIV Corporation. These users are not considered significant industrial users (SIUs) by the MCMA. The MCMA suspects Pactiv as the source of Bis(2-Ethylhexyl)Phthalate in the collection system.

Wasted sludge is aerobically digested and dewatered through the belt filter press. Dewatered sludge is hauled to the Lycoming County Landfill. Class B biosolids are produced at the WWTF. 53.02 dry tons of sludge/biosolids were produced in the year previous to the application submission.

COMPLIANCE HISTORY

The WMS Query *Open Violations by Client* query revealed no unaddressed violations for the MCMA.

The most recent Department inspection, a compliance evaluation inspection (CEI), was conducted December 12, 2023. All required treatment units were online and operational at the time of the inspection. No problems were noted in the receiving stream, at or downstream of the discharge. An effluent violation for Fecal Coliforms IMAX during the month of March 2023 was noted.

A Chesapeake Bay (CBAY) inspection was performed by the Department on December 14, 2023. During the 2022-2023 Water Year, MCMA did not exceed nutrient caploads and sold 1,774 nitrogen credits. MCMA utilized 7,300 pounds of Total Nitrogen offsets to calculate the net nitrogen load.

Recent Discharge Monitoring Reports (DMRs), from February 2023 through January 2024, is presented in the table below.

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Parameter	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23	MAR-23	FEB-23
Flow (MGD)												
Average Monthly	1.6417	1.189	0.573	0.84	1.2143	0.9818	1.4311	0.7886	0.7522	0.8125	0.8738	0.7744
Flow (MGD)												
Daily Maximum	6.3757	6.4118	1.99	2.01	2.5827	3.4712	3.8418	1.9801	2.4965	3.6990	2.8714	1.0664
pH (S.U.)												
Minimum	6.37	6.33	6.38	6.38	6.45	6.49	6.42	6.49	6.40	6.35	6.3	6.30
pH (S.U.)												
IMAX	6.75	6.76	6.78	6.81	6.86	6.89	6.78	6.77	6.79	6.72	6.53	6.56
DO (mg/L)												
Minimum	6.21	6.24	6.23	6.27	6.30	6.29	6.20	6.30	6.15	6.24	6.27	6.24
CBOD5 (lbs/day)												
Average Monthly	< 39	< 18	< 9	< 27	< 16	< 18	< 26	< 14	< 15	13	17	< 13
CBOD5 (lbs/day)												
Weekly Average	113	< 23	14	< 81	< 21	38	45	< 23	< 27	19	18	< 19
CBOD5 (mg/L)												
Average Monthly	< 2.4	< 2.0	< 2.00	< 4.5	< 1.9	< 1.9	< 1.95	< 2.2	< 2.3	2.6	2.7	< 1.9
CBOD5 (mg/L)												
Weekly Average	3.00	< 2.2	2.40	< 12.8	< 2.2	2.1	< 2.4	2.4	3.1	3.4	3.2	< 2.6
BOD5 (lbs/day)												
Raw Influent Average Monthly	4728	1583	750	1108	1285	1122	1745	1483	1195	540	2117	3109
BOD5 (lbs/day)												
Raw Influent Daily Maximum	17954	2298	1268	1772	2127	1830	2578	2520	1577	689	3662	4079
BOD5 (mg/L)												
Raw Influent Average Monthly	215	203	185	203	155	130	169	228	198	110	308	508
TSS (lbs/day)												
Average Monthly	< 68	< 36.0	< 18	< 23	< 33	< 38	< 52	< 27	< 29	< 23	< 27	< 28
TSS (lbs/day)												
Raw Influent Average Monthly	7520	2203	1091	1772	2536	1469	2274	2154	1554	464	1985	5441
TSS (lbs/day)												
Raw Influent Daily Maximum	29087	4280	2223	3156	6032	3016	4430	3988	2315	700	3251	14323
TSS (lbs/day)												
Weekly Average	< 207	< 51.0	< 24	< 26	< 39	< 80	< 95	< 44	< 49	27	< 32	< 33
TSS (mg/L)												
Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 5.0	< 5.0	< 4.0	< 4.0
TSS (mg/L)												
Raw Influent Average Monthly	344	298	257	328	278	176	195	313	270	94	290	903
TSS (mg/L)												
Weekly Average	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 5.0	< 4.0	< 7.0	5.0	5.0	< 5.0
Fecal Coliform (No./100 ml) Geometric Mean	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 7.0	< 15	< 2.0
Fecal Coliform (No./100 ml) IMAX	2.0	< 59.1	12.2	< 1	1.0	10.9	6.3	< 1.0	16.0	1046.2	> 2419.6	224.7
UV Transmittance (%)												
Minimum	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70
Nitrate-Nitrite (mg/L)												
Average Monthly	< 2.16	< 3.3	< 1.91	< 1.18	< 3.17	< 2.73	< 2.17	< 2.24	< 0.85	< 0.58	< 0.66	< 1.69
Nitrate-Nitrite (lbs)												
Total Monthly	< 1000.0	< 812.0	< 257	< 212	< 813	< 651	< 973	< 404	< 195	< 86	< 136	< 292
Total Nitrogen (mg/L)												
Average Monthly	< 3.55	< 4.84	< 3.29	< 2.21	< 4.33	< 4.28	< 3.24	< 3.83	< 2.1	< 2.52	< 2.36	< 2.95
Total Nitrogen (lbs)												
Effluent Net Total Monthly	< 1853	1274	< 437	< 396	< 1100	< 1066	< 1387	< 724	< 439	< 382	< 471	< 517
Total Nitrogen (lbs)												
Total Monthly	< 1853	< 1274.0	< 437	< 396	< 1100	< 1066	< 1387	< 724	< 439	< 382	< 471	< 517
Total Nitrogen (lbs)												
Effluent Net Total Annual					< 7198							
Total Nitrogen (lbs)												
Total Annual					< 10382							
Ammonia (lbs/day)												
Average Monthly	< 4.0	< 5.0	< 0.5	< 0.7	< 2.0	< 2	< 7.0	< 1.0	< 0.7	< 2	< 2.0	< 0.9
Ammonia (lbs/day)												
Weekly Average	< 8.0	12.0	0.60	< 0.7	3.0	< 4	< 21.0	< 3.0	< 1	< 3	3.0	2.0
Ammonia (mg/L)												
Average Monthly	< 0.27	< 0.49	< 0.12	< 0.12	< 0.21	< 0.17	< 0.39	< 0.20	< 0.1	< 0.3	< 0.26	< 0.14
Ammonia (mg/L)												
Weekly Average	0.52	0.96	0.15	< 0.1	0.34	< 0.3	< 0.81	< 0.30	< 0.2	< 0.6	0.56	< 0.23
Ammonia (lbs)												
Total Monthly	< 117.0	< 159.0	< 16	< 21	< 56	< 50	< 227	< 43	< 23	< 46	< 52	< 24
Ammonia (lbs)												
Total Annual					< 1091							
TKN (mg/L)												
Average Monthly	< 1.4	< 1.5	< 1.4	< 1	< 1.2	< 1.6	< 1.1	< 1.6	< 1.3	1.9	1.7	< 1.3
TKN (lbs)												
Total Monthly	< 852.0	< 462.0	< 180	< 185	< 286	< 416	< 413	< 320	< 244	297	334	< 225

Total Phosphorus (lbs/day) Average Monthly	19.0	11.0	12	9	12	11	13	15	10	10	355	12
Total Phosphorus (mg/L) Average Monthly	1.10	0.98	2.50	1.57	1.54	1.32	1.33	2.4	1.82	2	1.8	1.92
Total Phosphorus (lbs) Effluent Net Total Monthly	579	217	345	278	348	335	408	456	308	295	355	335
Total Phosphorus (lbs) Total Monthly	579	217	345	278	348	335	408	456	308	295	355	335
Total Phosphorus (lbs) Effluent Net Total Annual					4707							
Total Phosphorus (lbs) Total Annual					4707							
Total Aluminum (lbs/day) Annual Average		0.169										
Total Aluminum (lbs/day) Daily Maximum		0.169										
Total Aluminum (mg/L) Annual Average		0.022										
Total Aluminum (mg/L) Daily Maximum		0.022										
Total Iron (lbs/day) Annual Average		< 0.385										
Total Iron (lbs/day) Daily Maximum		< 0.385										
Total Iron (mg/L) Annual Average		< 0.05										
Total Iron (mg/L) Daily Maximum		< 0.05										
Total Manganese (lbs/day) Annual Average		0.192										
Total Manganese (lbs/day) Daily Maximum		0.192										
Total Manganese (mg/L) Annual Average		0.025										
Total Manganese (mg/L) Daily Maximum		0.025										
Total Zinc (lbs/day) Average Monthly	1.00	0.90	0.30	0.30	0.30	0.50	0.600	0.40	0.400	0.50	0.60	0.60
Total Zinc (lbs/day) Daily Maximum	4.00	0.90	0.40	0.30	0.40	1.00	1.00	0.50	0.600	0.50	0.70	0.60
Total Zinc (ug/L) Average Monthly	0.000074	0.065	0.074	49	43	47	40	58	72	97	86	91
Total Zinc (ug/L) Daily Maximum	0.000086	0.072	0.085	55	64	55	48	69	89	110	89	110
4,4-DDE (lbs/day) Average Quarterly		< 0.0005			< 0.0005			< 0.0004			< 0.0003	
4,4-DDE (lbs/day) Daily Maximum		< 0.0005			< 0.0005			< 0.0004			< 0.0003	
4,4-DDE (ug/L) Average Quarterly		< 0.000053			< 0.053			< 0.055			< 0.049	
4,4-DDE (ug/L) Daily Maximum		< 0.000053			< 0.053			< 0.055			< 0.049	
Aldrin (lbs/day) Average Quarterly		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
Aldrin (lbs/day) Daily Maximum		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
Aldrin (ug/L) Average Quarterly		< 0.000026			< 0.026			< 0.027			< 0.025	
Aldrin (ug/L) Daily Maximum		< 0.000026			< 0.026			< 0.027			< 0.025	
alpha-BHC (lbs/day) Average Quarterly		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
alpha-BHC (lbs/day) Daily Maximum		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
alpha-BHC (ug/L) Average Quarterly		< 0.000026			< 0.026			< 0.027			< 0.025	
alpha-BHC (ug/L) Daily Maximum		< 0.000026			< 0.026			< 0.027			< 0.025	
Bis(2-Ethyl-hexyl)Phthalate (lbs/day) Average Monthly	< 0.040	< 0.020	< 0.010	< 0.010	< 0.040	< 0.040	< 0.050	< 0.020	< 0.020	< 0.010	< 0.020	< 0.020
Bis(2-Ethyl-hexyl)Phthalate (lbs/day) Daily Maximum	< 0.100	< 0.040	0.010	< 0.020	0.040	< 0.080	< 0.090	< 0.030	< 0.040	< 0.020	< 0.020	< 0.020
Bis(2-Ethyl-hexyl)Phthalate (ug/L) Average Monthly	0.000002 6	< 0.0025	< 0.0027	< 2.600	< 4.700	< 4.300	< 3.200	< 2.700	< 2.600	< 2.670	< 2.600	< 2.600
Bis(2-Ethyl-hexyl)Phthalate (ug/L) Daily Maximum	0.000002 9	< 0.0026	0.0029	2.700	7.800	7.800	4.600	3.300	< 2.700	< 2.900	3.00	< 2.700

Heptachlor (lbs/day) Average Quarterly		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
Heptachlor (lbs/day) Daily Maximum		< 0.0002			< 0.0002			< 0.0002			< 0.0002	
Heptachlor (ug/L) Average Quarterly		< 0.000026			< 0.026			< 0.027			< 0.025	
Heptachlor (ug/L) Daily Maximum		< 0.000026			< 0.026			< 0.027			< 0.025	

The following are effluent limitation exceedances from July 2022 through May 2023.

Parameter	Date	SBC	DMR Value	Units	Limit Value
Fecal Coliform	03/31/23	IMAX	> 2,419.6	No./100 ml	10,000
Fecal Coliform	03/31/23	IMAX	> 2,419.6	No./100 ml	10,000

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EXISTING LIMITATIONS

The following limitations for Outfall 001 were established at the permit issuance on October 25, 2017.

Discharge Parameter	Mass Limits (lb/day)		Concentrations (mg/L unless noted)				Monitoring Requirements	
	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max					Continuous	Meter
pH			6.0			9.0	1/Day	Grab
Fecal Coliform (No./100mL) 05/01-09/30				200 Geo Mean		1,000	2/Week	Grab
Fecal Coliform (No./100mL) 10/01-04/30				2,000 Geo Mean		10,000	2/Week	Grab
BOD5 Raw Sewage Influent	Report	Report		Report			1/Week	24 Hour Comp
Total Suspended Solids Raw Sewage Influent	Report	Report		Report			1/Week	24 Hour Comp
CBOD5	465	750		25	40	50	2/Week	24 Hour Comp
Total Suspended Solids	560	840		30	45	60	2/Week	24 Hour Comp
UV Light Transmittance			Report				1/Day	Meter
Dissolved Oxygen			Report				1/Day	Grab
Ammonia-N 06/01-10/31	Report	Report		5.0	7.5	11	2/Week	24 Hour Comp
Ammonia-N 11/01-05/31	Report	Report		15	22.5	33	2/Week	24 Hour Comp
Total Zinc (µg/L)	3.50	5.63		200	300	400	1/Week	24 Hour Comp
Bis(2-Ethylhexyl) Pthalate (µg/L)	0.24	0.36		12.89	19.34	25.79	1/Week	24 Hour Comp
4,4-DDE (µg/L)	Report	Report Daily Max		Report Qtr Avg	Report Daily Max		1/Quarter	24 Hour Comp
Aldrin (µg/L)	Report	Report Daily Max		Report Qtr Avg	Report Daily Max		1/Quarter	24 Hour Comp
Alpha-BHC (µg/L)	Report	Report Daily Max		Report Qtr Avg	Report Daily Max		1/Quarter	24 Hour Comp
Heptachlor (µg/L)	Report	Report Daily Max		Report Qtr Avg	Report Daily Max		1/Quarter	24 Hour Comp
Total Aluminum	Report Annl Avg	Report Daily Max		Report Annl Avg	Report Daily Max		1/Year	24 Hour Comp
Total Iron	Report Annl Avg	Report Daily Max		Report Annl Avg	Report Daily Max		1/Year	24 Hour Comp
Total Manganese	Report Annl Avg	Report Daily Max		Report Annl Avg	Report Daily Max		1/Year	24 Hour Comp

Discharge Parameter	Mass Load (lb)		Concentrations (mg/L)			Monitoring Requirements	
	Monthly	Annual	Minimum	Monthly Average	Maximum	Minimum Measurement Frequency	Required Sample Type
Ammonia-N	Report	Report		Report		2/Week	24 Hour Comp
Kjeldahl-N	Report			Report		1/Week	24 Hour Comp
Nitrate-Nitrite as N	Report			Report		1/Week	24 Hour Comp
Total Nitrogen	Report	Report		Report		1/Month	Calculation
Total Phosphorus	Report	Report		Report		1/Week	24 Hour Comp
Net Total Nitrogen	Report	41,095				1/Month	Calculation
Net Total Phosphorus	Report	5,479				1/Month	Calculation

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DEVELOPMENT OF EFFLUENT LIMITATIONS

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)

Total Residual Chlorine

No calculations were performed since the WWTF employs ultraviolet disinfection.

Water Quality-Based Limitations

CBOD₅, NH₃-N and DO

WQM 7.0 for Windows is a DEP computer model used to determine wasteload allocations and effluent limitations for CBOD₅, NH₃-N and DO for single and multiple point source discharge scenarios. This model simulates two basic processes. The NH₃-N module simulates the mixing and degradation of NH₃-N in the stream and compares calculated instream NH₃-N concentrations to the water quality criteria. The DO module simulates the mixing and consumption of DO in the stream due to degradation of CBOD₅ and NH₃-N and compares the calculated instream DO concentrations to the water quality criteria. The model then determines the highest pollutant loading the stream can assimilate and still meet water quality criteria under the design conditions.

The model recommended the following:

Parameter	Effluent Limitations (mg/L)		
	30 Day Average	Maximum	Minimum
CBOD ₅	25		
NH ₃ -N	5.5	11	
DO			3

A winter limit for ammonia-nitrogen, three times the summer limitation, has been established at an earlier issuance and will be continued.

See Attachment 04 for the WQM model results.

Chesapeake Bay TMDL

Despite 25 years of extensive restoration efforts, the Chesapeake Bay Total Maximum Daily Load (TMDL) was prompted by insufficient progress and continued poor water quality in the Chesapeake Bay and its tidal tributaries. This TMDL, required by the Clean Water Act, is the largest ever developed by the Environmental Protection Agency (EPA). This document identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Virginia, West Virginia, District of Columbia and Pennsylvania. It also sets pollution limits necessary to meet applicable water quality standards in the Bay, tidal rivers and embayments.

Pennsylvania explains how and when it will meet its pollution allocations in its Watershed Implementation Plan (WIP), which is incorporated into the TMDL. Pennsylvania's permitting strategy for significant dischargers has been outlined in the Phase I WIP, incorporated in the Phase III WIP by reference, and imposes Total Nitrogen (TN) and Total Phosphorus (TP) cap loads on the significant dischargers.

CONTINUED on the next page.

Because of the design flow of this facility (2.25 MGD), the Department considers this a Significant Sewage Discharger (Phase 2) for the purposes of implementing the Chesapeake Bay TMDL. The 2009 issuance of this permit included the establishment of annual caploads of 41,095 pounds per year TN and 5,479 pounds per year TP.

Offsets are pollutant load reductions, measured in pounds, that may be used to comply with NPDES permit effluent limitations and must be approved by the Department prior to use. In a January 07, 2013 letter from Brinjac Engineering nitrogen offsets were requested for the MCMA. The letter contained documentation identifying the 292 residences where the on-lot disposal system (OLDS) has been retired and the residences have been connected to the collection system. The Department, in accordance with the Phase III Watershed Implementation Plan (WIP) Wastewater Supplement (July 2022), allows for an offset of 25 pounds of TN per year for every residence in existence prior to January 01, 2003 where the OLDS has since been retired. The 292 residences provide for an annual offset of 7,300 pounds of TN. The Department approved the use of these offsets in a letter dated March 13, 2013.

The Phase III WIP calls for the continued monitoring of Ammonia-N, Kjeldahl-N, Nitrate-Nitrite as N, TN and TP. The permit will contain a Part C condition for the Chesapeake Bay nutrient requirements. The permit will also contain a Part A footnote explaining the offsets.

Toxics Screening Analysis

As part of the application, MCMA analyzed and submitted an effluent analysis for all parameters in Pollutant Groups (PG) 1 through 6.

Maximum pollutant concentrations, and non-detects (NDs), for PG 1 and 2 were entered into the Department's Toxics Management Spreadsheet (TMS), which has since replaced both the TSA spreadsheet and PENTOXSD models used in the last renewal. The TMS is used to determine reasonable potential (RP) and calculate water quality-based effluent limitations (WQBELS) for discharges of toxic pollutants from a single discharge point. The TMS utilizes the following logic to assign either no action, effluent limitation or monitoring; 1. Establish average monthly, daily maximum and IMAX limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL (RP is demonstrated), 2. Establish monitoring requirements for non-conservative pollutants where the maximum reported concentrations is between 25% to 50% of the WQBEL and 3. Establish monitoring requirements for conservative pollutants where the maximum reported concentration is between 10% to 50% of the WQBEL. Partial mix factors (PMFs) were obtained from the PENTOXSD modeling performed in 2017.

The TMS recommended the following monitoring and limitations.

Pollutant	Mass Limits		Concentration				Governing WQBEL	WQBEL Basis	Comment
	AML (lbs/day)	MDL (lb/day)	AML	MDL	IMAX	Units			
Total Copper	0.43	0.66	0.023	0.035	0.057	mg/L	0.023	AFC	≥ 50% WQBEL (RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	134	CFC	> 10%WQBEL (No RP)
Total Zinc	3.66	5.70	0.19	0.30	0.49	mg/L	0.19	AFC	≥ 50% WQBEL (RP)
Pentachlorophenol	0.006	0.009	0.32	0.50	0.81	µg/L	0.32	CRL	≥ 50% WQBEL (RP)
Benzo(a)Anthracene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	≥ 50% WQBEL (RP)
Benzo(a)Pyrene	0.00002	0.00003	0.001	0.002	0.003	µg/L	0.001	CRL	≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.002	0.003	0.11	0.17	0.27	µg/L	0.11	CRL	≥ 50% WQBEL (RP)
Bis(2-Chloroethyl)Ether	0.006	0.009	0.32	0.50	0.81	µg/L	0.32	CRL	≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.064	0.10	3.44	5.36	8.59	µg/L	3.44	CRL	≥ 50% WQBEL (RP)
Butyl Benzyl Phthalate	0.005	0.008	0.26	0.41	0.66	µg/L	0.26	THH	≥ 50% WQBEL (RP)
Chrysene	0.024	0.038	1.29	2.01	3.22	µg/L	1.29	CRL	≥ 50% WQBEL (RP)
DiBenzo(a,h)Anthracene	0.00002	0.00003	0.001	0.002	0.003	µg/L	0.001	CRL	≥ 50% WQBEL (RP)
3,3-Dichlorobenzidene	0.01	0.016	0.54	0.84	1.34	µg/L	0.54	CRL	≥ 50% WQBEL (RP)
2,6-Dinitrotoluene	0.01	0.016	0.54	0.84	1.34	µg/L	0.54	CRL	≥ 50% WQBEL (RP)
Hexachlorobenzene	0.00002	0.00003	0.0009	0.001	0.002	µg/L	0.0009	CRL	≥ 50% WQBEL (RP)
Hexachlorobutadiene	0.002	0.003	0.11	0.17	0.27	µg/L	0.11	CRL	≥ 50% WQBEL (RP)
Hexachlorocyclopentadiene	0.049	0.077	2.63	4.11	6.58	µg/L	2.63	CFC	≥ 50% WQBEL (RP)
Hexachloroethane	0.02	0.031	1.07	1.68	2.69	µg/L	1.07	CRL	≥ 50% WQBEL (RP)
Indeno(1,2,3-cd)Pyrene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	≥ 50% WQBEL (RP)
n-Nitrosodi-n-Propylamine	0.001	0.002	0.054	0.084	0.13	µg/L	0.054	CRL	≥ 50% WQBEL (RP)
Phenanthrene	0.049	0.077	2.63	4.11	6.58	µg/L	2.63	CFC	≥ 50% WQBEL (RP)
1,2,4-Trichlorobenzene	0.003	0.005	0.18	0.29	0.46	µg/L	0.18	THH	≥ 50% WQBEL (RP)
4,4-DDT	0.000006	0.000009	0.0003	0.0005	0.0008	µg/L	0.0003	CRL	≥ 50% WQBEL (RP)

See Attachment 05 for the TMS spreadsheet.

CONTINUED on the next page.

Many of the parameters proposed for limitations (above) were identified as non-detectable (ND) in the application's pollutant groups and are not typically found in the effluent from a *Publicly Owned Treatment Works* (POTW). Many of the NDs were higher than the Chapter 93 criteria and the Target QLs identified in the application instructions and are therefore considered parameters of concern. In accordance with the Department SOP #BPNPSM-PMT-033, the MCMA will be offered another opportunity during the draft permit comment period in order to demonstrate these pollutants are not in the effluent.

Best Professional Judgment (BPJ) Limitations

In the absence of applicable effluent guidelines for the discharge or pollutant, permit writers must identify and/or develop needed technology-based effluent limitations (TBELs) on a case-by-case basis, in accordance with the statutory factors specified in the Clean Water Act.

This permit will require an effluent limit for Dissolved Oxygen (DO) of 4.0 mg/L (as a minimum), to ensure that the effluent is well oxygenated at the point of discharge and the instream DO criteria is not violated.

Anti-Backsliding

In order to comply with 40 CFR § 122.44(l) (anti-backsliding requirements), the Department must issue a renewed permit with limitations as stringent as that of the previous permit.

No less stringent limitations have been proposed for this draft. The monthly average mass loading for Total Zinc in the existing permit is incorrect. It should have been 3.75 lb/day instead of 3.50 lb/day.

The current WQM model proposed a monthly average for Ammonia-Nitrogen of 5.5 mg/L. The current limit of 5.0 mg/L will remain in the permit.

DEVELOPMENT OF EFFLUENT MONITORING

Influent Monitoring

In order to adequately characterize the influent wastewater, monitoring of influent Biochemical Oxygen Demand (BOD5) and Total Suspended Solids (TSS) will be continued at the frequency of 2/Week. This is in accordance with Department procedure.

Toxics Monitoring

As explained above, the Department's TMS model recommends monitoring for Total Nickel.

E.coli

The Department is requiring the monitoring of *Escherichia coli* (*E. coli*), a pathogenic bacterium normally found in the intestines of healthy people and animals which is used as a fecal contamination indicator in freshwater ecosystems. Section 303(c)(1) of the Clean Water Act requires that Pennsylvania periodically review and revise water quality standards, if necessary. The 2017 triennial review final form rulemaking, published in 2020, has revised the Chapter 93 water quality standards regulations for bacteria to include *E. coli*. To further characterize fecal contamination of surface waters during the swimming season, the Department is requiring the quarterly reporting of effluent *E. coli* effluent values. In accordance with 25 PA § 92a.61, the Department may impose reasonable monitoring requirements on pollutants which could have impact on the quality of the Commonwealth's waters or the quality of waters in other states.

Per- and Polyfluoroalkyl Substances

Per- and Polyfluoroalkyl Substances (PFAS) are widely used, long lasting chemicals, components of which break down very slowly over time. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. Scientific studies have demonstrated that exposure to some PFAS in the environment may be linked to harmful effects in humans and animals. In an attempt to assist the Environmental Protection Agency (EPA) in studying the effects of PFAS, the Department is requiring the annual monitoring of PFOA, PFOS, HFPO-DA and PFBS. In accordance with 25 PA § 92a.61, the Department may impose reasonable monitoring requirements on pollutants which could have impact on the quality of the Commonwealth's waters or the quality of waters in other states.

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TMDL Parameters

Since there is an approved TMDL for the receiving stream, the annual monitoring of the TMDL parameters of concern (Total Aluminum, Total Iron and Total Manganese) will be required to ensure that the discharge is not contributing to the impairment of the receiving stream.

See below for additional information.

STORMWATER

The MCMA maintains one stormwater outfall at the WWTF (021), located at latitude 40° 47' 13.10" and longitude -76° 27' 3.03". This outfall drains approximately 54,000 square feet and discharges to the swale that borders the Northwest side of the facility. The permit will contain a Part C special condition for the management of stormwater.

RECEIVING STREAMStream Characteristics

The receiving stream is Shamokin Creek, a tributary to the Susquehanna River. Shamokin Creek, according to 25 PA § 93.9M, is protected for *Warm Water Fishes (WWF)* and *Migratory Fishes (MF)*. These are the streams *Designated Uses*, which is defined in 25 PA § 93.1 as "those uses specified in §§ 93.9a – 93.9z for each waterbody or segment whether or not the use is being attained". Designated uses are regulations promulgated by the Environmental Quality Board (EQB) throughout the rulemaking process. This stream currently has no *Existing Use*, which is defined in 25 PA § 93.1 as "those uses actually attained in the waterbody on or after November 28, 1975 whether or not they are included in the water quality standards". Shamokin Creek is identified by stream code 18489. This stream is in (Chapter 93) drainage list M and State Water Plan watershed 6B (Mahanoy and Shamokin Creeks).

Impairment/TMDL

According to Department water quality data, Shamokin Creek is not attaining its designated uses with respect to aquatic life. The stream is impaired by metals due to Abandoned Mine Drainage (AMD). A Total Maximum Daily Load (TMDL) was developed for Shamokin Creek by the Department's Pottsville District Mining office and the Susquehanna River Basin Commission in 2001. This TMDL was approved by EPA later in 2001. The TMDL recommends the reduction in the discharge of metals in excess of the Department's water quality standards. The TMDL set allowable loadings at specified points in Shamokin Creek for Aluminum, Iron, Manganese and Acidity from both point and nonpoint sources.

Shamokin Creek is attaining its designated uses for recreation.

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WHOLE EFFLUENT TOXICITY TESTING

Whole Effluent Toxicity (WET) Testing is a measure of the aggregate toxic effect to aquatic organisms from all the pollutants in a facility’s wastewater effluent. The WET test measures the treated wastewater’s effect on the specific organisms’ ability to survive, grow and reproduce. WET testing methods are specified in 40 CFR § 136.3. The organisms used in this test are the water flea (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promela*).

Summary of Four Most Recent Test Results

For Outfall 001, **Chronic** WET Testing was completed for this renewal application. The dilution series used for the tests was: 100%, 68%, 35%, 18%, and 9%. The Target Instream Waste Concentration (TIWC) used for analysis of the results is: 35.77%.

NOEC/LC50 Data Analysis

Test Date	Ceriodaphnia Results (% Effluent)			Pimephales Results (% Effluent)			Pass? *
	NOEC Survival	NOEC Reproduction	LC50	NOEC Survival	NOEC Growth	LC50	
August 2018	100	100	>100	100	100	>100	YES
September 2019	100	9	100	100	100	>100	NO
October 2019	100	100	>100				YES
August 2020	100	35.77	100	100	100	>100	NO
September 2020	100	100	>100				YES
August 2021	100	100	>100	100	100	>100	YES

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

Is there reasonable potential for an excursion above water quality standards based on the results of these tests? YES NO
 (NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).

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

Acute Partial Mix Factor (PMFa): **0.983**

Chronic Partial Mix Factor (PMFc): **1.0**

1. Determine IWC – Acute (IWCa):

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

$$[(2.25 \text{ MGD} \times 1.547) / ((5.68 \text{ cfs} \times 0.983) + (2.25 \text{ MGD} \times 1.547))] \times 100 = 38.4\%$$

Is IWCa < 1%? YES NO

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

2. Determine Target IWCC (If Chronic Tests Required)

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

$$[(2.25 \text{ MGD} \times 1.547) / ((5.68 \text{ cfs} \times 1.0) + (2.25 \text{ MGD} \times 1.547))] \times 100 = 37.99\%$$

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCC)

Dilution Series = **100%, 69%, 37%, 19%, and 9%**.

WET Limits

Has reasonable potential been determined? YES NO

Will WET limits be established in the permit? YES NO

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

Due to two reproduction failures in the last four tests for *Ceriodaphnia dubia*, a chronic toxicity WET limit will be established

TUc = 1 / TIWCC

TUc (Ceriodaphnia Reproduction) = 1 / 0.3799

TUc (Ceriodaphnia Reproduction) = 2.63

The permit will contain a Part C special condition for the WET requirements.

CONTINUED on the next page.

ADDITIONAL CONSIDERATIONSHauled-In Wastes

According to the application materials, the MCMA does not accept hauled-in wastes.

Mass Limitations

Existing mass limitations for CBOD₅ and TSS are calculated by multiplying the concentration (mg/L) by the flow (MGD) by the conversion (8.34).

Rounding of Limitations

Limitations have been rounded in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Limit Multipliers

The instantaneous maximum limitations have been calculated using multipliers of 2.0 (for sewage discharges) and 2.5 (for toxic industrial discharges) for determining the IMAX. This practice is in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001).

Sample Frequencies and Types

The sample type and minimum measurement frequencies are in accordance with the Department's *Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits* (#362-0400-001). The minimum measurement frequencies of the nutrient parameters are in accordance with the Department's *Phase III Watershed Implementation Plan* of the Chesapeake Bay TMDL.

Standard Operating Procedures (SOPs)

The review of this permit application was performed in accordance with the Department's *SOP for New and Reissuance Sewage Individual NPDES Permit Applications* and *SOP for Establishing Effluent Limitations for Individual Sewage Permits* (SOP #BPNPSM-PMT-033).

Special Permit Conditions

Chesapeake Bay Nutrient Requirements
Solids Management for Non-Lagoon Treatment Systems
Whole Effluent Toxicity – Permit Limits
Stormwater Requirements for Sewage Facilities \geq 1.0 MGD
WQBELs Below Detection Limit
Stormwater Prohibition
Approval Contingencies
Proper Waste Disposal

Supplemental Discharge Monitoring Reports

Daily Effluent Monitoring
Non-Compliance Reporting
Biosolids Production and Disposal
Hauled-in Municipal Waste
Influent and Process Control
Lab Accreditation
Whole Effluent Toxicity

CONTINUED on the next page.

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

Discharge Parameter	Mass Limits (lb/day)		Concentrations (mg/L unless noted)				Monitoring Requirements	
	Monthly Average	Weekly Average	Minimum	Monthly Average	Weekly Average	IMAX	Minimum Measurement Frequency	Required Sample Type
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Meter
pH	XXX	XXX	6.0 Instant Min	XXX	XXX	9.0	1/Day	Grab
Fecal Coliform (No./100mL) 05/01-09/30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/Week	Grab
Fecal Coliform (No./100mL) 10/01-04/30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/Week	Grab
BOD5 Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/Week	24 Hour Comp
Total Suspended Solids Raw Sewage Influent	Report	Report Daily Max	XXX	Report	XXX	XXX	2/Week	24 Hour Comp
CBOD5	465	750	XXX	25	40	50	2/Week	24 Hour Comp
Total Suspended Solids	560	840	XXX	30	45	60	2/Week	24 Hour Comp
UV Light Transmittance (%)	XXX	XXX	Report	XXX	XXX	XXX	1/Day	Meter
Dissolved Oxygen	XXX	XXX	4.0 Instant Min	XXX	XXX	XXX	1/Day	Grab
Ammonia-N 06/01-10/31	90	140	XXX	5.5	8.2	11	2/Week	24 Hour Comp
Ammonia-N 11/01-05/31	280	420	XXX	16.5	24.7	33	2/Week	24 Hour Comp
Toxicity Chronic, Ceriodaphnia Reproduction	XXX	XXX	XXX	XXX	2.63 Daily Max	XXX	See Permit	24 Hour Composite
Total Copper	0.43	0.66 Daily Max	XXX	0.023	0.035 Daily Max	0.057	1/Week	24 Hour Comp
Total Zinc	3.66	5.70 Daily Max	XXX	0.19	0.30 Daily Max	0.49	1/Week	24 Hour Comp
Pentachlorophenol (µg/L)	0.006	0.009	XXX	0.32	0.50	0.81	1/Week	24 Hour Comp
Benzo(a)Anthracene (µg/L)	0.0002	0.0003	XXX	0.011	0.017	0.027	1/Week	24 Hour Comp
Benzo(a)Pyrene (µg/L)	0.00002	0.00003	XXX	0.001	0.002	0.003	1/Week	24 Hour Comp
3,4-Benzofluoranthene (µg/L)	0.0002	0.0003	XXX	0.011	0.017	0.027	1/Week	24 Hour Comp
Benzo(k)Fluoranthene (µg/L)	0.002	0.003	XXX	0.11	0.17	0.27	1/Week	24 Hour Comp
Bis(2-Chloroethyl)Ether (µg/L)	0.006	0.009	XXX	0.32	0.50	0.81	1/Week	24 Hour Comp
Bis(2-Ethylhexyl)Phthalate (µg/L)	0.064	0.10	XXX	3.44	5.36	8.59	1/Week	24 Hour Comp
Butyl Benzyl Phthalate (µg/L)	0.005	0.008	XXX	0.26	0.41	0.66	1/Week	24 Hour Comp
Chrysene (µg/L)	0.024	0.038	XXX	1.29	2.01	3.22	1/Week	24 Hour Comp
DiBenzo(a,h)Anthracene (µg/L)	0.00002	0.00003	XXX	0.001	0.002	0.003	1/Week	24 Hour Comp
3,3-Dichlorobenzidene (µg/L)	0.01	0.016	XXX	0.54	0.84	1.34	1/Week	24 Hour Comp
2,6-Dinitrotoluene (µg/L)	0.01	0.016	XXX	0.54	0.84	1.34	1/Week	24 Hour Comp
Hexachlorobenzene (µg/L)	0.00002	0.00003	XXX	0.0009	0.001	0.002	1/Week	24 Hour Comp
Hexachlorobutadiene (µg/L)	0.002	0.003	XXX	0.11	0.17	0.27	1/Week	24 Hour Comp
Hexachlorocyclopentadiene (µg/L)	0.049	0.077	XXX	2.63	4.11	6.58	1/Week	24 Hour Comp
Hexachloroethane (µg/L)	0.02	0.031	XXX	1.07	1.68	2.69	1/Week	24 Hour Comp
Indeno(1,2,3-cd)Pyrene (µg/L)	0.0002	0.0003	XXX	0.011	0.017	0.027	1/Week	24 Hour Comp
n-Nitrosodi-n-Propylamine (µg/L)	0.001	0.002	XXX	0.054	0.084	0.13	1/Week	24 Hour Comp
Phenanthrene (µg/L)	0.049	0.077	XXX	2.63	4.11	6.58	1/Week	24 Hour Comp
1,2,4-Trichlorobenzene (µg/L)	0.003	0.005	XXX	0.18	0.29	0.46	1/Week	24 Hour Comp

4,4-DDT (µg/L)	0.000006	0.000009	XXX	0.0003	0.0005	0.0008	1/Week	24 Hour Comp
Total Nickel (µg/L)	Report	Report	XXX	Report	Report	XXX	1/Month	24 Hour Comp
Total Aluminum	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	24 Hour Comp
Total Iron	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	24 Hour Comp
Total Manganese	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	24 Hour Comp
PFOA (ng/L)	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	Grab
PFOS (ng/L)	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	Grab
HFPO-DA (ng/L)	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	Grab
PFBS (ng/L)	Report Annl Avg	Report Daily Max	XXX	Report Annl Avg	Report Daily Max	XXX	1/Year	Grab
E. Coli (No./100mL)	XXX	XXX	XXX	XXX	XXX	Report	1/Year	Grab

Discharge Parameter	Mass Load (lb)		Concentrations (mg/L)			Monitoring Requirements	
	Monthly	Annual	Minimum	Monthly Average	Maximum	Minimum Measurement Frequency	Required Sample Type
Ammonia-N	Report	Report	XXX	Report	XXX	2/Week	24 Hour Comp
Kjeldahl-N	Report	XXX	XXX	Report	XXX	1/Week	24 Hour Comp
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/Week	24 Hour Comp
Total Nitrogen	Report	Report	XXX	Report	XXX	1/Month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	1/Week	24 Hour Comp
Net Total Nitrogen	Report	41,095	XXX	XXX	XXX	1/Month	Calculation
Net Total Phosphorus	Report	5,479	XXX	XXX	XXX	1/Month	Calculation

END of Fact Sheet.

ATTACHMENT 01

Q₇₋₁₀ Analysis

Facility:	MCMA
Outfall:	001
NPDES Permit No.:	PA0024406
RMI at Outfall:	29.5

Reference Stream Gage Information	
Stream Name	Shamokin Creek
Reference Gage	01554500
Station Name	Shamokin Creek near Shamokin, PA
Gage Drainage Area (sq. mi.)	54
Q ₇₋₁₀ at gage (cfs)	22
Yield Ratio (cfs/mi ²)	0.4059

Q ₇₋₁₀ at Outfall	
Drainage Area at site (sq. mi.)	14
Q ₇₋₁₀ at discharge site (cfs)	5.683
Q ₇₋₁₀ at discharge site (mgd)	3.6728

26 Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania

Table 2. Selected low-flow statistics for streamgage locations in and near Pennsylvania.—Continued

[ft³/s; cubic feet per second; —, statistic not computed; <, less than]

Streamgage number	Period of record used in analysis ¹	Number of years used in analysis	1-day, 10-year (ft ³ /s)	7-day, 10-year (ft ³ /s)	7-day, 2-year (ft ³ /s)	30-day, 10-year (ft ³ /s)	30-day, 2-year (ft ³ /s)	90-day, 10-year (ft ³ /s)
01546000	1912–1934	17	1.8	2.2	6.8	3.7	12.1	11.2
01546400	1986–2008	23	13.5	14.0	19.6	15.4	22.3	18.7
01546500	1942–2008	67	26.8	29.0	41.3	31.2	44.2	33.7
01547100	1969–2008	40	102	105	128	111	133	117
01547200	1957–2008	52	99.4	101	132	106	142	115
01547500	² 1971–2008	38	28.2	109	151	131	172	153
01547500	³ 1956–1969	14	90.0	94.9	123	98.1	131	105
01547700	1957–2008	52	.5	.6	2.7	1.1	3.9	2.2
01547800	1971–1981	11	1.6	1.8	2.4	2.1	2.9	3.5
01547950	1970–2008	39	12.1	13.6	28.2	17.3	36.4	23.8
01548005	² 1971–2000	25	142	151	206	178	241	223
01548005	³ 1912–1969	58	105	114	147	125	165	140
01548500	1920–2008	89	21.2	24.2	50.1	33.6	68.6	49.3
01549000	1910–1920	11	26.0	32.9	78.0	46.4	106	89.8
01549500	1942–2008	67	.6	.8	2.5	1.4	3.9	2.6
01549700	1959–2008	50	33.3	37.2	83.8	51.2	117	78.4
01550000	1915–2008	94	6.6	7.6	16.8	11.2	24.6	18.6
01551500	² 1963–2008	46	520	578	1,020	678	1,330	919
01551500	³ 1901–1961	61	400	439	742	523	943	752
01552000	1927–2008	80	20.5	22.2	49.5	29.2	69.8	49.6
01552500	1942–2008	67	.9	1.2	3.1	1.7	4.4	3.3
01553130	1969–1981	13	1.0	1.1	1.5	1.3	1.8	1.7
01553500	² 1968–2008	41	760	838	1,440	1,000	1,850	1,470
01553500	³ 1941–1966	26	562	619	880	690	1,090	881
01553700	1981–2008	28	9.1	10.9	15.0	12.6	17.1	15.2
01554000	² 1981–2008	28	1,830	1,990	3,270	2,320	4,210	3,160
01554000	³ 1939–1979	41	1,560	1,630	2,870	1,880	3,620	2,570
01554500	1941–1993	53	16.2	22.0	31.2	25.9	35.7	31.4
01555000	1931–2008	78	33.5	37.6	58.8	43.4	69.6	54.6
01555500	1931–2008	78	4.9	6.5	18.0	9.4	24.3	16.6
01556000	1918–2008	91	43.3	47.8	66.0	55.1	75.0	63.7
01557500	1946–2008	63	2.8	3.2	6.3	4.2	8.1	5.8
01558000	1940–2008	69	56.3	59.0	79.8	65.7	86.2	73.7
01559000	1943–2008	66	104	177	249	198	279	227
01559500	1931–1958	28	9.3	10.5	15.0	12.4	17.8	15.8
01559700	1963–1978	16	.1	.1	.2	.1	.3	.2
01560000	1941–2008	68	8.5	9.4	15.6	12.0	20.2	16.2
01561000	1932–1958	27	.4	.5	1.6	.8	2.5	1.7
01562000	1913–2008	96	64.1	67.1	106	77.4	122	94.5
01562500	1931–1957	27	1.1	1.6	3.8	2.3	5.4	3.7
01563200	² 1974–2008	35	—	—	—	112	266	129
01563200	³ 1948–1972	25	10.3	28.2	86.1	64.5	113	95.5
01563500	² 1974–2008	35	384	415	519	441	580	493
01563500	³ 1939–1972	34	153	242	343	278	399	333
01564500	1940–2008	69	3.6	4.2	10.0	6.2	14.4	10.6

Table 1 13

Table 1. List of U.S. Geological Survey streamgage locations in and near Pennsylvania with updated streamflow statistics.—Continued

[Latitude and Longitude in decimal degrees; mi², square miles]

Streamgage number	Streamgage name	Latitude	Longitude	Drainage area (mi ²)	Regulated ¹
01541303	West Branch Susquehanna River at Hyde, Pa.	41.005	-78.457	474	Y
01541308	Bradley Run near Ashville, Pa.	40.509	-78.584	6.77	N
01541500	Clearfield Creek at Dimeling, Pa.	40.972	-78.406	371	Y
01542000	Moshannon Creek at Osceola Mills, Pa.	40.850	-78.268	68.8	N
01542500	WB Susquehanna River at Karthaus, Pa.	41.118	-78.109	1,462	Y
01542810	Waldy Run near Emporium, Pa.	41.579	-78.293	5.24	N
01543000	Driftwood Branch Sinnemahoning Creek at Sterling Run, Pa.	41.413	-78.197	272	N
01543500	Sinnemahoning Creek at Sinnemahoning, Pa.	41.317	-78.103	685	N
01544000	First Fork Sinnemahoning Creek near Sinnemahoning, Pa.	41.402	-78.024	245	Y
01544500	Kettle Creek at Cross Fork, Pa.	41.476	-77.826	136	N
01545000	Kettle Creek near Westport, Pa.	41.320	-77.874	233	Y
01545500	West Branch Susquehanna River at Renovo, Pa.	41.325	-77.751	2,975	Y
01545600	Young Womans Creek near Renovo, Pa.	41.390	-77.691	46.2	N
01546000	North Bald Eagle Creek at Milesburg, Pa.	40.942	-77.794	119	N
01546400	Spring Creek at Houserville, Pa.	40.834	-77.828	58.5	N
01546500	Spring Creek near Axemann, Pa.	40.890	-77.794	87.2	N
01547100	Spring Creek at Milesburg, Pa.	40.932	-77.786	142	N
01547200	Bald Eagle Creek below Spring Creek at Milesburg, Pa.	40.943	-77.786	265	N
01547500	Bald Eagle Creek at Blanchard, Pa.	41.052	-77.604	339	Y
01547700	Marsh Creek at Blanchard, Pa.	41.060	-77.606	44.1	N
01547800	South Fork Beech Creek near Snow Shoe, Pa.	41.024	-77.904	12.2	N
01547950	Beech Creek at Monument, Pa.	41.112	-77.702	152	N
01548005	Bald Eagle Creek near Beech Creek Station, Pa.	41.081	-77.549	562	Y
01548500	Pine Creek at Cedar Run, Pa.	41.522	-77.447	604	N
01549000	Pine Creek near Waterville, Pa.	41.313	-77.379	750	N
01549500	Blockhouse Creek near English Center, Pa.	41.474	-77.231	37.7	N
01549700	Pine Creek below Little Pine Creek near Waterville, Pa.	41.274	-77.324	944	Y
01550000	Lycoming Creek near Trout Run, Pa.	41.418	-77.033	173	N
01551500	WB Susquehanna River at Williamsport, Pa.	41.236	-76.997	5,682	Y
01552000	Loyalsock Creek at Loyalsockville, Pa.	41.325	-76.912	435	N
01552500	Muncy Creek near Sonestown, Pa.	41.357	-76.535	23.8	N
01553130	Sand Spring Run near White Deer, Pa.	41.059	-77.077	4.93	N
01553500	West Branch Susquehanna River at Lewisburg, Pa.	40.968	-76.876	6,847	Y
01553700	Chillisquaque Creek at Washingtonville, Pa.	41.062	-76.680	51.3	N
01554000	Susquehanna River at Sunbury, Pa.	40.835	-76.827	18,300	Y
01554500	Shamokin Creek near Shamokin, Pa.	40.810	-76.584	54.2	N
01555000	Penns Creek at Penns Creek, Pa.	40.867	-77.048	301	N
01555500	East Mahantango Creek near Dalmatia, Pa.	40.611	-76.912	162	N
01556000	Frankstown Branch Juniata River at Williamsburg, Pa.	40.463	-78.200	291	N
01557500	Bald Eagle Creek at Tyrone, Pa.	40.684	-78.234	44.1	N
01558000	Little Juniata River at Spruce Creek, Pa.	40.613	-78.141	220	N
01559000	Juniata River at Huntingdon, Pa.	40.485	-78.019	816	LF
01559500	Standing Stone Creek near Huntingdon, Pa.	40.524	-77.971	128	N
01559700	Sulphur Springs Creek near Manns Choice, Pa.	39.978	-78.619	5.28	N
01560000	Dunning Creek at Belden, Pa.	40.072	-78.493	172	N

StreamStats Version 3 Data

Basin Characteristics Ungaged Site Report

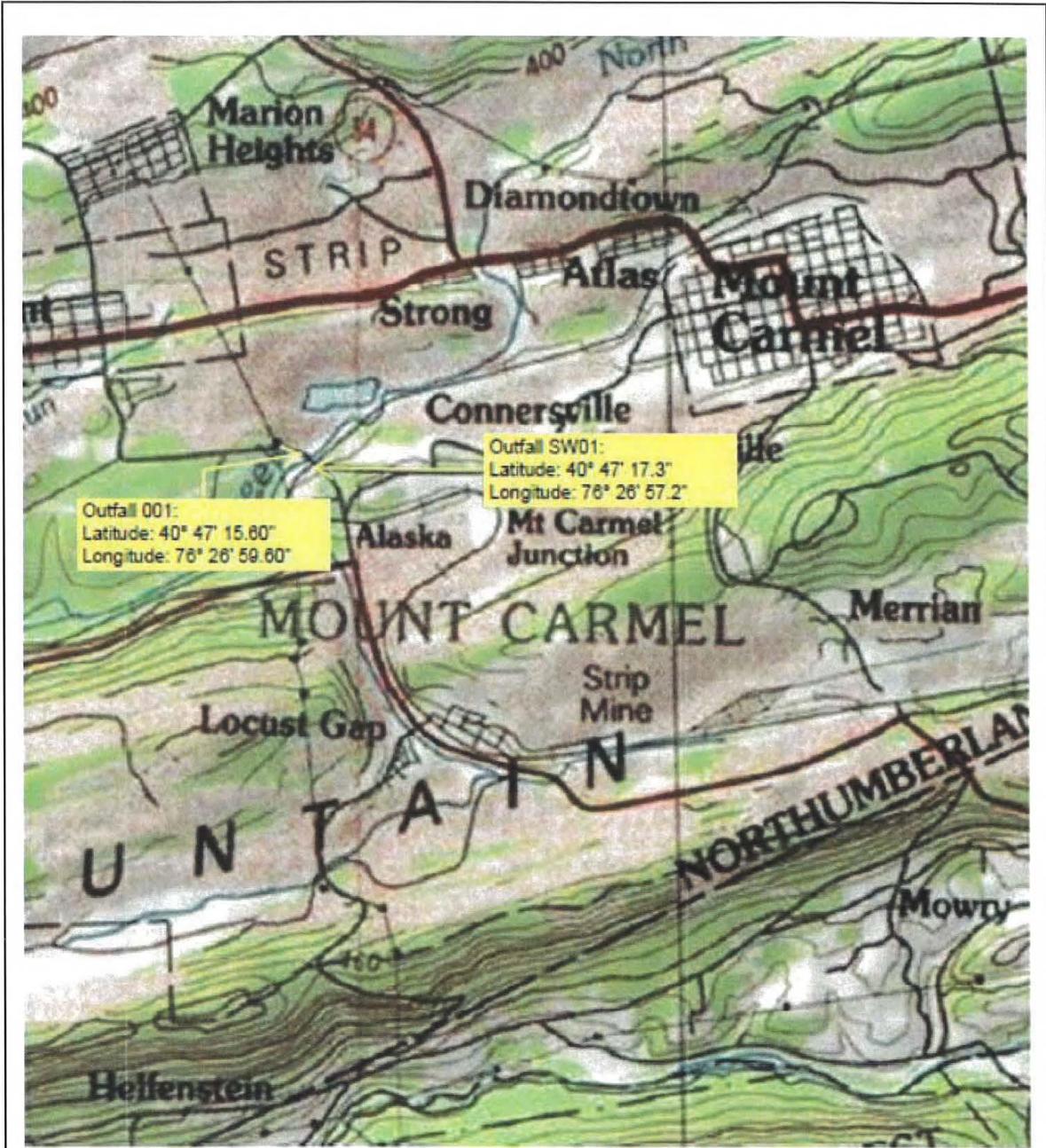
Date: Tues Oct 27, 2015 2:00:11 PM GMT-4

NAD 1983 Latitude: 40.7872 (40 47 14)

NAD 1983 Longitude: -76.4503 (-76 27 02)

Label	Value	Units	Definition
DRNAREA	14	square miles	Area that drains to a point on a stream
STRMTOT	7.84	miles	Total length of mapped streams in basin
STRDEN	0.56	miles per square mile	Stream Density -- total length of streams divided by drainage area
BSLOPD	8.7	degrees	Mean basin slope measured in degrees
CENTROIDX	135014.9	State plane coordinates	Basin centroid horizontal (x) location in state plane coordinates
CENTROIDY	201729	State plane coordinates	Basin centroid vertical (y) location in state plane units
OUTLETX	130765	State plane coordinates	Basin outlet horizontal (x) location in state plane coordinates
OUTLETY	199585	State plane coordinates	Basin outlet vertical (y) location in state plane coordinates
LONG_OUT	-76.45044	degrees	Longitude of Basin Outlet
BSLOPDRAW	8.96	degrees	Mean basin slope, in degrees, raw value unadjusted for bias
FOREST	67	percent	Percentage of area covered by forest
PRECIP	43	inches	Mean Annual Precipitation
URBAN	9	percent	Percentage of basin with urban development
GLACIATED	0	percent	Percentage of basin area that was historically covered by glaciers
ROCKDEP	4.5	feet	Depth to rock
CARBON	0	percent	Percentage of area of carbonate rock
STORAGE	1	percent	Percentage of area of storage (lakes ponds reservoirs wetlands)
ELEV	1379.6	feet	Mean Basin Elevation
MAXTEMP	56	degrees F	Mean annual maximum air temperature over basin area from PRISM 1971-2000 800-m grid
DRN	3.2	dimensionless	Drainage quality (1=well drained to 7=poorly drained) from dataset at http://water.usgs.gov/GIS/metadata/usgswrd/XML/ussoils.xml
IMPNLCD01	6	percent	Percentage of impervious area determined from NLCD 2001 impervious dataset

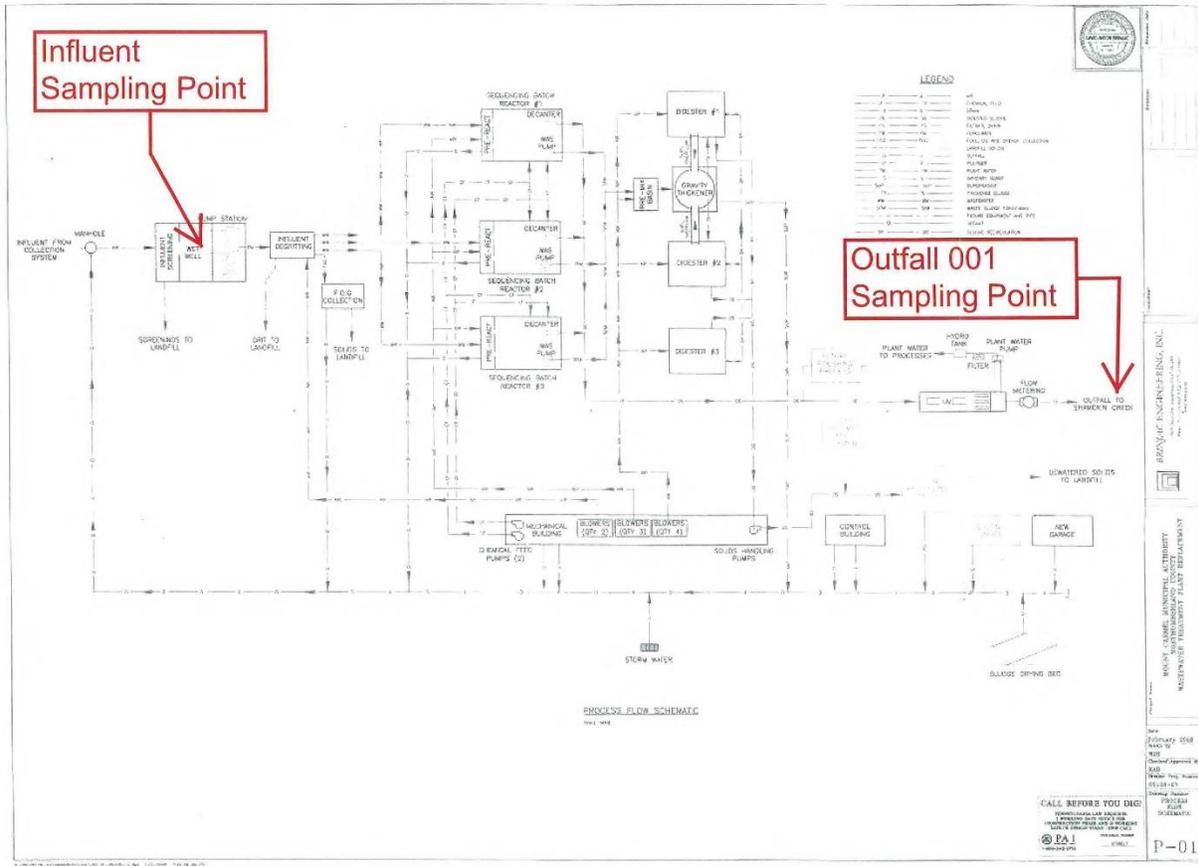
ATTACHMENT 02



Mount Carmel Municipal Authority WWTP
Mount Carmel, Northumberland County, PA
USGS Mount Carmel Quad

TITLE Location Map		DRAWN BY TJM	
SCALE NTS		DATE 04/19/22	

ATTACHMENT 03



ATTACHMENT 04

WQM 7.0 Effluent Limits

<u>SWP Basin</u>		<u>Stream Code</u>		<u>Stream Name</u>			
06B		18489		SHAMOKIN 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)
29.500	MCMA	PA0024406	2.250	CBOD5	25		
				NH3-N	5.5	11	
				Dissolved Oxygen			3

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
06B	18489	SHAMOKIN CREEK	29.500	1034.00	14.00	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.100	0.00	5.68	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
MCMA	PA0024406	2.2500	2.2500	2.2500	0.000	25.00	7.00

Parameter Data

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

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
06B	18489	SHAMOKIN CREEK	27.500	991.00	21.40	0.00000	0.00	<input checked="" type="checkbox"/>

Stream Data

Design Cond.	LFY	Trib Flow	Stream Flow	Rch Trav Time	Rch Velocity	WD Ratio	Rch Width	Rch Depth	Tributary		Stream	
	(cfsm)	(cfs)	(cfs)	(days)	(fps)		(ft)	(ft)	Temp (°C)	pH	Temp (°C)	pH
Q7-10	0.100	0.00	8.69	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data							
Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00
Parameter Data							
Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)			
CBOD5	25.00	2.00	0.00	1.50			
Dissolved Oxygen	3.00	8.24	0.00	0.00			
NH3-N	25.00	0.00	0.00	0.70			

WQM 7.0 Hydrodynamic Outputs

<u>SWP Basin</u>		<u>Stream Code</u>				<u>Stream Name</u>						
06B		18489				SHAMOKIN CREEK						
RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
29.500	5.68	0.00	5.68	3.4808	0.00407	.695	32.99	47.45	0.40	0.306	21.90	7.00
Q1-10 Flow												
29.500	3.64	0.00	3.64	3.4808	0.00407	NA	NA	NA	0.35	0.352	22.45	7.00
Q30-10 Flow												
29.500	7.72	0.00	7.72	3.4808	0.00407	NA	NA	NA	0.45	0.273	21.55	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>
06B	18489	SHAMOKIN CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
29.500	MCMA	13.68	27.98	13.68	27.98	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
29.500	MCMA	1.71	5.5	1.71	5.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
29.50	MCMA	25	25	5.5	5.5	3	3	0	0

WQM 7.0 D.O. Simulation

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
06B	18489	SHAMOKIN CREEK		
<hr/>				
<u>RMI</u>	<u>Total Discharge Flow (mgd)</u>	<u>Analysis Temperature (°C)</u>	<u>Analysis pH</u>	
29.500	2.250	21.900	7.000	
<u>Reach Width (ft)</u>	<u>Reach Depth (ft)</u>	<u>Reach WDRatio</u>	<u>Reach Velocity (fps)</u>	
32.985	0.695	47.453	0.400	
<u>Reach CBOD5 (mg/L)</u>	<u>Reach Kc (1/days)</u>	<u>Reach NH3-N (mg/L)</u>	<u>Reach Kn (1/days)</u>	
10.74	1.283	2.09	0.810	
<u>Reach DO (mg/L)</u>	<u>Reach Kr (1/days)</u>	<u>Kr Equation</u>	<u>Reach DO Goal (mg/L)</u>	
6.251	16.171	Tsivoglou	5	
<u>Reach Travel Time (days)</u>				
0.306				
	Subreach Results			
	<u>TravTime</u>	<u>CBOD5</u>	<u>NH3-N</u>	<u>D.O.</u>
	(days)	(mg/L)	(mg/L)	(mg/L)
	0.031	10.29	2.04	6.55
	0.061	9.86	1.99	6.75
	0.092	9.44	1.94	6.91
	0.122	9.05	1.89	7.02
	0.153	8.67	1.84	7.12
	0.184	8.31	1.80	7.20
	0.214	7.96	1.76	7.27
	0.245	7.62	1.71	7.34
	0.275	7.30	1.67	7.40
	0.306	7.00	1.63	7.45



Discharge Information

Instructions Discharge Stream

Facility: **Mount Carmel Municipal Authority** NPDES Permit No.: **PA0024406** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Domestic with Industrial Contribution**

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
2.25	92.1	6.88	0.983	1				

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			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	432									
Chloride (PWS)	mg/L	200									
Bromide	mg/L	0.037									
Sulfate (PWS)	mg/L	28									
Fluoride (PWS)	mg/L										
Group 2											
Total Aluminum	µg/L	26.6									
Total Antimony	µg/L	0.41									
Total Arsenic	µg/L	< 0.44									
Total Barium	µg/L	17.7									
Total Beryllium	µg/L	< 0.15									
Total Boron	µg/L	217									
Total Cadmium	µg/L	< 0.13									
Total Chromium (III)	µg/L	0.63									
Hexavalent Chromium	µg/L	2									
Total Cobalt	µg/L	4.7									
Total Copper	mg/L	11.9									
Free Cyanide	µg/L	0.025									
Total Cyanide	µg/L	4.6									
Dissolved Iron	µg/L	54.6									
Total Iron	µg/L	74.3									
Total Lead	µg/L	0.62									
Total Manganese	µg/L	163									
Total Mercury	µg/L	< 0.16									
Total Nickel	µg/L	14									
Total Phenols (Phenolics) (PWS)	µg/L	< 16									
Total Selenium	µg/L	1.2									
Total Silver	µg/L	< 0.53									
Total Thallium	µg/L	< 0.081									
Total Zinc	mg/L	91									
Total Molybdenum	µg/L	1.2									
Acrolein	µg/L	< 1.8									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	< 0.58									
Benzene	µg/L	< 0.41									
Bromoform	µg/L	< 0.55									

Group 3	Carbon Tetrachloride	µg/L	<	0.52																
	Chlorobenzene	µg/L	<	0.19																
	Chlorodibromomethane	µg/L	<	0.39																
	Chloroethane	µg/L	<	0.75																
	2-Chloroethyl Vinyl Ether	µg/L	<	0.34																
	Chloroform	µg/L		1																
	Dichlorobromomethane	µg/L	<	0.42																
	1,1-Dichloroethane	µg/L	<	0.26																
	1,2-Dichloroethane	µg/L	<	0.35																
	1,1-Dichloroethylene	µg/L	<	0.28																
	1,2-Dichloropropane	µg/L	<	0.3																
	1,3-Dichloropropylene	µg/L	<	0.66																
	1,4-Dioxane	µg/L	<	72.8																
	Ethylbenzene	µg/L	<	0.31																
	Methyl Bromide	µg/L	<	0.83																
	Methyl Chloride	µg/L	<	0.34																
	Methylene Chloride	µg/L	<	0.75																
	1,1,2,2-Tetrachloroethane	µg/L	<	0.24																
	Tetrachloroethylene	µg/L	<	0.3																
	Toluene	µg/L	<	0.24																
1,2-trans-Dichloroethylene	µg/L	<	0.33																	
1,1,1-Trichloroethane	µg/L	<	0.43																	
1,1,2-Trichloroethane	µg/L	<	0.21																	
Trichloroethylene	µg/L	<	0.33																	
Vinyl Chloride	µg/L	<	0.28																	
Group 4	2-Chlorophenol	µg/L	<	5.9																
	2,4-Dichlorophenol	µg/L	<	6.2																
	2,4-Dimethylphenol	µg/L	<	6.5																
	4,6-Dinitro-o-Cresol	µg/L	<	7.5																
	2,4-Dinitrophenol	µg/L	<	7.9																
	2-Nitrophenol	µg/L	<	6.8																
	4-Nitrophenol	µg/L	<	3.6																
	p-Chloro-m-Cresol	µg/L	<	8.5																
	Pentachlorophenol	µg/L	<	15.3																
	Phenol	µg/L	<	2.5																
	2,4,6-Trichlorophenol	µg/L	<	2.6																
	Group 5	Acenaphthene	µg/L	<	6.1															
Acenaphthylene		µg/L	<	6.4																
Anthracene		µg/L	<	6.6																
Benzdine		µg/L	<	17.4																
Benzo(a)Anthracene		µg/L	<	7.8																
Benzo(a)Pyrene		µg/L	<	7.7																
3,4-Benzofluoranthene		µg/L	<	7.5																
Benzo(ghi)Perylene		µg/L	<	8																
Benzo(k)Fluoranthene		µg/L	<	7.2																
Bis(2-Chloroethoxy)Methane		µg/L	<	5.9																
Bis(2-Chloroethyl)Ether		µg/L	<	5.4																
Bis(2-Chloroisopropyl)Ether		µg/L	<	6.24																
Bis(2-Ethylhexyl)Phthalate		µg/L	<	14.8																
4-Bromophenyl Phenyl Ether		µg/L	<	6.8																
Butyl Benzyl Phthalate		µg/L	<	16.3																
2-Chloronaphthalene		µg/L	<	6.7																
4-Chlorophenyl Phenyl Ether		µg/L	<	6																
Chrysene		µg/L	<	8.1																
Dibenzo(a,h)Anthracene		µg/L	<	7.7																
1,2-Dichlorobenzene		µg/L	<	0.026																
1,3-Dichlorobenzene		µg/L	<	0.023																
1,4-Dichlorobenzene		µg/L	<	0.026																
3,3-Dichlorobenzidine		µg/L	<	8.2																
Diethyl Phthalate		µg/L	<	6.4																
Dimethyl Phthalate		µg/L	<	6.4																
Di-n-Butyl Phthalate		µg/L	<	8.1																
2,4-Dinitrotoluene		µg/L	<	4.7																



Stream / Surface Water Information

Mount Carmel Municipal Authority, NPDES Permit No. PA0024406, Outfall 001

Instructions Discharge Stream

Receiving Surface Water Name: Shamokin Creek No. Reaches to Model: 1

- Statewide Criteria
- Great Lakes Criteria
- ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi ²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	018489	29.5	1034	14			Yes
End of Reach 1	018489	27.5	991	21.4			Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	29.5	0.1	5.68									100	7		
End of Reach 1	27.5	0.1	8.69												

Q_n

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	29.5														
End of Reach 1	27.5														



Model Results

Mount Carmel Municipal Authority, NPDES Permit No. PA0024406, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All

Inputs

Results

Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

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	1,953	
Total Antimony	0	0		0	1,100	1,100	2,865	
Total Arsenic	0	0		0	340	340	885	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	54,686	
Total Boron	0	0		0	8,100	8,100	21,093	
Total Cadmium	0	0		0	1,954	2,07	5.38	Chem Translator of 0.945 applied
Total Chromium (III)	0	0		0	555.568	1,758	4,578	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	42.4	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	247	
Total Copper	0	0		0	13.055	13.6	35.4	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	57.3	
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	62.450	78.5	204	Chem Translator of 0.795 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	4.29	Chem Translator of 0.85 applied
Total Nickel	0	0		0	456.190	457	1,190	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	3.051	3.59	9.35	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	169	
Total Zinc	0	0		0	114.161	117	304	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	7.81	

Acrylonitrile	0	0	0	650	650	1,693
Benzene	0	0	0	640	640	1,667
Bromoform	0	0	0	1,800	1,800	4,687
Carbon Tetrachloride	0	0	0	2,800	2,800	7,291
Chlorobenzene	0	0	0	1,200	1,200	3,125
Chlorodibromomethane	0	0	0	N/A	N/A	N/A
2-Chloroethyl Vinyl Ether	0	0	0	18,000	18,000	46,874
Chloroform	0	0	0	1,900	1,900	4,948
Dichlorobromomethane	0	0	0	N/A	N/A	N/A
1,2-Dichloroethane	0	0	0	15,000	15,000	39,061
1,1-Dichloroethylene	0	0	0	7,500	7,500	19,531
1,2-Dichloropropane	0	0	0	11,000	11,000	28,645
1,3-Dichloropropylene	0	0	0	310	310	807
Ethylbenzene	0	0	0	2,900	2,900	7,552
Methyl Bromide	0	0	0	550	550	1,432
Methyl Chloride	0	0	0	28,000	28,000	72,915
Methylene Chloride	0	0	0	12,000	12,000	31,249
1,1,2,2-Tetrachloroethane	0	0	0	1,000	1,000	2,604
Tetrachloroethylene	0	0	0	700	700	1,823
Toluene	0	0	0	1,700	1,700	4,427
1,2-trans-Dichloroethylene	0	0	0	6,800	6,800	17,708
1,1,1-Trichloroethane	0	0	0	3,000	3,000	7,812
1,1,2-Trichloroethane	0	0	0	3,400	3,400	8,854
Trichloroethylene	0	0	0	2,300	2,300	5,989
Vinyl Chloride	0	0	0	N/A	N/A	N/A
2-Chlorophenol	0	0	0	560	560	1,458
2,4-Dichlorophenol	0	0	0	1,700	1,700	4,427
2,4-Dimethylphenol	0	0	0	660	660	1,719
4,6-Dinitro-o-Cresol	0	0	0	80	80.0	208
2,4-Dinitrophenol	0	0	0	660	660	1,719
2-Nitrophenol	0	0	0	8,000	8,000	20,833
4-Nitrophenol	0	0	0	2,300	2,300	5,989
p-Chloro-m-Cresol	0	0	0	160	160	417
Pentachlorophenol	0	0	0	8,295	8.3	21.6
Phenol	0	0	0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0	0	460	460	1,198
Acenaphthene	0	0	0	83	83.0	216
Anthracene	0	0	0	N/A	N/A	N/A
Benzidine	0	0	0	300	300	781
Benzo(a)Anthracene	0	0	0	0.5	0.5	1.3
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	78,123
Bis(2-Chloroisopropyl)Ether	0	0	0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0	0	4,500	4,500	11,718
4-Bromophenyl Phenyl Ether	0	0	0	270	270	703

Butyl Benzyl Phthalate	0	0	0	140	140	365
2-Chloronaphthalene	0	0	0	N/A	N/A	N/A
Chrysene	0	0	0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0	0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0	0	820	820	2,135
1,3-Dichlorobenzene	0	0	0	350	350	911
1,4-Dichlorobenzene	0	0	0	730	730	1,901
3,3-Dichlorobenzidine	0	0	0	N/A	N/A	N/A
Diethyl Phthalate	0	0	0	4,000	4,000	10,416
Dimethyl Phthalate	0	0	0	2,500	2,500	6,510
Di-n-Butyl Phthalate	0	0	0	110	110	286
2,4-Dinitrotoluene	0	0	0	1,600	1,600	4,167
2,6-Dinitrotoluene	0	0	0	990	990	2,578
1,2-Diphenylhydrazine	0	0	0	15	15.0	39.1
Fluoranthene	0	0	0	200	200	521
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	26.0
Hexachlorocyclopentadiene	0	0	0	5	5.0	13.0
Hexachloroethane	0	0	0	60	60.0	156
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A
Isophorone	0	0	0	10,000	10,000	26,041
Naphthalene	0	0	0	140	140	365
Nitrobenzene	0	0	0	4,000	4,000	10,416
n-Nitrosodimethylamine	0	0	0	17,000	17,000	44,270
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A
n-Nitrosodiphenylamine	0	0	0	300	300	781
Phenanthrene	0	0	0	5	5.0	13.0
Pyrene	0	0	0	N/A	N/A	N/A
1,2,4-Trichlorobenzene	0	0	0	130	130	339
Aldrin	0	0	0	3	3.0	7.81
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	2.47
Chlordane	0	0	0	2.4	2.4	6.25
4,4-DDT	0	0	0	1.1	1.1	2.86
4,4-DDE	0	0	0	1.1	1.1	2.86
4,4-DDD	0	0	0	1.1	1.1	2.86
Dieldrin	0	0	0	0.24	0.24	0.62
alpha-Endosulfan	0	0	0	0.22	0.22	0.57
beta-Endosulfan	0	0	0	0.22	0.22	0.57
Endosulfan Sulfate	0	0	0	N/A	N/A	N/A
Endrin	0	0	0	0.086	0.086	0.22
Endrin Aldehyde	0	0	0	N/A	N/A	N/A
Heptachlor	0	0	0	0.52	0.52	1.35
Heptachlor Epoxide	0	0	0	0.5	0.5	1.3
Toxaphene	0	0	0	0.73	0.73	1.9

CFC

CCT (min): 15.503

PMF: 1

Analysis Hardness (mg/l): 96.998

Analysis pH: 6.95

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					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	579	
Total Arsenic	0	0		0	150	150	395	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	10,791	
Total Boron	0	0		0	1,600	1,600	4,211	
Total Cadmium	0	0		0	0.241	0.26	0.7	Chem Translator of 0.91 applied
Total Chromium (III)	0	0		0	72.287	84.1	221	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	27.4	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	50.0	
Total Copper	0	0		0	8.726	9.09	23.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	13.7	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	3,948	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2,434	3.06	8.05	Chem Translator of 0.795 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	2.38	Chem Translator of 0.85 applied
Total Nickel	0	0		0	50.683	50.8	134	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	13.1	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	34.2	
Total Zinc	0	0		0	115.127	117	307	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	7.9	
Acrylonitrile	0	0		0	130	130	342	
Benzene	0	0		0	130	130	342	
Bromoform	0	0		0	370	370	974	
Carbon Tetrachloride	0	0		0	560	560	1,474	
Chlorobenzene	0	0		0	240	240	632	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	9,211	
Chloroform	0	0		0	390	390	1,026	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	8,159	
1,1-Dichloroethylene	0	0		0	1,500	1,500	3,948	
1,2-Dichloropropane	0	0		0	2,200	2,200	5,790	
1,3-Dichloropropylene	0	0		0	61	61.0	161	
Ethylbenzene	0	0		0	580	580	1,526	

Methyl Bromide	0	0		0	110	110	290
Methyl Chloride	0	0		0	5,500	5,500	14,475
Methylene Chloride	0	0		0	2,400	2,400	6,316
1,1,2,2-Tetrachloroethane	0	0		0	210	210	553
Tetrachloroethylene	0	0		0	140	140	368
Toluene	0	0		0	330	330	869
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	3,685
1,1,1-Trichloroethane	0	0		0	610	610	1,605
1,1,2-Trichloroethane	0	0		0	680	680	1,790
Trichloroethylene	0	0		0	450	450	1,184
Vinyl Chloride	0	0		0	N/A	N/A	N/A
2-Chlorophenol	0	0		0	110	110	290
2,4-Dichlorophenol	0	0		0	340	340	895
2,4-Dimethylphenol	0	0		0	130	130	342
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	42.1
2,4-Dinitrophenol	0	0		0	130	130	342
2-Nitrophenol	0	0		0	1,600	1,600	4,211
4-Nitrophenol	0	0		0	470	470	1,237
p-Chloro-m-Cresol	0	0		0	500	500	1,316
Pentachlorophenol	0	0		0	6.364	6.36	16.7
Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	91	91.0	239
Acenaphthene	0	0		0	17	17.0	44.7
Anthracene	0	0		0	N/A	N/A	N/A
Benzidine	0	0		0	59	59.0	155
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.26
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	15,791
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	2,395
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	142
Butyl Benzyl Phthalate	0	0		0	35	35.0	92.1
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	160	160	421
1,3-Dichlorobenzene	0	0		0	69	69.0	182
1,4-Dichlorobenzene	0	0		0	150	150	395
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	800	800	2,105
Dimethyl Phthalate	0	0		0	500	500	1,316
Di-n-Butyl Phthalate	0	0		0	21	21.0	55.3
2,4-Dinitrotoluene	0	0		0	320	320	842

2,6-Dinitrotoluene	0	0	0	200	200	526	
1,2-Diphenylhydrazine	0	0	0	3	3.0	7.9	
Fluoranthene	0	0	0	40	40.0	105	
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	5.26	
Hexachlorocyclopentadiene	0	0	0	1	1.0	2.63	
Hexachloroethane	0	0	0	12	12.0	31.6	
Indeno(1,2,3-cd)Pyrene	0	0	0	N/A	N/A	N/A	
Isophorone	0	0	0	2,100	2,100	5,527	
Naphthalene	0	0	0	43	43.0	113	
Nitrobenzene	0	0	0	810	810	2,132	
n-Nitrosodimethylamine	0	0	0	3,400	3,400	8,948	
n-Nitrosodi-n-Propylamine	0	0	0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0	0	59	59.0	155	
Phenanthrene	0	0	0	1	1.0	2.63	
Pyrene	0	0	0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0	0	26	26.0	68.4	
Aldrin	0	0	0	0.1	0.1	0.26	
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	0.011	
4,4-DDT	0	0	0	0.001	0.001	0.003	
4,4-DDE	0	0	0	0.001	0.001	0.003	
4,4-DDD	0	0	0	0.001	0.001	0.003	
Dieldrin	0	0	0	0.056	0.056	0.15	
alpha-Endosulfan	0	0	0	0.056	0.056	0.15	
beta-Endosulfan	0	0	0	0.056	0.056	0.15	
Endosulfan Sulfate	0	0	0	N/A	N/A	N/A	
Endrin	0	0	0	0.036	0.036	0.095	
Endrin Aldehyde	0	0	0	N/A	N/A	N/A	
Heptachlor	0	0	0	0.0038	0.004	0.01	
Heptachlor Epoxide	0	0	0	0.0038	0.004	0.01	
Toxaphene	0	0	0	0.0002	0.0002	0.0005	

THH CCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	0	500,000	500,000	N/A	
Chloride (PWS)	0	0	0	0	250,000	250,000	N/A	
Sulfate (PWS)	0	0	0	0	250,000	250,000	N/A	
Total Aluminum	0	0	0	0	N/A	N/A	N/A	
Total Antimony	0	0	0	0	5.6	5.6	14.7	

Total Arsenic	0	0		0	10	10.0	26.3
Total Barium	0	0		0	2,400	2,400	6,316
Total Boron	0	0		0	3,100	3,100	8,159
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	10.5
Dissolved Iron	0	0		0	300	300	790
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	2,632
Total Mercury	0	0		0	0.050	0.05	0.13
Total Nickel	0	0		0	610	610	1,605
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	0.63
Total Zinc	0	0		0	N/A	N/A	N/A
Acrolein	0	0		0	3	3.0	7.9
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	263
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	5.7	5.7	15.0
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	86.9
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	179
Methyl Bromide	0	0		0	100	100.0	263
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	150
1,2-trans-Dichloroethylene	0	0		0	100	100.0	263
1,1,1-Trichloroethane	0	0		0	10,000	10,000	26,318
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	79.0
2,4-Dichlorophenol	0	0		0	10	10.0	26.3
2,4-Dimethylphenol	0	0		0	100	100.0	263
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	5.26
2,4-Dinitrophenol	0	0		0	10	10.0	26.3
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	10,527
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A
Acenaphthene	0	0		0	70	70.0	184
Anthracene	0	0		0	300	300	790
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	526
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	0.26
2-Chloronaphthalene	0	0		0	800	800	2,105
Chrysene	0	0		0	N/A	N/A	N/A
Dibenzo(a,h)Anthracene	0	0		0	N/A	N/A	N/A
1,2-Dichlorobenzene	0	0		0	1,000	1,000	2,632
1,3-Dichlorobenzene	0	0		0	7	7.0	18.4
1,4-Dichlorobenzene	0	0		0	300	300	790
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A
Diethyl Phthalate	0	0		0	600	600	1,579
Dimethyl Phthalate	0	0		0	2,000	2,000	5,264
Di-n-Butyl Phthalate	0	0		0	20	20.0	52.6
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	52.6
Fluorene	0	0		0	50	50.0	132
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	10.5
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	89.5

Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	26.3	
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	52.6	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.18	
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	11.1	
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	52.6	
beta-Endosulfan	0	0		0	20	20.0	52.6	
Endosulfan Sulfate	0	0		0	20	20.0	52.6	
Endrin	0	0		0	0.03	0.03	0.079	
Endrin Aldehyde	0	0		0	1	1.0	2.63	
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 OCT (min): PMF: Analysis Hardness (mg/l): Analysis pH:

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	0.64
Benzene	0	0		0	0.58	0.58	6.23
Bromoform	0	0		0	7	7.0	75.2
Carbon Tetrachloride	0	0		0	0.4	0.4	4.3
Chlorobenzene	0	0		0	N/A	N/A	N/A
Chlorodibromomethane	0	0		0	0.8	0.8	8.59
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	0.95	0.95	10.2
1,2-Dichloroethane	0	0		0	9.9	9.9	106
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A
1,2-Dichloropropane	0	0		0	0.9	0.9	9.67
1,3-Dichloropropylene	0	0		0	0.27	0.27	2.9
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	215
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	2.15
Tetrachloroethylene	0	0		0	10	10.0	107
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	5.91
Trichloroethylene	0	0		0	0.6	0.6	6.44
Vinyl Chloride	0	0		0	0.02	0.02	0.21
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	0.32

Phenol	0	0		0	N/A	N/A	N/A
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	16.1
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	0.001
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.011
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.001
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.011
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.11
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.32
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	3.44
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	1.29
Dibenzo(a,h)Anthracene	0	0		0	0.0001	0.0001	0.001
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	0.54
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	0.54
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.54
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.32
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	0.0009
Hexachlorobutadiene	0	0		0	0.01	0.01	0.11
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A
Hexachloroethane	0	0		0	0.1	0.1	1.07
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.011
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	0.008
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.054
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	35.4
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	0.000009
alpha-BHC	0	0		0	0.0004	0.0004	0.004

beta-BHC	0	0		0	0.008	0.008	0.086	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.003	
4,4-DDT	0	0		0	0.00003	0.00003	0.0003	
4,4-DDE	0	0		0	0.00002	0.00002	0.0002	
4,4-DDD	0	0		0	0.0001	0.0001	0.001	
Dieldrin	0	0		0	0.000001	0.000001	0.00001	
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	0.00006	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.0003	
Toxaphene	0	0		0	0.0007	0.0007	0.008	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: 4

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			
Total Copper	0.43	0.66	0.023	0.035	0.057	mg/L	0.023	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Nickel	Report	Report	Report	Report	Report	µg/L	134	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	3.66	5.7	0.19	0.3	0.49	mg/L	0.19	AFC	Discharge Conc ≥ 50% WQBEL (RP)
Pentachlorophenol	0.006	0.009	0.32	0.5	0.81	µg/L	0.32	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Anthracene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(a)Pyrene	0.00002	0.00003	0.001	0.002	0.003	µg/L	0.001	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,4-Benzofluoranthene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Benzo(k)Fluoranthene	0.002	0.003	0.11	0.17	0.27	µg/L	0.11	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Chloroethyl)Ether	0.006	0.009	0.32	0.5	0.81	µg/L	0.32	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Bis(2-Ethylhexyl)Phthalate	0.064	0.1	3.44	5.36	8.59	µg/L	3.44	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Butyl Benzyl Phthalate	0.005	0.008	0.26	0.41	0.66	µg/L	0.26	THH	Discharge Conc ≥ 50% WQBEL (RP)
Chrysene	0.024	0.038	1.29	2.01	3.22	µg/L	1.29	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Dibenzo(a,h)Anthracene	0.00002	0.00003	0.001	0.002	0.003	µg/L	0.001	CRL	Discharge Conc ≥ 50% WQBEL (RP)
3,3-Dichlorobenzidine	0.01	0.016	0.54	0.84	1.34	µg/L	0.54	CRL	Discharge Conc ≥ 50% WQBEL (RP)
2,6-Dinitrotoluene	0.01	0.016	0.54	0.84	1.34	µg/L	0.54	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobenzene	0.00002	0.00003	0.0009	0.001	0.002	µg/L	0.0009	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorobutadiene	0.002	0.003	0.11	0.17	0.27	µg/L	0.11	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Hexachlorocyclopentadiene	0.049	0.077	2.63	4.11	6.58	µg/L	2.63	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexachloroethane	0.02	0.031	1.07	1.68	2.69	µg/L	1.07	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Indeno(1,2,3-cd)Pyrene	0.0002	0.0003	0.011	0.017	0.027	µg/L	0.011	CRL	Discharge Conc ≥ 50% WQBEL (RP)
n-Nitrosodi-n-Propylamine	0.001	0.002	0.054	0.084	0.13	µg/L	0.054	CRL	Discharge Conc ≥ 50% WQBEL (RP)
Phenanthrene	0.049	0.077	2.63	4.11	6.58	µg/L	2.63	CFC	Discharge Conc ≥ 50% WQBEL (RP)

1,2,4-Trichlorobenzene	0.003	0.005	0.18	0.29	0.46	µg/L	0.18	THH	Discharge Conc ≥ 50% WQBEL (RP)
4,4-DDT	0.000006	0.000009	0.0003	0.0005	0.0008	µg/L	0.0003	CRL	Discharge Conc ≥ 50% WQBEL (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	1,252	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	14.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	6,316	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	4,211	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	0.7	µg/L	Discharge Conc < TQL
Total Chromium (III)	221	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	27.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	50.0	µg/L	Discharge Conc ≤ 10% WQBEL
Free Cyanide	10.5	µg/L	Discharge Conc ≤ 25% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	790	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	3,948	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	8.05	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	2,632	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.13	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	13.1	µg/L	Discharge Conc ≤ 10% WQBEL
Total Silver	5.99	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.63	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	5.01	µg/L	Discharge Conc < TQL
Acrylonitrile	0.64	µg/L	Discharge Conc < TQL
Benzene	6.23	µg/L	Discharge Conc < TQL
Bromoform	75.2	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	4.3	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	263	µg/L	Discharge Conc < TQL
Chlorodibromomethane	8.59	µg/L	Discharge Conc < TQL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	9,211	µg/L	Discharge Conc < TQL

Chloroform	15.0	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	10.2	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	106	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	86.9	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	9.67	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	2.9	µg/L	Discharge Conc ≤ 25% WQBEL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	179	µg/L	Discharge Conc < TQL
Methyl Bromide	263	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	14,475	µg/L	Discharge Conc < TQL
Methylene Chloride	215	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	2.15	µg/L	Discharge Conc < TQL
Tetrachloroethylene	107	µg/L	Discharge Conc < TQL
Toluene	150	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	263	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,605	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	5.91	µg/L	Discharge Conc < TQL
Trichloroethylene	6.44	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.21	µg/L	Discharge Conc < TQL
2-Chlorophenol	79.0	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	26.3	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	263	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	5.26	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	26.3	µg/L	Discharge Conc < TQL
2-Nitrophenol	4,211	µg/L	Discharge Conc < TQL
4-Nitrophenol	1,237	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	267	µg/L	Discharge Conc < TQL
Phenol	10,527	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	16.1	µg/L	Discharge Conc < TQL
Acenaphthene	44.7	µg/L	Discharge Conc ≤ 25% WQBEL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	790	µg/L	Discharge Conc ≤ 25% WQBEL
Benzidine	0.001	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroisopropyl)Ether	526	µg/L	Discharge Conc ≤ 25% WQBEL
4-Bromophenyl Phenyl Ether	142	µg/L	Discharge Conc ≤ 25% WQBEL
2-Chloronaphthalene	2,105	µg/L	Discharge Conc ≤ 25% WQBEL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
1,2-Dichlorobenzene	421	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	18.4	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	395	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,579	µg/L	Discharge Conc ≤ 25% WQBEL
Dimethyl Phthalate	1,316	µg/L	Discharge Conc ≤ 25% WQBEL

Di-n-Butyl Phthalate	52.6	µg/L	Discharge Conc ≤ 25% WQBEL
2,4-Dinitrotoluene	0.54	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.32	µg/L	Discharge Conc < TQL
Fluoranthene	52.6	µg/L	Discharge Conc ≤ 25% WQBEL
Fluorene	132	µg/L	Discharge Conc ≤ 25% WQBEL
Isophorone	89.5	µg/L	Discharge Conc ≤ 25% WQBEL
Naphthalene	113	µg/L	Discharge Conc < TQL
Nitrobenzene	26.3	µg/L	Discharge Conc ≤ 25% WQBEL
n-Nitrosodimethylamine	0.008	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	35.4	µg/L	Discharge Conc ≤ 25% WQBEL
Pyrene	52.6	µg/L	Discharge Conc ≤ 25% WQBEL
Aldrin	0.000009	µg/L	Discharge Conc < TQL
alpha-BHC	0.004	µg/L	Discharge Conc < TQL
beta-BHC	0.086	µg/L	Discharge Conc < TQL
gamma-BHC	1.59	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.003	µg/L	Discharge Conc < TQL
4,4-DDE	0.0002	µg/L	Discharge Conc < TQL
4,4-DDD	0.001	µg/L	Discharge Conc < TQL
Dieldrin	0.00001	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.15	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.15	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	52.6	µg/L	Discharge Conc < TQL
Endrin	0.079	µg/L	Discharge Conc < TQL
Endrin Aldehyde	2.63	µg/L	Discharge Conc < TQL
Heptachlor	0.00006	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.0003	µg/L	Discharge Conc < TQL
Toxaphene	0.0005	µg/L	Discharge Conc < TQL